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Lingyun Zhong April 18, 2011

The Determinants of Human Rights: An Economic Analysis

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Abstract

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Human rights have traditionally been viewed as natural, fundamental, and inalienable. Recently, an innovative economic theory of human rights has proposed examining human rights in a market context, where states supply social contracts, or bundles of rights. Citizens demand rights and choose the state that offers the bundle that best suits their needs, and the market operates efficiently under perfect competition. However, human rights violations occur due to market imperfections, such as migration costs and imperfect information. In this paper, I test the empirical implications of this economic theory, namely whether migration costs, information availability, and education affect levels of physical integrity rights throughout the world. The results align with the theoretical underpinnings and indicate that higher migration costs are correlated with lower levels of physical integrity rights, while greater access to education and information are associated with higher levels of rights. The supportive empirical findings suggest that analyzing human rights through a different theoretical lens may provide new insight into how international organizations may promote human rights in the world.

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Table of Contents

Figures and Tables

Introduction

The topic of human rights has received significant attention in the past few decades. In the aftermath of the violent abuses committed during World War II, the international community gathered around the idea of fundamental human rights. Formalized in 1948 in the Universal Declaration of Human Rights, human rights are typically viewed and defined as a set of "equal and inalienable" rights that each individual possesses just by the sole function of being human. These almost universally accepted rights include the right to life, liberty, and security; freedom from torture; recognition before the law; and many others (United Nations). International whistleblower groups such as Amnesty International and Human Rights Watch, two of the largest non-governmental human rights groups that exist today, also formed around the same period of time. Today, organizations such as these raise awareness of human rights violations in different countries and advocate for greater human rights.

Though almost all nations in the world have ratified the Universal Declaration of Human Rights, promising to uphold the standards inscribed in its text, human rights violations still occur in many countries. In recent years, incidents ranging from genocide in the Darfur region of Sudan to China's repression of 2010 Nobel Peace Prize winner Liu Xiaobo have prompted an international outcry. In light of the importance the subject of human rights has assumed in the world, a wealth of literature has sprung up, analyzing the concept and practice of human rights from all angles. However, most authors conceptualize human rights in its most natural sense, as those natural and inalienable rights that are automatically granted to human beings. Few have examined human rights from a different theoretical perspective or attempted to analyze the behavior of the citizens who are affected by human rights practices in different countries.

This paper builds off of an innovative economic theory of human rights proposed by Andrew Francis in his paper entitled “An Essay on Human Rights and the Market for Social Contracts” (2010). Rather than assuming the dominant view of natural human rights, Francis instead proposes an economic framework, in which there exists an international market for social contracts, or bundles of rights. Human rights are then defined as those rights shared by all social contracts when the perfectly competitive market is in equilibrium, and violations of those rights occur due to market imperfections. In application to the real world, this theory predicts that factors such as migration costs and limited education and information erode the efficiency of the market and are thereby causal factors of human rights violations.

Building off of the proposed economic framework, I attempt to bridge the gap between theory and reality by empirically testing some of the predictions made by the theory and observing whether or not they hold in the real world. I specifically focus on the effects of migration costs, education, and information availability on the level of human rights in the world. The theory predicts that higher migration costs, limited access to education, and limited information availability will all cause the market to operate inefficiently and therefore decrease levels of human rights.

I investigate the predicted effects of migration costs on human rights by running regression analyses using various measures of physical distance. I also include indicators for education and freedom of speech in order to evaluate the other predicted effects. In order to test the robustness of the regression results, I include several alternative specifications of the main regression model, including a country-fixed effects model and a random effects model. As an additional test, I break the world into different regions to examine the effects of the explanatory variables when the focus becomes narrower.

Overall, the results from the empirical testing are in line with predictions made by the theory. The evidence largely supports the contention that levels of human rights decrease as migration costs increase, and increase as access to education and information availability increase. These effects on human rights are largely driven by across-country differences and also differ slightly when broken down by world region. In particular, the human rights levels of Africa and the Pacific are not explained as well by the predictions in the theory. However, the empirical results in general offer support for the continued examination of human rights from an economic, market-based approach.

Theory (Francis 2010)

Before examining the empirical model used in this paper, it is important to understand the details of the underlying theory upon which the model is predicated, as it is a rather different approach. The framework defined by Francis posits the existence of an international market for social contracts, which are bundles of rights, in which different individuals and states are the actors, and the contracts are the goods. States supply social contracts to individuals who demand social contracts, and different states may supply different bundles of rights. Under optimal conditions, the market is in a state of perfect competition, and human rights are "the set of rights common to all social contracts" (Francis 2010, 1).

Specifically, the social contract is the "set of promises of the state to the citizen as well as promises of the citizen to the state" and is defined as "$r = (r_1, \ldots, r_N)$, where r_n represents the 'amount' of each of the rights, duties, and other state characteristics" (Francis 2010, 3). The price function is defined as $p(r) = p(r_1 \ldots r_N)$, and it demonstrates the "minimum price of any potential social contract" (Francis 2010, 3). Both individuals, or citizens, and states are price takers in the

market. On the demand side, citizens essentially shop around for the state that offers the best social contract, assuming that they have complete information, no transaction costs, and are free to choose any available contract. The goal of citizens is to maximize their individual utility functions $U(x,r) = U(x, r_1 \ldots r_N)$, in which x is a consumption good and r are the rights offered by the state. On the supply side, each state can only proffer one kind of social contract to each of its potential citizens, and the state uses resources to produce and fulfill the social contracts. The goal of states is to maximize their profits in a context where costs are defined as $C(M, r_1 \ldots r_N; \alpha)$, where $M(r_1 \ldots r_N)$ represents the number of contracts generated by the state and α indicates the differences in state technology.

Given these definitions of what is being demanded and supplied, the market for social contracts can be viewed much in the same way as any perfectly competitive market is viewed. Given the aggregate demand $Q^D(r)$ of social contracts by all citizens and aggregate supply $Q^S(r)$ of social contracts by all states, "the equilibrium price function $p^*(r)$ is that which satisfies $Q^D(r) = Q^S(r)$ for all r" (Francis 2010, 5). In other words, the set of rights offered by each nation and accepted by each individual is determined in the market in equilibrium and is a function of "citizen preferences, income endowments, and state technology" (Francis 2010, 5). In this context, human rights, which are those rights that are common to all possible social contracts, are endogenous, and in equilibrium, there exists a minimum amount of rights that are provided by all states conjunctively.

Unlike the typical viewpoint of human rights as essential, inalienable rights that individuals enjoy solely as a function of being human, Francis' model assumes that the market mechanism and competition within that international market are the factors that determine the sets of human rights available to citizens of different nations. However, as Francis noted, this

market can only operate efficiently under perfect competition, in which individuals have the capability to choose between the social contracts offered by states, and states respond to that freedom of choice by crafting contracts that differ but offer a minimum amount of rights. In examining reality, however, human rights violations, in which the state offers less than the minimum amount of a right that is determined in equilibrium in the market for social contracts, do occur. These violations are due to imperfections in the market, and those imperfections are what I test in this paper to empirically assess the market-based approach to human rights.

Francis notes that the ideal market relies on various assumptions about "migration costs, freedom of exit, education, information, state market power, and nationalism" (Francis 2010, 7), and human rights violations may occur due to those assumptions failing to hold. One idea Francis posits is that geographic and technological migration costs limit the competitiveness of the market; citizens living in states that are more isolated geographically or from which traveling out is very expensive would have fewer options to migrate to a different state offering a different bundle of rights. The model thus predicts that geographically isolated states, or states from which there are higher migration costs, are more likely to offer fewer rights in their social contracts. Another assumption of the ideal market is that individuals will have knowledge of the different types of social contracts available in the international market in order to choose among them. In reality, states may limit the amount of information their citizens can access or fail to provide adequate or non-biased education. In this case, the model predicts that states in which inadequate or biased education is offered, or in which information is limited, will also offer contracts with fewer rights.

Informed by the theory and its predictions for the real world, I turn to examining how the competitiveness of the market for social contracts affects human rights. I do this by creating an

empirical model that will allow me to assess the effect of the theoretical market imperfections—migration costs, education and information access—on the actual levels of human rights in different states.

Literature

In order to build a reliable empirical model, I first examine the human rights literature to assess how authors have normally tackled this question. As mentioned previously, there has been an abundance of research on various aspects of human rights in the contemporary world, and much of it has investigated the topic of human rights empirically, especially within the field of political science.

Many authors focus on examining causal relationships between one particular variable and the level of human rights in countries, rather than creating a general model of the determinants of human rights. For example, various papers analyze the relationship between democracy and human rights, with the general consensus being that democracy decreases human rights violations (Mesquita, Downs and Smith 2005; Davenport and Armstrong II 2004; Hofferbert and Cingranelli 1996). Other authors have examined why states commit to international treaties and agreements that bind them to certain human rights practices, looking at everything from World Bank structural adjustment agreements to the United Nations Convention Against Torture (Abouharb and Cingranelli 2006; Goodliffe and Hawkins 2006; Hafner-Burton and Tsutsui 2007; Hathaway 2007; Vreeland 2008).

While most authors tend to focus on some specific facet of human rights, Poe and Tate (1994) employ a more general approach in trying to uncover what overarching factors cause states to repress human rights. Poe and Tate focus specifically on the subset of physical integrity

rights, violations of which include “murder, torture, forced disappearance, and imprisonment of persons for their political views” (Poe and Tate 1994, 854). They construct a model of human rights abuse, defining and testing eight factors that they believe affect the level of repression in a state: the level of democracy, population size and growth, the level of development and economic growth, whether or not the state had a leftist regime, whether the state had a military regime, the presence of British cultural influence, international war experience, and civil war experience. The model was presented as follows:

$$\textit{Personal Integrity Abuse}_{tj} = a + \beta_1 \textit{Personal Integrity Abuse}_{(t-l)j} + \beta_2 \textit{Democracy}_{tj} + \beta_3 \textit{Population Size}_{tj} + \beta_4 \textit{Population Change}_{tj} + \beta_5 \textit{Economic Standing}_{tj} + \beta_6 \textit{Economic Growth}_{tj} + \beta_7 \textit{Leftist Government}_{tj} + \beta_8 \textit{Military Control}_{tj} + \beta_9 \textit{British Cultural Influence}_{tj} + \beta_{10} \textit{International War}_{tj} + \beta_{11} \textit{Civil War}_{tj} + e_{tj}.$$

Using time-series data gathered from a variety of sources ranging from Amnesty International to the Freedom House, Poe and Tate estimate a series of regressions with alternative model specifications. Their general results indicate that democracy has a negative effect on repression; a larger population size has a positive effect; and military control and British cultural influence have no effect on repression. The effect of leftist regimes is inconclusive. International and civil war experience tends to have a positive effect on repression, and economic standing has a weak negative effect on repression. Poe and Tate’s analysis is extensively cited in the human rights literature and provides useful insights into the determinants of levels of human rights repression (Hafner-Burton 2006; Abouharb and Cingranelli 2006). The empirical model I use is informed by and loosely based on Poe and Tate’s model.

Whereas Poe and Tate, along with many other authors, focus on the effect of large-scale factors such as democracy and economic growth on human rights, I focus my analysis on factors that could impact an individual's ability to choose between different bundles of rights offered by states. Poe and Tate's analysis informs me that variables such as economic growth and population do have an effect on a government's level of repression, however, and assist me in determining which controls to factor into my model.

There has been little examination in the literature of the explanatory variables that I will use, such as physical distances as a measure of migration costs. Because the underlying theory is original, the predictions resulting from that theory are also different from what has been examined in the past. If the predictions about the effects of the hypothesized market imperfections hold, they could suggest that "fundamental human rights" can be viewed in a market sense instead. Rather than the violation of "essential" rights, human rights, violations could be seen as products of an imperfectly operating international market. This new perspective could have profound policy implications, especially with regards to how international bodies should deal with states that violate the rights of its citizens (Francis 2010).

Data and Variables

I assemble variables using data from the Quality of Government (QoG) Institute, the Centre d'Etudes Prospectives et d'Informations Internationales (CEPII), the World Bank, and Ozden and Reinhardt (2005). The QoG Institute's dataset[1] is actually a compilation of various indices, so all of the data from the QoG is attributed to the original source. The resulting panel dataset spans the years 1980 to 2009 and contains a total of 5,520 observations. For some of the

[1] See http://www.qog.pol.gu.se/.

later regressions, I also examine the world by region. The regions are broken into Africa, the Americas, Asia, Europe, and the Pacific, as identified by the QoG variable for continent.

Table I presents summary statistics for all of the variables used in the regressions. The statistics are weighted by population and only show observations for which the dependent variable is not missing. The variables used do not all incorporate the same countries and/or years, which places additional limitations on sample size in some of the regressions. For the most part, only smaller and/or island countries are excluded.

The dependent variable used in all of the regressions is a measure of physical integrity rights from the Cingranelli-Richards (CIRI) Human Rights Project, which contains "standards-based quantitative information on government respect for 15 internationally recognized human rights." [2] Like Poe and Tate, I limit the idea of human rights to those which are considered the most basic. The physical integrity rights variable takes into account four factors: torture, extrajudicial killing, political imprisonment and disappearance. It ranges from 0, indicating that a nation's government does not respect these rights at all, to 8, indicating that a nation's government fully respects these rights. Though Francis' theory defines human rights as those rights that are shared by all social contracts in equilibrium, I define human rights as physical integrity rights in this study in order to empirically assess the real-world implications of the model.

As a note, there may be some bias associated with the physical integrity rights variable. The physical integrity rights scores given to different countries are assigned by individuals reading through U.S. State Department Country Reports on Human Rights Practices and Amnesty International's annual reports. These original sources tend to have a very Western

[2] See http://ciri.binghamton.edu/.

perspective, and there may be differences in what the West and other parts of the world value as rights. Additionally, sources such as Amnesty International tend to focus more attention on democracies, which may influence the information they report. However, despite these potential sources of bias, the U.S. State Department and Amnesty International are reliable sources overall, and the CIRI Human Rights dataset is widely used by researchers. For the purposes of this study, the CIRI physical integrity rights variable is one of the best available.

A. Migration Cost Variables

One of the main predictions of the theoretical model is that migration costs will have an effect on human rights. In order to capture the effects of migration costs, I incorporate several measures of geographical distance based off of CEPII's geodesic distances data[3]. There is evidence in migration literature that distance plays an important role in determining where refugees will flee; they typically aim for the closest countries (Moore and Shellman 2007). Though I am not examining refugees, it makes intuitive sense that the closer the next country, the easier it may be for citizens to exit their current country if they are dissatisfied with the social contract there.

CEPII's bilateral data file contains the distance between each country's main city or agglomeration and the main city or agglomeration for every other country in the world. It also measures the distance between each nation's capital cities. From these data, I construct the distance variable by choosing the observation that is the distance in thousands of kilometers between a country's main city and the main city of its closest neighbor (i.e. the minimum distance) for each nation. These main cities are defined by CEPII to be the economic centers of

[3] See http://www.cepii.fr/anglaisgraph/bdd/distances.htm.

their nations; for many countries, the main city is simply the capital, but for others it is not. As a second measure of distance, I construct the capital distance variable through the same method but using the minimum distance based on the capital cities instead. These two variables aim to capture how geographically isolated a state is, or how difficult it would be for a state's citizens to leave, with the implication being that greater distance equals more isolation and more difficulty.

Along with the distance and capital distance variables, I also construct two other distance variables, ethnic language distance and official language distance, which attempt to take into account a language barrier factor. The theory suggests that citizens would find it more difficult to migrate if there were no nations close to them that shared the same language. To take into account the compounded effect of language barriers on migration costs, the ethnic language distance variable is the minimum distance in thousands of kilometers between a country and the next closest country in which at least 9% of the population[4] speaks the same language. As another measure of this effect, the official language distance variable is the minimum distance in thousands of kilometers between a country and the next closest country that has the same official language. The bilateral data used for determining which countries share the same official language and which countries have at least 9% of their populations speaking the same language come from the CEPII geodesic distances dataset.

Aside from using distance variables to measure the effects of migration costs on physical integrity rights, I also employ a contiguous countries variable, from the CEPII dataset, that just sums the number of countries that share a physical barrier with each nation. This variable again seeks to measure geographic isolation. A separate common languages variable takes the main language of each nation, based off of CEPII's data on the main languages of each nation, and

[4] 9% is used as a cut-off point because that is how the language variable used to construct this distance variable is measured in the CEPII dataset.

sums the number of countries that also have the same language as their main language. This variable aims to measure the effect of the commonness of language on migration costs and human rights. The underlying theory suggests that citizens living in nations that speak more esoteric languages will have higher migration costs because there will be fewer countries in which they would be able to communicate, and therefore fewer potential countries they could migrate to.

A final measure of the effects of migration costs is the landlocked variable, taken from Ozden and Reinhardt (2005)[5]. Ranging from 0 to 1, this variable measures the proportion of a country's population that is located greater than 100 kilometers from the nearest coast or navigable river. Based on the theory, a higher landlocked proportion would indicate higher migration costs and therefore lower physical integrity rights.

B. Education and Information Variables

The remaining variables focus on other factors that could create market imperfections, and in an empirical setting, lead to lower physical integrity rights. The theoretical model assumes perfect information: every individual citizen in every state knows about the rights that would be available to them in other states and can therefore freely pick and choose which state's bundle of rights best matches their preferences. In reality, this is tempered by the fact that states can limit information through inadequate education or repression of freedom of speech. I therefore examine the effects of education and information availability on human rights through four variables: education, freedom of speech, freedom of the press, and political pressures on media content. Granted, freedom of speech and ideas related to that can be considered human rights

[5] See http://userwww.service.emory.edu/~erein/research/gsp2.pdf

themselves, but for the purposes of this study, they will be examined as independent variables that influence the level of physical integrity rights.

The education variable comes from the World Bank Development Indicators[6] and measures the total number of individuals enrolled in secondary school, regardless of age, divided by the total population of secondary-school-aged individuals. The freedom of speech variable comes from the CIRI Human Rights Project and measures how much the government censors the media; 0 indicates complete ownership, 1 indicates some ownership, and 2 indicates no ownership. Both the freedom of the press and political pressures on media variables come from the Freedom House[7] and are used as alternative measures of the general idea of information access. Freedom of the press is measured by rating a nation's laws and regulations, political controls, and economic influences/repressive actions, and ranges from 0 indicating the most freedom to 100 indicating the least freedom. Political pressures on media isolates the control of the government over media content, taking into account factors such as the ability of journalists to freely report on news and editorial independence of media institutions. It ranges from 0 representing least control to 40 representing the most control.

C. Controls

Informed by the existing human rights literature, I include a set of controls consisting of real GDP per capita, population, polity score, and economic growth. The real GDP/capita and population variables come from the United Nations Statistics Divisions[8]. Real GDP/capita is measured in hundreds of U.S. dollars based on constant 1990 prices, and population is measured

[6] See http://data.worldbank.org/data-catalog/world-development-indicators.
[7] See http://www.freedomhouse.org.
[8] See http://unstats.un.org/unsd/snaama/

in millions of people. Poe and Tate (1994) hypothesize that the larger a nation's population, the easier it becomes to repress rights because there are a greater number of available people to repress. Resources also become more burdened and scarce when population size is larger, which may put pressure on governments and cause them to use repression as a method of coping with the demand. The population variable was significant in their regression, so it is likely important to include as a control.

The polity score comes from the Polity IV Project[9] and measures how autocratic or democratic a nation's government is. It ranges from -10 indicating highly autocratic to +10 indicating highly democratic. Though human rights literature is not in complete agreement about the effect of democracy on human rights, there does appear to be a generally positive effect, so it is important to include as a control.

Lastly, I include economic growth as a control variable in some of the regressions. The growth variable comes from Easterly's data[10] and measures the annual percentage of GDP growth as reported in International Monetary Fund (IMF) Government Finance Statistics. The inclusion of economic growth as a control is another factor on top of real GDP/capita that helps take into account potential income effects. In an economic context, it is reasonable to assume that human rights are a normal good. Thus, as greater economic growth raises the income of the general population, that population would demand more rights. Higher incomes would also mean that citizens may be better able to exit a country with poor human rights.

Empirical Model

[9] See http://www.systemicpeace.org/polity/polity4.htm
[10] See http://go.worldbank.org/ZSQKYFU6J0

My empirical model aims to test Francis' market-based approach to human rights in a real-world setting. The general model, which is the basis for all other specifications, is as follows:

$$\textit{Physical Integrity Rights}_{it} = \beta_0 + \beta_1(\textit{Distance})_{it} + \beta_2(\textit{Landlocked})_{it} + \beta_3(\textit{Contiguous Countries})_{it} + \beta_4(\textit{Real GDP/Capita})_{it} + \beta_5(\textit{Population})_{it} + \beta_6(\textit{Freedom of Speech})_{it} + \beta_7(\textit{Polity})_{it} + \beta_8(\textit{Education})_{it} + \theta_t + \gamma_i + \mu_{it}$$

I run most specifications of this regression without country-fixed effects (γ_i), which control for effects that vary across country, because several of the main independent variables I test are time-invariant and are therefore excluded when country-fixed effects are included. However, I do include year-fixed effects (θ_t), which account for effects that vary over time but not between countries, in all of the regression specifications.

Most of the regressions are estimated using the ordinary least squares (OLS) method. I use a fixed-effects model in one of the regression tables to factor in country-fixed effects and observe whether the results for certain variables hold when across-country effects are removed. All of the regressions are weighted by population, so that a small country such as Luxembourg does not have the same effect as a large country such as China, which would skew the results by making them more biased towards smaller countries. Weighting by population takes the individual, rather than the state, to be the underlying unit of analysis, and allows the regressions to appropriately reflect the different contributions of large and small countries to the overall results. However, taking into account the fact that the OLS regressions may inflate standard errors while the fixed-effects model eliminates variables that do not vary over time, I also estimate a random effects model as an additional test. The random effects model is more efficient

than the OLS model, though the caveat is that I cannot weight the random effects regressions by population.

Following from the theory, I expect the coefficient on the distance variable (β_1) to be negative: as the distance to the closest main city in another country increases, physical integrity rights should decrease. Distance is a measure of migration costs; the further away the next closest city is, the greater the cost to travel there. Admittedly, this variable does not take into account whether or not citizens would desire to migrate to the next closest city in another nation (perhaps the closest nation has an even poorer human rights record). However, for the purposes of this study, it functions as one of many approximations of migration costs. I expect the other distance variables—capital distance, ethnic language distance, and official language distance—to produce the same effect.

I also expect the coefficient on landlocked (β_2) to move in the opposite direction of physical integrity rights. As a greater proportion of a country's population lives far from a navigable body of water, migration costs increase, and therefore physical integrity rights decrease, as citizens have fewer exit options despite potentially poor human rights. The effect of contiguous countries (β_3), however, should be positive. A large number of contiguous countries imply more potential countries for unsatisfied citizens to migrate to. The availability of options in this market indicates that a country surrounded by many other countries may be less able to suppress physical integrity rights, since its citizens would have various neighboring states to escape to.

With the variables that seek to capture the effects of information limitations, the expected result is that as information availability increases, physical integrity rights increase. I therefore expect education (β_8) to have a positive effect on physical integrity rights: as a greater proportion

of the population receives at least up to secondary education, nations will suppress rights less because an educated population would know that it could go to a nation that offers a better bundle of rights. Freedom of speech should also move in the same direction as physical integrity rights. As the variable moves toward its upper limit of 2, meaning no government control over media, physical integrity rights should increase. The implication is that less government control indicates that reporters and journalists can report on what they wish and serve as better watchdogs of government wrongs. This would cause governments to be less able to suppress rights.

Though not shown in this main model, some of the other regressions substitute freedom of the press or political pressures on media for the freedom of speech variable. The effect should be the same, though the variables will move in the opposite direction because of the way they are coded, with the upper limit indicating the least amount of freedom.

Results

Figures 1 through 7 present the overall trends in physical integrity rights from years 1981 to 2007, weighted by population. There appears to be a general downward trend in physical integrity rights in the world, with the value of those rights going from 4 to around 2.5 (Figure 1). As shown by Figure 2, those means stay approximately the same even when including only those countries for which there are greater than 20 years worth of observations for the dependent variable (i.e. when controlling for potential sample selection bias). An examination of the trend in physical integrity rights by continent (Figure 3-7) indicates that this trend holds throughout most of the continents, though the low weighted means seem to be largely driven by Asia (Figure 5), which starts at a score of 3 and decreases to almost 1 over time. These low scores are not

unexpected since the continent of Asia as coded by the QoG includes Eastern Asian countries (such as China) as well as Middle Eastern countries (such as Saudi Arabia and Iraq). Similarly, the relatively high physical integrity rights scores of the Pacific, ranging from 6.5 to 8 (Figure 7), are expected since the Pacific only includes Australia, New Zealand, and several other small island nations.

Appendix Table A lists the countries, by region, that are used in most of the regressions. Though the exact countries vary slightly with each regression, due to different countries missing observations for different variables, Appendix Table A shows all of the main nations that are included.

A. Main Regression Model

Given the general trends in the data, Table 2 presents the results of the first set of regressions, in which the distance variable is used as the main measure of migration costs. Most of the variables are significant at the 1% level, and all of the migration cost and information variables are significant in the predicted direction. Column 1 shows the main empirical model. Distance is significant at the 1% level and has a negative coefficient, indicating that a 1,000 kilometer increase in distance to the nearest main city in another country decreases physical integrity rights by -0.7 points on the CIRI scale. The two other measures of migration costs, the landlocked variable and contiguous countries variable, are also significant at the 1% level in the predicted direction. A ten percent increase in the proportion of a country's population that is landlocked causes a -0.010 decrease in the CIRI scale of physical integrity rights. Similarly, though the effect is much smaller, as a country has more nations surrounding it, its physical integrity rights score increases. These results lend empirical support to the economic theory of

human rights: increased migration costs do appear to have a negative effect on rights offered by the state.

In column 1, the variables that measure information availability, education and freedom of speech, are also significant at the 1% level and positive, as predicted by the theory. As the proportion of a country's population that receives secondary level education increases, physical integrity rights also increase. As government censorship of the media moves towards 2 (no censorship), the physical integrity rights score goes up. These results support the idea that as citizens become more aware of the world and the potential other bundles of rights that exist, the market moves closer to the idea of perfect information, and governments are less able to suppress rights.

Column 2 estimates the same regression as column 1 but limits the countries in the regression to those which have greater than 20 observations for the physical integrity rights variable (i.e. countries for which physical integrity rights were measured for at least 20 separate years). This is done mainly as a sensitivity test. I want to ensure that the empirical results are actually a function of the independent variables over time and not driven by sample selection bias. For example, if many countries only have observations for the physical integrity rights variable for years 2000 to 2007, and those countries just happen to have extremely poor human rights, they would skew my regression results. Though the sample size decreases by a few hundred in column 2, the results are still the same, with the magnitudes of the coefficients changing only slightly. The education variable also becomes significant only at the 10% level, suggesting that education may not have as large of an effect as previously thought, though that could also be a function of the decreased number of observations. Overall, column 2 indicates that the results of the main regression are relatively robust.

Column 3 estimates the empirical model including economic growth as a control. Economic growth is not included in the other estimations because it only contains observations from 1980 to 1999 and therefore severely limits the sample size when included with the rest of the variables. However, because of the potential effects of economic growth on individuals' disposable income and hence their ability to migrate, I find it an important control to include. I remove the education variable from this regression in order to preserve a reasonable sample size. The results are still robust throughout this specification. The migration cost and information variables are all significant at the 1% level in the direction predicted by the theory. Economic growth is also significant at the 1% level: as a nation's GDP grows by 1% per year, its physical integrity rights score increases by 0.033. As mentioned previously, this could be due to an income effect: higher growth could mean higher incomes, which cause individuals to demand more of everything, including rights. However, the decrease in R-squared in column 3 suggests that perhaps economic growth is not as good of an explanatory variable of physical integrity rights as education is.

Columns 4 and 5 substitute freedom of the press and political pressures on media, respectively, for the freedom of speech variable in order to test the robustness of the effect of information availability on human rights. Both variables are significant at the 1% level and negative: as freedom of the press becomes more limited or political pressures on media content increases, physical integrity rights decrease. Though there may be some endogenous relationships between physical integrity rights and freedom of the press/freedom of speech, the fact that all three measures of information availability are significant in the predicted direction lends empirical support to the theory. Also, the other non-control independent variables still

show the same directional coefficients with no significant variations in magnitude, meaning that the model is relatively strong.

Column 6 estimates the same regression as column 1 with an added common languages variable. While the main independent variables are still significant at the 1% level in the predicted direction, the common languages variable is insignificant, suggesting that how common a citizen's language is in the world does not have an effect on physical integrity rights. While this may seem to discredit the theory, which suggests that citizens living in countries that speak more common languages would find it easier to migrate since they would have more options of place to go, it does not discount the significance of the other migration costs variables, which may hold more credence. For example, if an individual lives in a nation that speaks a very common language but that country is physically distant from other nations, or that individual has little funding with which to travel, speaking a common language would barely have an effect on the individual's migratory capabilities and therefore physical integrity rights.

Throughout columns 1 through 6, the controls of real GDP/capita and population have small but consistent effects on physical integrity rights. As real GDP/capita increases, physical integrity rights also increase. Similar to the economic growth variable, this could be due to an income effect. Increasing population size, on the other hand, has a consistently negative effect on physical integrity rights. This is in line with Poe and Tate's results and suggests that it is indeed easier to repress human rights in countries with large populations. Aside from what Poe and Tate suggested, some other reasons for the negative effect of population may be that larger countries may have more disorganized populations that cannot demand rights conjunctively. Also, developing countries, which tend to have poorer rights, may have large but uneducated populations that would be easier to repress.

Interestingly, the polity variable, which measures how democratic a nation is, is mostly insignificant, and when it is significant, in columns 4 and 5, it is negatively correlated with physical integrity rights. In other words, the results appear to suggest that as nations become more democratic, physical integrity rights decrease. While the raw correlation between polity score and physical integrity rights is undeniably positive in my data, it is important to keep in mind that the polity effects observed in columns 4 and 5 hold all other factors constant and are therefore conditional effects. The joint effects of the other variables likely contribute to the inconsistent results for polity. Another explanation is that the polity variable may reflect the potential biases of the physical integrity rights variable, such as the idea that the physical integrity rights scale embodies a Western perspective that may not be shared by other regions of the world.

B. Other Measures of Distance

Though the initial results of the main empirical model are promising, I test them over various regression specifications in order to ensure that they hold. Table 3 presents the regression results substituting three other measures of distance for the main distance variable: capital distance, ethnic language distance, and official language distance. Column 1 employs the main regression model, using capital distance instead of distance as a measure of migration costs. Column 2 uses the same equation as column 1 but only retains countries for which there are greater than 20 year-observations for the dependent variable, as a sensitivity measure. Column 3 includes economic growth as a control and removes the education variable. The same pattern is repeated in columns 4, 5, and 6, which use ethnic language distance as the main distance variable; and in columns 7, 8, and 9, which use official language distance as the main distance variable.

The purpose of these regressions revolves around using different variables to capture the true concept that I want to test: the effect of migration costs and physical barriers on physical integrity rights.

Through all nine regression specifications, the distance variables are mostly significant at the 1% level in the predicted direction. These results show that variations around the main regression model are relatively robust and also lend further empirical support to the idea that higher migration costs, as measured by distance to the nearest capital city in another country or to the nearest city that shares a common language, contribute to lower human rights, as predicted by the theoretical model. Also, though the common language variable was not significant in Table 1, the significance of the ethnic language distance variable in columns 4 and 5 and the official language distance variable in columns 7 and 8 suggest that sharing a common language may have some effect on physical integrity rights. As distance to the closest neighboring city that either shares the same language as 9% of the population or shares the same official language increases, physical integrity rights decrease. These results support the predictions from the theory that language barriers may induce higher migration costs and therefore lower rights.

The other migration cost variables, landlocked and contiguous countries, are both significant at the 1% level in the predicted direction for all nine regressions. The robustness of these two variables lends greater credence to the idea that migration costs are important contributors to a nation's level of physical integrity rights. The education variable mostly presents the same results—having a positive effect on physical integrity rights—except in column 8. Freedom of speech is significant and positive in all specifications, as before, and the control variables also show similar results. Polity's effect is inconsistent, population's effect is negative, and real GDP/capita's effect is positive. Columns 3, 6, and 9 include economic growth

as a control, and economic growth continues to be positive and significant, though it still appears to have less explanatory power as a variable than education does, as shown by the decrease in R-squared. Overall, the similarity of the results between Table 1 and Table 2 indicate that the empirical findings thus far are relatively strong and lend support to the theory.

C. Country-Fixed Effects

Because the panel dataset encompasses all countries of the world over a period of time, I run a series of regressions including country-fixed effects in order to control for across-country effects. Unfortunately, the inclusion of country effects eliminates the migration cost variables because they do not vary over time, but it does allow me to examine the education, information, and control variables, focusing on within-country effects. Table 4 presents the regression results for the country-fixed effects model.

Column 1 presents the main regression model, including the variables real GDP/capita, population, freedom of speech, polity, and education. Column 2 removes the education variable and adds in economic growth. Column 3 includes both education and economic growth, though the inclusion of both limits the number of observations significantly. Column 4 excludes both education and growth, in order to increase sample size. Columns 5 and 6 respectively substitute freedom of the press and political pressure on media for the freedom of speech variable.

Given these various specifications around the main model, the results are less conclusive than those of the previous two regression tables. The freedom of speech, freedom of the press, and political pressure on media variables all aim to capture the effects of information availability on physical integrity rights, and they are mostly significant in the predicted direction, with the exception of columns 2 and 3, in which they are insignificant. This suggests that for the most

part, even excluding variation across countries, greater information availability does indicate better physical integrity rights.

The education variable, on the other hand, is insignificant in all of the specifications in which it is included. However, this does not mean that the significance of the variable is therefore null and void; it may be explained by a variety of reasons. Country-fixed effects limit the regression to examining effects within a country, and education levels may be relatively stable over time within countries. Lack of variation within country would therefore lead to an insignificant coefficient. In other words, the difference in education levels across different countries, rather than within, is likely the driving factor of the education effect. Also, the education variable itself may be imperfect in some ways. Looking at its raw value for a few of the sample countries, I observe that the ratios jump around a lot, which suggests that there may be some measurement errors in the original variable. That would bias the coefficients toward being insignificant as well.

While the effects of polity score are inconclusive in the first two regression tables, polity is significant at the 1% level and positive through all six regression estimations in the country-fixed effects model, indicating that moving towards democracy increases physical integrity rights. This result is supported by the bulk of literature examining democracy's effects on human rights, and its robustness while controlling for across-country effects suggests that the variation across countries among the other variables in the non-fixed effect model likely causes the inconsistent results in tables 2 and 3. The population variable remains mostly significant and negative, and its one instance of being significant and positive in column 6 most likely has to do with some uncommon within-country variation.

The significance and sign of the real GDP/capita variable fluctuates significantly in Table 4, though the across-country variation was irrefutably positive. The inconsistent results for this variable in Table 4 likely result from the fact that within specific countries, real GDP/capita and physical integrity rights do not always move in the same direction. The significant but negative coefficients for real GDP/capita in columns 5 and 6 most likely result due to the fact that some countries probably have increasing GDPs but low levels of rights (e.g. China). Once again, the overall inconsistency for this variable in the country-fixed effects model does not undermine previous interpretations of it but rather informs us that the GDP effects are driven by across-country variation.

The overall results of the country-fixed effects model do lend some support to the real-world implications of the theoretical model, but more importantly suggest that variation of the explanatory variables across different countries of the world drive the effects on physical integrity rights more so than within-country effects do.

D. Regressions by Region

Having examined the results of the empirical model looking at the world as a whole, I also estimate the empirical model by region. Given general knowledge about the state of human rights in different continents (e.g. Africa tends to have poorer rights; Europe has higher rights), it is interesting to observe how well the model holds up under more specific contexts. Table 5 presents estimates of the main empirical model by region: Africa, the Americas, Asia, Europe, and the Pacific. These regions are chosen based on the continent variable available in the QoG dataset.

The regression estimates for Africa (Column 1) suggest that the empirical model may not be the best predictor of physical integrity rights for the region, due to the relatively low R-squared result (approximately 46.5% of the variation is explained). However, some of the main independent variables, including distance, landlocked, and freedom of speech, are indeed significant at the 1% level in the direction predicted by the theory. The contiguous countries variable is significant at the 1% level but in the opposite direction; in other words, as the number of contiguous countries increases, physical integrity rights decrease. While this may seem to contradict the theory's predictions, it is important to keep in mind the idea that the contiguous countries variable is attempting to capture. The underlying assumption is that the greater number of countries that are nearby, the more choices a citizen has if he wants to leave, which would make it more difficult for a nation to repress rights. However, in the context of Africa, especially for countries with particularly poor rights such as the Democratic Republic of Congo, a state's neighboring countries may have poor rights themselves, leaving citizens with nowhere close to migrate to. A different view of the situation is that poor human rights may have negative spillover effects. In other words, if most of a state's neighboring countries offer low levels of human rights, then it may actually cause or allow a state to offer lower rights itself, in which case the theory's predictions would not hold.

Another interesting case is the Pacific region (Column 5), whose regression results appear to be rather inconsistent in comparison to those of the other continents. Taking into account the extremely small sample size of 58, it is important to note that the Pacific region consists solely of Australia, New Zealand, and three other small island nations in this regression. Since all of the regressions are weighted by population, Australia is essentially the driving factor behind most of the results. As observed in the country-fixed effects model, the effects of the

explanatory variables appear to be attributed more to across-country variation rather than within-country variation, so it is unsurprising that the Pacific's regression results do not conform. A better method of testing the theory empirically for the Pacific region may have been to analyze Australia's internal market for rights, essentially taking the theory of the world market for rights and applying it to the different regions within Australia. The large coefficient for the landlocked variable, which reads that a 10% increase in the proportion of a population that is landlocked contributes to a 9.054 point decrease in physical integrity rights, can be explained by Papua New Guinea. While the overall physical integrity rights score of the Pacific region is extremely high, Papua New Guinea has several years in which its score was at a low 2 or 3. In a regression with such a small sample size, Papua New Guinea's low score is therefore driving the landlocked result. Overall, the relatively inconsistent results for the Pacific region can be logically explained.

The regression results for the Americas (Column 2), Asia (Column 3), and Europe (Column 4) largely conform to the results of the main regression model for the world. Increasing migration costs tend to lead to lower physical integrity rights, and increasing education and freedom of speech tends to lead toward greater physical integrity rights. While the results for each continent do not correlate exactly with the main regression results, they certainly do not contradict them, and in many cases lend support to the theory. What becomes apparent in looking at the regression results by region is that each region most likely has unique factors, in addition to the factors predicted by the theory, that contribute to the level of human rights in the region. In order to effectively examine the determinants of human rights when the focus is narrowed may therefore require models specific to each region.

E. Random Effects Model

As a check on some of the imperfections of the main OLS regressions and the fixed-effects model, I also estimate a random effects model (Appendix Table B). As mentioned previously, the major limitation of this model is that the regressions are no longer weighted by population, meaning that a small island country in the Pacific holds the same weight as a nation as populous as China. Column 1 presents the main regression model, and column 2 estimates the same model, keeping only nations for which there are greater than 20 observations for the dependent variable. Columns 3, 4, and 5 substitute capital distance, ethnic language distance, and official language distance for the main distance variable as measures of robustness; and column 6 removes the education variable while factoring in economic growth.

The distance variables are still mostly significant in the predicted direction in all of the regression specifications, though they are less significant than in the OLS regressions. The landlocked variable is inconsistently significant among the regressions, while the contiguous countries variable is not significant. Though the results for these three variables provide a less clear idea of the effect of migration costs on physical integrity rights, they do partially align with the previous results and the predictions made by the theory. Education is mostly insignificant in the random effects model, but once again, this could be due to the omission of population weights and may indicate that the education effects are driven more by larger nations. Freedom of speech is significant at the 1% level and positively correlated with physical integrity rights throughout all of the specifications, and the control variables are all significant at the 1% level in the expected directions. Overall, the results of the random effects model are largely in line with the previous results from the OLS regressions and tend to support the underlying theory, or at least do not contradict it.

Conclusion

In this paper, I empirically test an economic, market-based theory of human rights. The theory posits the existence of an international market for bundles of rights, in which citizens demand bundles of rights and state supply them, and predicts that violations of human rights occur due to market imperfections, such as migration costs and imperfect information. Using panel data from 1980 to 2009, I test the predictions made about these market imperfections, namely that increased migration costs and imperfect information will lead to lower levels of human rights. The results, which differ slightly based on the empirical model used, largely support the predictions made by the theory. Though some of the effects by region do not align as well with the theory's predictions, the overall trends in the world suggest that high migration costs and incomplete access to information contribute to decreased human rights.

The empirical model I use does have certain caveats, and further research may be able to improve its design. As mentioned previously, there are certain endogeneity issues in examining the effect of education and freedom of speech on physical integrity rights, and future models may be able to better control for those issues. The education variable used, the ratio of the population enrolled in secondary school over the population of secondary-school aged individuals, is not ideal and may have some measurement error. A variable that measures the overall proportion of a state's population that is enrolled in school may be a better indicator of education level. While this variable does exist in one of the indices of data, it does not contain observations for a sufficient number of years to be a viable factor in my regression. Despite these shortcomings, the empirical model as a whole, and especially the migration cost variables, still provides credible support for the predictions made by the theory.

There are a few variables that I would have liked to include in the regression estimations but were simply not possible due to limited data. The most important one is some measure of nationalism. The theory assumes that under perfect information, when there are no limitations on moving to another state, citizens will choose a state with the bundle of rights that best suits their preferences. In reality, the existence of nationalism would likely temper this effect. Citizens who are extremely nationalistic may choose to either ignore human rights violations in their country, or may be focused on changing their nation for the better from the inside. Francis posits that states may also choose to purposefully foster nationalism in order to increase their power in the market for social contracts, by making citizens less willing to leave. It would be interesting to observe the effect of nationalism on physical integrity rights in potential future models. Future models might also consider controlling for factors such as ethnic fractionalization, which is a variable that may affect both the behavior of citizens in a nation as well as a state's physical integrity rights level.

Because the empirical evidence in this paper is in accordance with Francis' theoretical model, there are several implications. Francis noted that the market-based theory of human rights "[provides] justification for bounds on state sovereignty," or in other words, justifies greater authority and power for international institutions and/or treaties (Francis 2010, 11). In describing human rights in terms of a market, it follows that controlling certain market factors in order to allow the market to operate efficiently may provide greater social benefit for everyone. The empirical evidence suggests that factors such a migration and information costs do indeed have an effect on physical integrity rights, so if international bodies have goals of fostering better human rights in the world as a whole, they could consider taking action on some of these factors that distort the market for social contracts.

Though many measures may require stronger international authorities than those that exist in the world today, there may still be methods that current international organizations can pursue in order to help regulate the market for social contracts. For example, international institutions may help increase access to education and information in countries that are lacking. This may be done by giving more support to or increasing funding for organizations such as the United Nations Educational, Scientific and Cultural Organization (UNESCO), which already has educational programs set up in various nations. In order to foster an open education as well as give struggling nations a hand, UNESCO could train and send teachers to nations that do not offer adequate educational opportunities.

International bodies may also try to decrease migration costs. Though physical distances between nations cannot be changed, factors such as immigration laws, visa processes, and others may be mitigated. For example, organizations such as the World Trade Organization could potentially link trade requirements to the opening of borders. Overall, further empirical study of the theory explored and tested in this paper could lead to more ideas about potential practical applications. The economic theory of human rights, by providing a new and different perspective, may shed light on how better to advance human rights in the contemporary world.

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Figure 1. Weighted Means of Physical Integrity Rights (1981-2007) – World

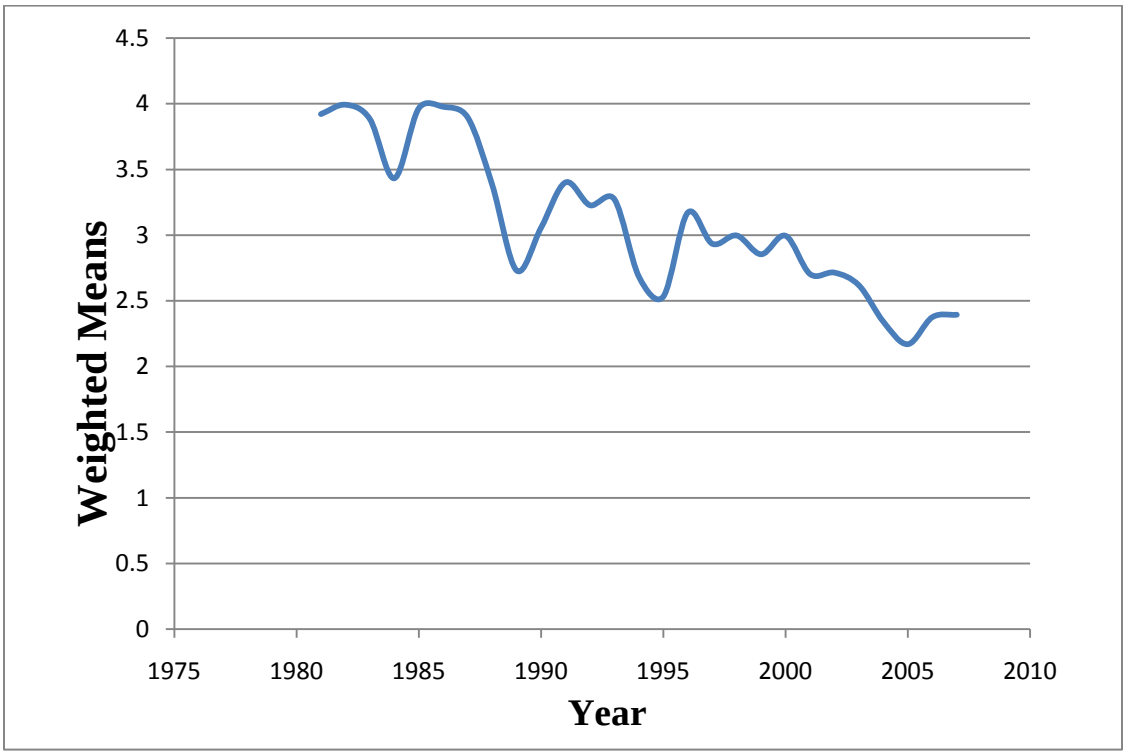

Figure 2. Weighted Means of Physical Integrity Rights (1981-2007) – World (Limited)
* Only countries that have greater than 20 observations for physical integrity rights are included

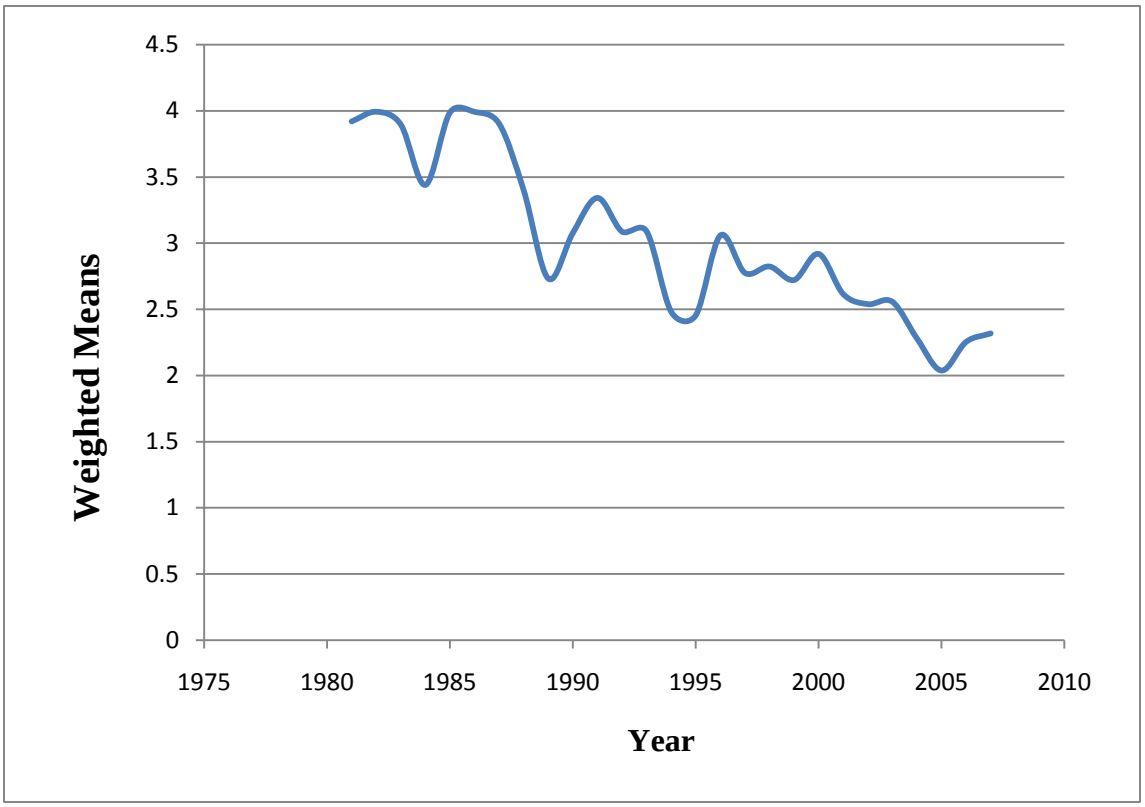

Figure 3. Weighted Means of Physical Integrity Rights (1981-2007) – Africa

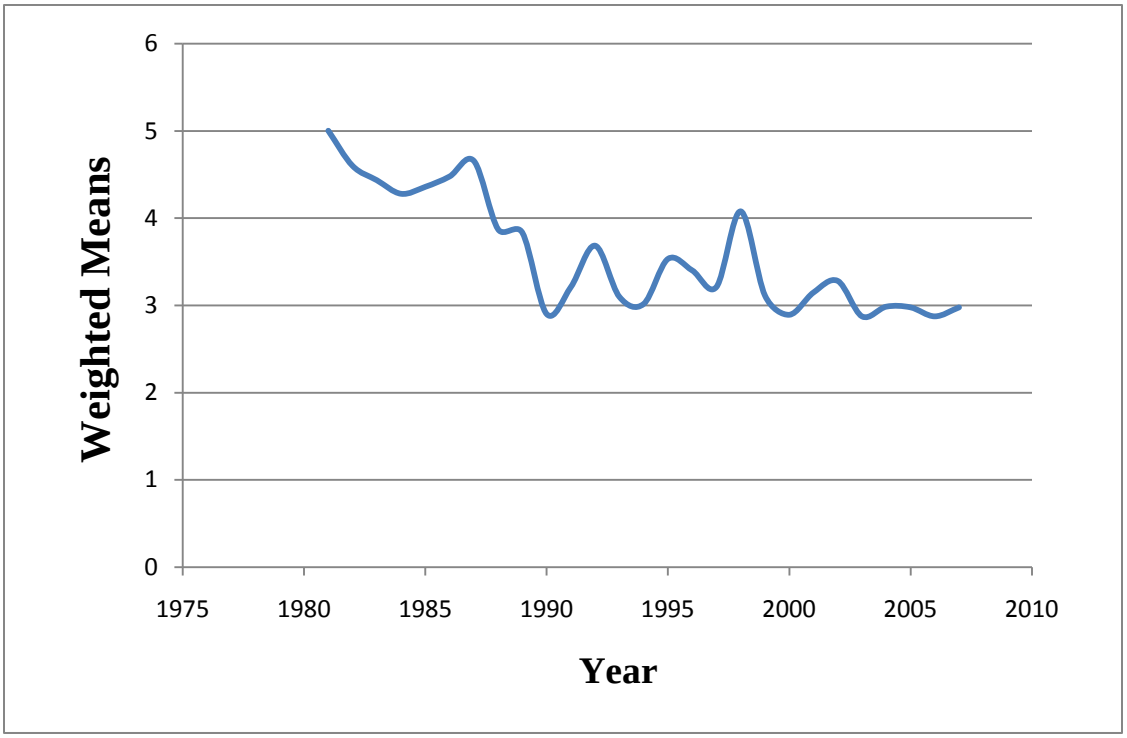

Figure 4. Weighted Means of Physical Integrity Rights (1981-2007) – Americas

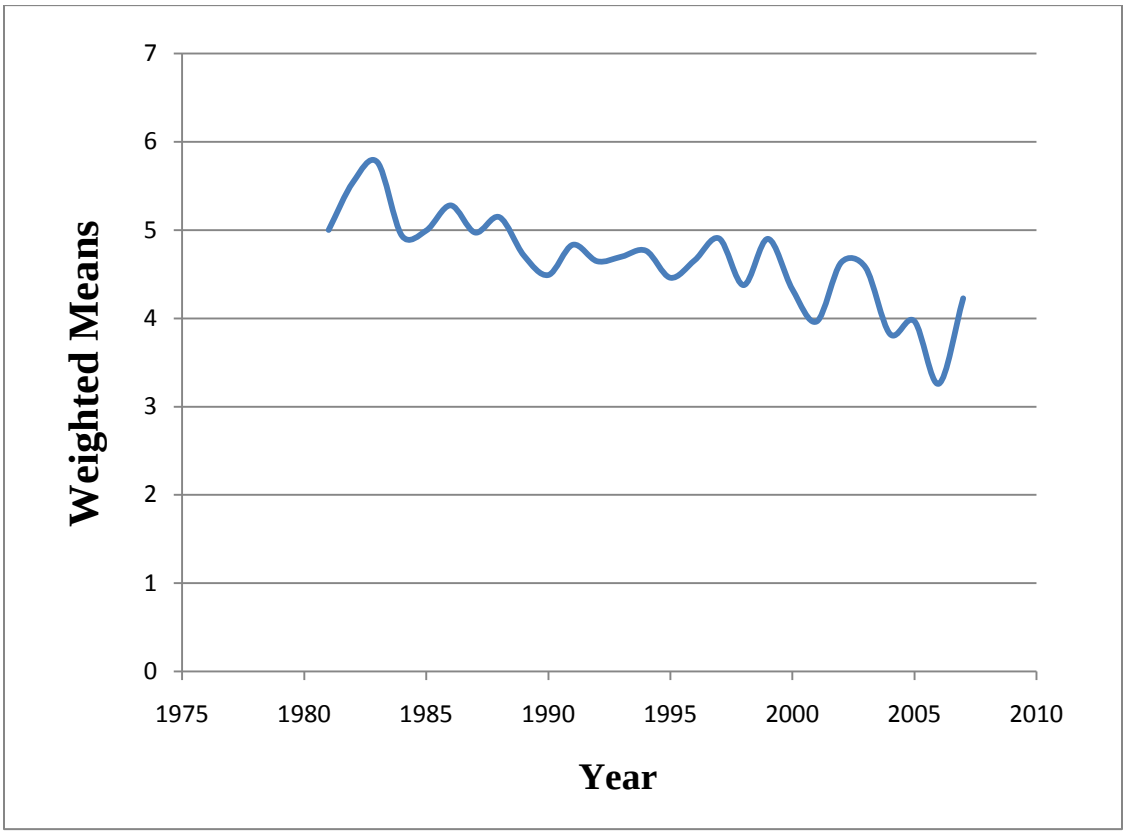

Figure 5. Weighted Means of Physical Integrity Rights (1981-2007) – Asia

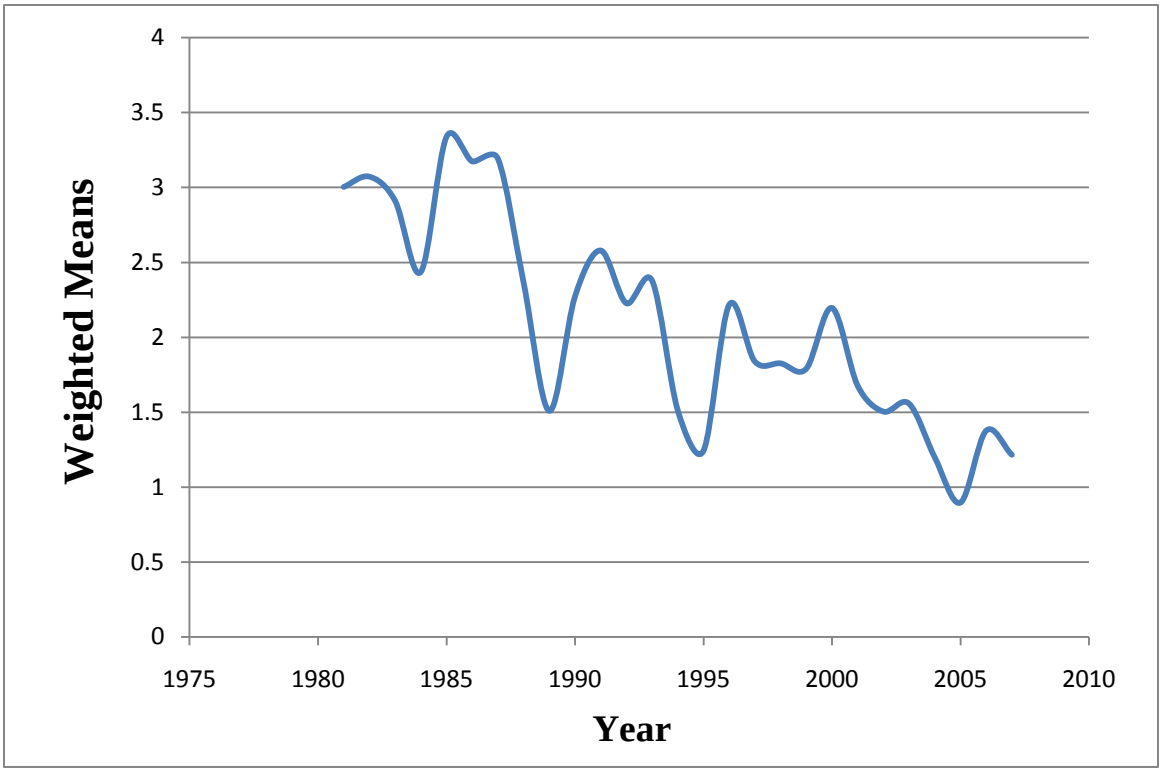

Figure 6. Weighted Means of Physical Integrity Rights (1981-2007) – Europe

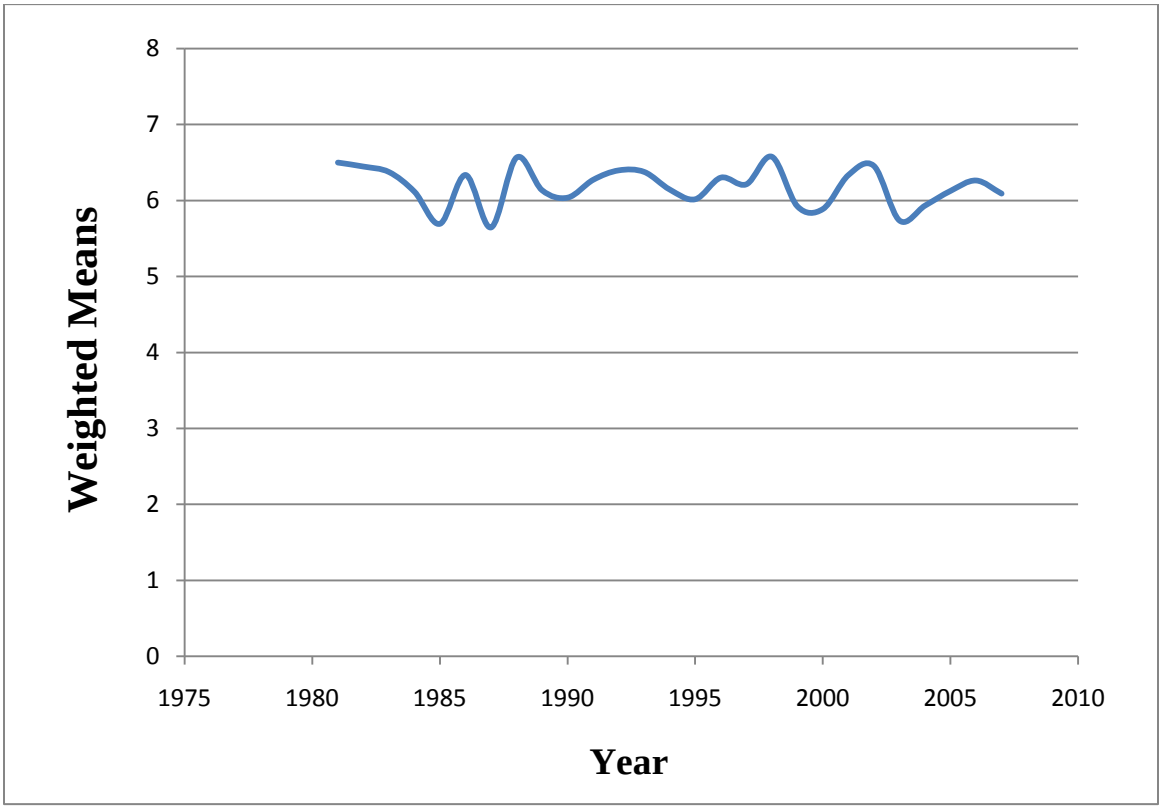

Figure 7. Weighted Means of Physical Integrity Rights (1981-2007) – Pacific

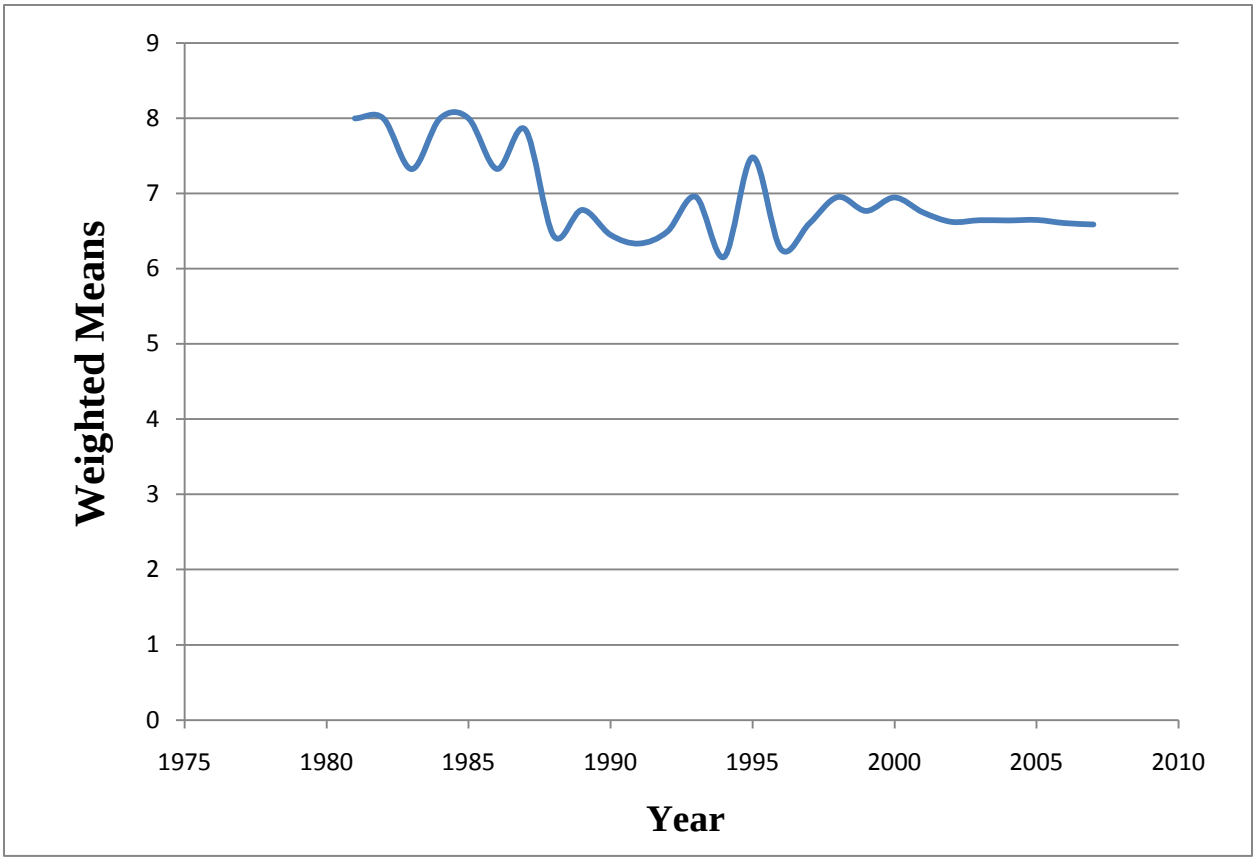

Table 1
Summary Statistics

Variable	Years	Available Countries	Sample Size	Mean	Standard Deviation	Minimum	Maximum
Physical Integrity Rights	1981 - 2008	184	3998	3.020257	2.422372	0	8
Distance (1000 km)	1980 - 2009	184	3998	0.6217793	0.2742234	0.0104789	1.799705
Capital Distance (1000 km)	1980 - 2009	184	3998	0.650773	0.2902177	0.0104789	1.901822
Ethnic Language Distance (1000 km)	1980 - 2009	153	3385	1.048153	0.8996526	0.0104789	4.964447
Official Language Distance (1000 km)	1980 - 2009	151	3338	1.119972	0.9556302	0.0104789	4.964447
Contiguous Countries	1980 - 2009	184	3998	7.171147	5.281269	0	16
Landlocked (per 10%)	1980 - 2009	184	3998	0.4897839	0.2829546	0	1
Real GDP/Capita (per $100)	1980 - 2007	184	3998	4.405642	8.086433	0.052796	59.49186
Population (millions)	1980 - 2007	184	3998	478.9758	497.6956	0.010245	1305.714
Freedom of Speech	1981 - 2008	184	3997	0.8855505	0.7194367	0	2
Freedom of the Press	1993 - 2008	184	2450	53.65838	23.80666	0	100
Political Pressures on Media	1993 - 2007	184	2451	19.6663	9.163911	0	40
Polity	1980 - 2008	158	3724	1.83462	7.38915	-10	10
Education	1980 - 2009	180	2280	63.01671	26.14244	3.284256	161.7809
Economic Growth	1980 - 1999	178	2478	4.979683	5.078578	-50.6	41.652
Languages	1980 - 2009	184	3998	25.81482	30.34739	0	69

Table 2
Main Regression Model

	Dependent Variable: Physical Integrity Rights					
	(1)	(2)	(3)	(4)	(5)	(6)
Distance	-0.700***	-0.477***	-0.887***	-0.540***	-0.531***	-0.719***
	(0.127)	(0.140)	(0.120)	(0.130)	(0.132)	(0.128)
Landlocked	-0.010***	-0.110***	-0.086***	-0.113***	-0.109***	-0.092***
	(0.135)	(0.158)	(0.125)	(0.139)	(0.141)	(0.146)
Contiguous Countries	0.174***	0.228***	0.139***	0.186***	0.151***	0.164***
	(0.012)	(0.014)	(0.011)	(0.012)	(0.012)	(0.014)
Real GDP/Capita	0.123***	0.139***	0.189***	0.076***	0.086***	0.123***
	(0.005)	(0.006)	(0.005)	(0.006)	(0.006)	(0.005)
Population	-0.002***	-0.003***	-0.002***	-0.003***	-0.003***	-0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Freedom of Speech	0.484***	0.385***	0.224***			0.504***
	(0.082)	(0.091)	(0.071)			(0.083)
Polity	-0.012	0.014	-0.003	-0.119***	-0.070***	-0.010
	(0.007)	(0.009)	(0.007)	(0.010)	(0.009)	(0.008)
Education	0.011***	0.004*		0.011***	0.015***	0.011***
	(0.002)	(0.002)		(0.002)	(0.002)	(0.002)
Economic Growth			0.033***			
			(0.007)			
Freedom of Press				-0.058***		
				(0.004)		
Political Pressures on Media					-0.102***	
					(0.008)	
Common Languages						-0.002
						(0.002)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-1.496	5.473	4.002***	6.270***	3.813***	-1.394
	(4.591)	(3.996)	(0.180)	(0.313)	(0.226)	(4.591)
Observations	2,120	1,762	2,395	1,693	1,694	2,120
R-squared	0.715	0.722	0.666	0.763	0.754	0.716

Standard errors in parentheses
Individual coefficients are statistically significant at the *10%, **5% or ***1% significance level

Table 3
Other Measures of Distance

	Dependent Variable: Physical Integrity Rights								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Capital Distance	-0.633***	-0.527***	-0.490***						
	(0.120)	(0.130)	(0.112)						
Ethnic Language Distance				-0.096*	-0.174***	-0.025			
				(0.052)	(0.057)	(0.042)			
Official Language Distance							-0.192***	-0.154***	-0.060
							(0.054)	(0.057)	(0.042)
Landlocked	-0.097***	-0.107***	-0.083***	-0.085***	-0.090***	-0.068***	-0.163***	-0.173***	-0.102***
	(0.136)	(0.158)	(0.126)	(0.144)	(0.162)	(0.138)	(0.170)	(0.187)	(0.150)
Contiguous Countries	0.175***	0.229***	0.136***	0.174***	0.242***	0.114***	0.176***	0.216***	0.096***
	(0.012)	(0.014)	(0.011)	(0.014)	(0.017)	(0.013)	(0.014)	(0.017)	(0.014)
Real GDP/Capita	0.125***	0.140***	0.191***	0.134***	0.136***	0.201***	0.122***	0.130***	0.193***
	(0.005)	(0.006)	(0.005)	(0.006)	(0.007)	(0.006)	(0.006)	(0.007)	(0.006)
Population	-0.002***	-0.003***	-0.003***	-0.002***	-0.003***	-0.002***	-0.002***	-0.003***	-0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Freedom of Speech	0.497***	0.407***	0.210***	0.415***	0.408***	0.136*	0.604***	0.531***	0.368***
	(0.082)	(0.091)	(0.072)	(0.091)	(0.097)	(0.075)	(0.089)	(0.095)	(0.074)
Polity	-0.013*	0.013	-0.005	-0.015*	0.012	-0.013*	-0.036***	-0.012	-0.041***
	(0.007)	(0.009)	(0.007)	(0.008)	(0.009)	(0.007)	(0.008)	(0.009)	(0.007)
Education	0.010***	0.004*		0.007***	0.004*		0.004*	-0.000	
	(0.002)	(0.002)		(0.002)	(0.002)		(0.002)	(0.002)	
Economic Growth			0.033***			0.039***			0.039***
			(0.007)			(0.008)			(0.008)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-1.538	5.435	3.825***	5.115	5.199	3.403***	7.776	8.047	3.457***
	(4.594)	(3.991)	(0.179)	(3.971)	(4.008)	(0.197)	(12.461)	(12.470)	(0.206)
Observations	2,120	1,762	2,395	1,767	1,572	2,070	1,695	1,554	2,030
R-squared	0.715	0.723	0.661	0.705	0.706	0.652	0.748	0.745	0.693

Standard errors in parentheses

Individual coefficients are statistically significant at the *10%, **5% or ***1% significance level

Table 4
Country-Fixed Effects

	Dependent Variable: Physical Integrity Rights					
	(1)	(2)	(3)	(4)	(5)	(6)
Real GDP/Capita	-0.030	0.064**	0.084	-0.019	-0.112***	-0.122***
	(0.026)	(0.028)	(0.054)	(0.016)	(0.036)	(0.037)
Population	-0.002***	-0.005***	-0.010***	-0.003***	0.001	0.002**
	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)
Freedom of Speech	0.135*	-0.065	-0.008	0.091*		
	(0.074)	(0.064)	(0.122)	(0.049)		
Polity	0.084***	0.057***	0.066***	0.051***	0.035***	0.044***
	(0.010)	(0.010)	(0.021)	(0.007)	(0.013)	(0.013)
Education	0.004		0.005		0.003	0.008
	(0.004)		(0.006)		(0.005)	(0.005)
Economic Growth		0.031***	0.017			
		(0.006)	(0.011)			
Freedom of the Press					-0.022***	
					(0.005)	
Political Pressures on Media						-0.029***
						(0.008)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Constant	4.842	4.690***	12.168***	4.868***	3.940***	2.601***
	(2.962)	(0.454)	(2.963)	(0.209)	(0.740)	(0.624)
Observations	2,120	2,395	1,068	3,724	1,693	1,694
R-squared	0.860	0.813	0.876	0.810	0.886	0.885

Standard errors in parentheses
Individual coefficients are statistically significant at the *10%, **5% or ***1% significance level

Table 5
Regressions by Region

	Dependent Variable: Physical Integrity Rights				
	(1) Africa	(2) Americas	(3) Asia	(4) Europe	(5) Pacific
Distance	-0.753**	-0.283	-0.862**	-2.238***	1.682
	(0.304)	(0.339)	(0.366)	(0.507)	(2.307)
Landlocked	-0.097***	-0.373***	-0.066***	-0.316***	-9.054*
	(0.283)	(0.489)	(0.229)	(0.351)	(45.420)
Contiguous Countries	-0.094***	0.009	0.136***	0.131***	21.483
	(0.035)	(0.048)	(0.026)	(0.026)	(12.972)
Real GDP/Capita	-0.049	0.051**	0.200***	0.026***	-0.384
	(0.111)	(0.021)	(0.015)	(0.007)	(0.326)
Population	-0.023***	-0.004***	-0.002***	-0.023***	1.103*
	(0.002)	(0.002)	(0.000)	(0.003)	(0.596)
Freedom of Speech	0.947***	0.325*	0.197	0.279**	-0.071
	(0.125)	(0.187)	(0.192)	(0.114)	(0.509)
Polity 2	0.082***	0.189***	-0.021	0.159***	0.207*
	(0.014)	(0.030)	(0.014)	(0.022)	(0.122)
Education	-0.001	0.041***	0.011**	0.028***	0.012
	(0.005)	(0.006)	(0.005)	(0.004)	(0.029)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Constant	3.459	-2.845	4.668	3.367***	3.939
	(3.015)	(3.350)	(6.237)	(0.584)	(3.571)
Observations	599	365	542	556	58
R-squared	0.465	0.683	0.696	0.666	0.882

Standard errors in parentheses
Individual coefficients are statistically significant at the *10%, **5% or ***1% significance level

Appendix Table A
Countries by Region

Africa	Americas	Asia	Europe	Pacific
Algeria	Argentina	Afghanistan	Albania	Australia
Angola	Bolivia	Armenia	Austria	Fiji
Benin	Brazil	Azerbaijan	Belarus	New Zealand
Botswana	Canada	Bahrain	Belgium and Luxembourg	Papua New Guinea
Burkina Faso	Chile	Bangladesh	Bulgaria	Solomon Islands
Burundi	Colombia	Bhutan	Croatia	
Cameroon	Costa Rica	Burma	Cyprus	
Central African Republic	Cuba	Cambodia	Czech Republic	
Chad	Dominican Republic	China	Denmark	
Comoros	Ecuador	Georgia	Estonia	
Congo	El Salvador	India	Finland	
Dem. Repub. of Congo	Guatemala	Indonesia	France	
Côte d'Ivoire	Guyana	Iran	Germany	
Djibouti	Haiti	Iraq	Greece	
Egypt	Honduras	Israel	Hungary	
Equatorial Guinea	Jamaica	Japan	Ireland	
Eritrea	Mexico	Jordan	Italy	
Ethiopia	Nicaragua	Kazakstan	Latvia	
Gabon	Panama	Korea	Lithuania	
Gambia	Paraguay	Kuwait	Macedonia	
Ghana	Peru	Kyrgyzstan	Moldova	
Guinea	Trinidad and Tobago	Laos	Netherlands	
Guinea-Bissau	United States	Lebanon	Norway	
Kenya	Uruguay	Malaysia	Poland	
Lesotho	Venezuela	Mongolia	Portugal	
Liberia		Nepal	Romania	
Libyan Arab Jamahiriya		Oman	Slovakia	
Madagascar		Pakistan	Slovenia	
Malawi		Philippines	Spain	
Mali		Qatar	Sweden	
Mauritania		Russian Federation	Switzerland	
Mauritius		Saudi Arabia	Turkey	
Morocco		Sri Lanka	Ukraine	
Mozambique		Syrian Arab Republic	United Kingdom	
Namibia		Tajikistan		
Niger		Thailand		
Nigeria		United Arab Emirates		
Rwanda		Uzbekistan		
Senegal		Viet Nam		
Sierra Leone		Yemen		
Somalia				
South Africa				
Sudan				
Swaziland				
Tanzania				
Togo				
Tunisia				
Uganda				
Zambia				
Zimbabwe				

Appendix Table B
Random Effects Model

Dependent Variable: Physical Integrity Rights

	(1)	(2)	(3)	(4)	(5)	(6)
Distance	-0.653**	-0.648*				-0.919**
	(0.321)	(0.376)				(0.357)
Landlocked	-0.068**	-0.049	-0.069**	-0.068*	-0.080**	0.013
	(0.342)	(0.437)	(0.345)	(0.384)	(0.393)	(0.372)
Contiguous Countries	-0.046	-0.033	-0.042	-0.040	-0.065	-0.083
	(0.049)	(0.061)	(0.050)	(0.053)	(0.054)	(0.054)
Real GDP/Capita	0.048***	0.051***	0.048***	0.055***	0.043***	0.088***
	(0.011)	(0.012)	(0.011)	(0.014)	(0.012)	(0.014)
Population	-0.004***	-0.003***	-0.004***	-0.003***	-0.003***	-0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Freedom of Speech	0.386***	0.333***	0.385***	0.372***	0.386***	0.423***
	(0.062)	(0.069)	(0.062)	(0.067)	(0.068)	(0.062)
Polity	0.077***	0.076***	0.077***	0.073***	0.067***	0.074***
	(0.009)	(0.010)	(0.009)	(0.010)	(0.010)	(0.008)
Education	0.004	0.003	0.004	0.004	0.005*	
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	
Capital Distance			-0.529*			
			(0.310)			
Ethnic Language Distance				-0.291		
				(0.184)		
Official Language Distance					-0.326*	
					(0.173)	
Economic Growth						0.017***
						(0.005)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Constant	4.218***	4.146***	4.165***	4.052***	4.261***	4.249***
	(0.340)	(0.394)	(0.338)	(0.357)	(0.345)	(0.320)
Observations	2,120	1,762	2,120	1,767	1,695	2,395
R-squared	0.414	0.408	0.412	0.396	0.413	0.351
σ_μ	1.176	1.240	1.181	1.216	1.159	1.230
σ_ε	1.124	1.131	1.124	1.118	1.113	1.230
ρ	0.523	0.546	0.525	0.542	0.520	0.497

Standard errors in parentheses
Individual coefficients are statistically significant at the *10%, **5% or ***1% significance level