

Human Freedoms and Public Corruption around the World: Demonstration of a Curvilinear Relationship

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Abstract

Two enduring human concerns throughout the world are (a) the various freedoms enjoyed (or not enjoyed) by citizens of different nations, and (b) the presence or absence of corruption among public officials and politicians of those same countries. This paper explores the relationship between human freedoms and corruption in national public life around the globe.

A common conception of the relationship between human freedoms and corruption is that increasing freedoms create more opportunities for corruption. A competing hypothesis is that freedoms, by providing greater opportunities for personal choice, action, responsibility, and accountability, decrease corruption. A third proposition — examined in this paper — posits a curvilinear relationship, of the cubic form, between freedoms and corruption. Specifically, at low levels of human freedoms, corruption will increase as freedoms increase; at moderate to moderately high levels of freedoms, corruption will decrease as freedoms increase; and at very high levels of freedoms, a threshold point will be reached, beyond which corruption will increase.

This proposition is tested using polynomial regression analysis, with corruption as the dependent variable and human freedoms as the independent variable. Corruption is gauged with the Corruption Perceptions Index published by Transparency International. Human freedoms are measured with an index created by factor analyzing various published measures of economic, political/civil, cultural, and religious freedoms. Results support the curvilinear hypothesis, and implications and limitations of those results are discussed.

1. Introduction

Seldom has a week passed in the last few years without a report appearing in the broadcast and/or print media regarding some actual or alleged violation of various freedoms, or some actual or alleged act of corruption on the part of business people and/or government officials — sometimes with these two entities acting in concert. Such news reports reflect two enduring human concerns around the globe. One concern involves the various freedoms enjoyed (or not enjoyed) by citizens of different nations. The other concern reflects the presence or absence of corruption among public officials and politicians of those same countries. This paper focuses on these two concerns by exploring the relationship between human freedoms and corruption in national public life around the globe.

Section 2 of the paper examines the literature regarding then nature of corruption in public life. Section 3 explores various human freedoms — economic, political/civil, cultural, and religious — and connects them to the incidence of public corruption. In concluding this section, an argument is made on behalf of a curvilinear relationship, of cubic form, between human freedoms and corruption. Section 4 provides an extensive description of the databases; the dependent variable measure (*i.e.*, public corruption); the several component measures (*i.e.*,

economic, political/civil, cultural, and religious freedoms) of the independent variable (*i.e.*, human freedoms); the data collection time frames; and the factor analysis derivation of the aggregate independent variable. Section 5 presents the results of a polynomial regression analysis, with corruption as the dependent variable and human freedoms as the independent variable. Section 6 discusses the implications of the supported hypotheses and addresses strength and limitations of the study, as well as directions for future research.

2. Corruption in public life

Corruption is widely viewed as the abuse of public power (or public office) for private gain (World Bank, 1997) or the abuse of public trust for private gain (Todaro and Smith, 2003). Corruption has also been described as a violation of established rules and ways of doing things with the objective of obtaining private gain or profit (Sen, 1999). Transparency International (TI) defines corruption as “the abuse of public office for private gain” (TI CPI 2006, p. 10).

“Public office is abused for private gain when an official accepts, solicits, or extorts a bribe. It is also abused when private agents actively offer bribes to circumvent public policies and processes for competitive advantage and profit. Public office can also be abused for private benefit even if no bribery occurs, through patronage and nepotism, the theft of state assets, or the diversion of state revenues” (World Bank, 1997, p. 8).

What causes people to abuse public office for private gain? Although different authors focus on different causes of corruption, there is remarkable convergence among the various sources. For instance, Akçay (2006, p. 29) argues that “[c]orruption’s roots are grounded in a country’s social and cultural history, political and economic development, bureaucratic traditions and policies.” Jong-Sung and Khagram (2005) organize the various causes of corruption into three categories: economic, political, and cultural/historical factors. Tanzi (1998) identifies direct and indirect factors that promote corruption. Direct factors include taxation, spending decisions, regulations and authorizations, providing goods and services at below market prices, and financing political parties. Indirect factors include quality of the bureaucracy; transparency of rules, laws, and processes; level of public sector wages; penalty systems; and institutional

controls. How these different causes independently or jointly influence corruption have been explored in a variety of cross-national statistical studies (see for example: Ades and Di Tella, 1999; Blake and Martin, 2006; Husted, 1999; McCuddy, 2004; McCuddy and Dale, 2003; Montinola and Jackman, 2002; Paldam, 2001; Treisman, 2000; Triandis *et al.*, 2001).

3. Human Freedoms and Public Corruption

3.1 Economic Freedoms and Public Corruption

Jong-Sung and Khagram (2005) argue that economic factors are often considered to be the prime causes of corruption. For instance, wealthy people have greater motivation and more opportunity to exhibit corrupt practices, whereas poor people are more vulnerable to being exploited and are less able to hold wealthy people accountable for their decisions and actions (Jong-Sung and Khagram, 2005). Graeff and Mehlkop (2003) report that, depending on whether a country is rich or poor, different types of improvements in economic freedom have differential effects on corruption. They indicate that the legal structure affects corruption more in rich countries, whereas access to sound money is significant for poor countries.

Nations with much regulation (*i.e.*, the absence of economic freedom) tend to have high corruption (Eiras, 2003; Paldam, 2002). Throughout history excessive governmental intervention into the economy has been associated with corruption. Interventionist policies that promote corruption include access to loans at below-market rates, foreign trade restrictions, government procurement, price controls and regulation, state ownership of utilities and natural resources, secret or discretionary funds, and credit bailouts (Chafuen and Guzmán, 2000). The effect of economic freedoms on corruption has been demonstrated in a study focusing on 13 of the 15 former Soviet republics, wherein McCuddy and Dale (2003) reported results indicating that those republics that experienced greater economic freedoms subsequent to the breakup of the Soviet Union also had less corruption among public officials. In a more extensive study of 127 countries, McCuddy (2004) also found that economic freedoms promoted public morality.

Increased economic freedoms may be accompanied by increased political freedoms as well. Giavazzi and Tabellini (2004), for example, found that increased economic or political

liberalization (*i.e.*, increased freedom) decreases corruption, but that nations experiencing both types of liberalization seem to have lower corruption than countries that only liberalize on one dimension.

3.2 Political and Civil Freedoms and Public Corruption

Denuelin (2005, p. 75) describes political freedom “as the ability to participate in the life of the political community by deliberating about which actions to take in the particular political community, whether through the existing (democratic) political structures or through ad hoc direct participatory structures.” Political freedom reflects an individual’s right to participate in making decisions and taking actions regarding public policy, public interests, and the public good. The absence of political freedom is characteristic of repressive political regimes.

Political explanations of corruption include, but are not limited to, democracy (*e.g.*, electoral competition, political rights, etc.), government size, and decentralization (Jong-Sung and Khagram, 2005). Democratization is an important indicator of political freedom. Countries that are democratic are expected to have lower corruption levels than non-democratic ones (Blake and Martin, 2006; Treisman, 2000) because free speech, a free press, and the protection of civil liberties allows for more transparency (Treisman, 2000). According to Blake and Martin (2006), societies having vibrant democracies for 20 years or more enjoy improved chances of limiting future corruption. However, as Rose-Ackerman (2001) has observed, democratization does not ensure lower corruption because the need to raise campaign funds for electoral competition may lead to abuses of power. Thus, democracy is not a panacea for public corruption, but it is part of a complex solution (Blake and Martin, 2006). Still, if a nation delays democratic reforms for too long a period of time, higher levels of public corruption may result (Tavares, 2005).

A free society also acts to ensure the civil liberties of its citizens while creating an environment that allows individuals to seek their own happiness. In a free society, people have “the freedom to develop views, institutions, and personal autonomy without interference from the state” (Karatnycky and Piano, 2002, p. 723). The state is expected to respect and maintain the natural rights of its citizens and is barred from infringing on them. The right to life, free

association, free speech, and a free press are a few of the civil liberties that are commonly associated with free societies.

Given that civil liberties permit — even encourage — the pursuit of individual happiness, the possibility that unbridled self-interest will occur in free societies is more than an academic issue. If individuals are free to pursue personal happiness, will they become corrupt and neglect the welfare of the broader community? A plausible answer is that people will pursue self-interest because that is the fundamental economic nature of human beings to do so. A very plausible alternative answer is that having greater freedom to pursue personal happiness may make people more aware of both natural limits on the pursuit of personal happiness and obligations to the broader community. The latter interpretation is supported by McCuddy and Dale (2003), who report that those countries from the former Soviet Union that liberalized political rights and civil liberties subsequent to the Union's breakup experienced less public corruption. Based on an analysis of 133 countries, McCuddy (2004) also shows that restricted political rights and civil liberties are associated with greater corruption, whereas the promotion of political and civil liberties fosters less public corruption.

3.3 Cultural Freedoms and Public Corruption

The culture of a society or nation is a manifestation of the deeply held core values of its population. These core values reflect the population's preferences regarding how society operates and how human beings relate to and deal with each other. Jong-Sung and Khagram (2005) indicate that cultural (and historical) explanations of corruption include such factors as religion, cultural values, colonial heritage, legal traditions, and ethnolinguistic differences.

Hofstede (1997, 2001) has provided a widely accepted characterization of differences in the cultures of nations. According to Husted (1999), three of Hofstede's cultural values — power distance, uncertainty avoidance, and masculinity — are significant predictors of corruption. In this paper, the argument is made that Hofstede's cultural dimensions — power distance, uncertainty avoidance, and individualism/collectivism — are especially relevant to the concept of cultural freedoms, and in turn to public corruption. Specifically, this paper argues that smaller

power distance, lower (or weaker) uncertainty avoidance, and an individualistic orientation reflect, among other things, greater cultural freedom.

Hofstede (2001, p. 98) defines power distance as “the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally.” As power distance increases, freedom decreases. Included among the characteristics of large power distance societies are inequalities among people; subordinates being told what to do; an emphasis on centralization, hierarchy, and stratification; autocratic or oligarchic governments; large differentials in society; and the perspective that ‘might’ prevails over ‘right’ (Hofstede, 1997, pp. 37-43]. None of these characteristics are particularly suggestive of freedom. On the other hand, small power distance societies have the prime characteristics of equality, power sharing, and pluralism (Hofstede, 1997, pp. 37-43) — all of which signify freedom. Smaller power distance societies tend to have less public corruption than larger power distance societies (Li, Triandis, and Yu, 2006; McCuddy, 2004).

Weak (or low) uncertainty avoidance indicates greater freedom. Uncertainty avoidance concerns “the extent to which members of a culture feel threatened by uncertain or unknown situations (Hofstede, 2001, p. 161). Strong (or high) uncertainty avoidance, which is indicative of less freedom, is characterized by ideological fundamentalism and intolerance, the belief in one truth, and reliance on numerous precise laws and rules. Weak uncertainty avoidance, on the other hand, is characterized by the belief in human rights, acceptance of protest, and a reluctance to impose one group’s truth on other groups (Hofstede, 1997, p. 135). McCuddy (2004) reported a significant but not extremely strong relationship between uncertainty avoidance and public corruption wherein lower uncertainty avoidance was associated with less corruption.

“Individualism stands for a society in which the ties between individuals are loose: Everyone is expected to look after him/herself and his/her immediate family only. Collectivism stands for a society in which people from birth onwards are integrated into strong, cohesive in-groups, which throughout people’s lifetime continue to protect them in exchange for unquestioning loyalty” (Hofstede, 2001, p. 225). Individualistic societies embrace freedom to a greater extent than do collectivistic societies. For instance, in individualistic societies, ideologies of individual freedom are valued over ideologies of equality within the group, self-actualization

is prized, everyone has rights, and intervention by the state is restrained (Hofstede, 1997, p. 73). In separate cross-cultural analyses, Triandis *et al.* (2001) and McCuddy (2004) reported results indicating that collectivist cultures are more corrupt than individualist cultures. In a follow-up study within a single culture, Li, Triandis, and Yu (2006) demonstrated that individualism is linked to greater deception — most likely because of individualism's close association with competitiveness.

3.4 Religious Freedom and Public Corruption

Religious freedom — along with freedom of speech and freedom of the press — are commonly thought of as civil liberties in democratized societies. Although religious freedom is a civil liberty, it is one that has strong implications for morality. Indeed, the moral codes of societies and of their individual members are often rooted in religious beliefs and traditions. Therefore, in considering the impact of various freedoms on moral decisions and actions, it is beneficial to consider religious freedom as a separate though related variable.

Just as religious freedom can be conceptualized as a civil liberty, so can it be viewed as a characteristic of culture. That religion is an important element of culture is evident from Hofstede's (1997, 2001) work as well as from the intermingling of culture and religion in early 21st century geopolitics. Nwabuzor (2005), who views religion as a socio-cultural phenomenon, suggests the existence of ethnic diversity and varied religions explains the high level of corruption in developing countries. In a cross-country analysis using corruptions data from Transparency International, Paldam (2001) reports that religious diversity is associated with less corruption.

When religious beliefs and their associated moral codes are dictated, people may overtly become blind followers of doctrine or covertly reject said doctrine. In either case, substantive experience is lacking with respect to making moral choices. With the lack of such experience, the risk of unethical decisions and actions is likely to be greater. Consequently, we would expect that in cross-country comparisons greater religious freedom would be associated with less public corruption in a nation. McCuddy (2004) and McCuddy and Dale (2003) report results supporting this hypothesis.

3.5 Collectively Linking the Various Human Freedoms to Corruption

Taken together, the theoretical and empirical evidence cited in the preceding parts of this section point to a linear relationship between the various human freedoms and public corruption. Specifically, less freedom seems to be associated with greater corruption (or equivalently, less public morality) and more freedom appears to be associated with less public corruption (or equivalently, greater public morality). Therefore, it stands to reason, does it not, that freedom should be promoted unceasingly because, inevitably, public corruption will be reduced even further — and ultimately may even be eliminated? Or is there some upper limit to the impact of human freedoms upon public corruption, such that further increases in freedoms may result in a flattening of the growth rate of public morality or perhaps even a declination in public morality?

Some evidence suggests the relationships between various freedoms and public corruption may be nonlinear. Nwabuzor (2005), drawing on other researchers' results, reports a curvilinear (quadratic) relationship between economic freedom and corruption wherein greater morality is associated with more freedom and less morality is associated with less freedom but with a variable rate of change in morality as the amount of economic freedom changes. Paldam (2002) also reports a similar quadratic relationship between democratization and corruption. Deneulin (2005) suggests that increased political freedom can have deleterious effects resulting in more, not less, corruption. In particular he notes that “[t]he values that democratic practice may build are not necessarily good values upon which a society should be built” (Deneulin, 2005, p. 78). He also argues that “[t]he claims that people express through democratic practice are not always good claims that enhance valuable human freedoms — for example, the expression of people’s claims can lead to allocating more resources to the military than to primary health and education” (Deneulin, 2005, p. 78). Although spending for military, health care, and education provide opportunities for public corruption, perhaps the greatest opportunity for such corruption is in the arena of military spending. Gregory (2006), in taking both a historical and futuristic perspective, suggests that New Zealand, with a long-established reputation as a country quite free of public corruption, has witnessed increased incidents of such corruption as the nation has liberalized economically, politically, and socially.

A common conception of the relationship between various human freedoms and corruption is that liberalization (*i.e.*, increasing freedom) creates more opportunities for public officials to become corrupt. A competing hypothesis is that freedom, by providing greater opportunities for individual choice, action, responsibility, and accountability, decreases corruption on a collective basis. Although the predominant empirical support is for the notion that increased freedom promotes greater morality (or less public corruption), there is some evidence that indicates, under some conditions, increased freedom is associated with increased corruption. Thus, the relationship between human freedoms and public corruption may be more complex than either a linear association or quadratic association can capture.

This paper posits an alternative explanation of the relationship between human freedoms and public corruption; it argues for a curvilinear relationship, of cubic form, between freedoms and corruption. I argue that societies that enjoy little freedom will encounter increased corruption as freedom increases, because public officials exercise extreme control over many, if not most, aspects of the nation's economy and political and social fabric. Such extreme control affords opportunities for substantial pursuit of self-interest at public expense. Societies that enjoy a reasonable to a substantial degree of human freedoms will experience less public corruption because of the need to respond to the electorate, a regulatory environment that restrains government as well as business, and the rule of law, among other salient features. I further argue that human freedoms necessarily have some upper limit to their positive effects on public corruption. If human freedoms were at their ultimate level, the lack of any regulatory mechanisms whatsoever would create unrestrained opportunities for public corruption — and at least some public officials always would be willing to capitalize on those opportunities for personal gain. Thus, as human freedoms approach their zenith, public morality would begin to decline. The level of public morality would never descend as far it is when freedom is extremely restricted, but it would decline nonetheless.

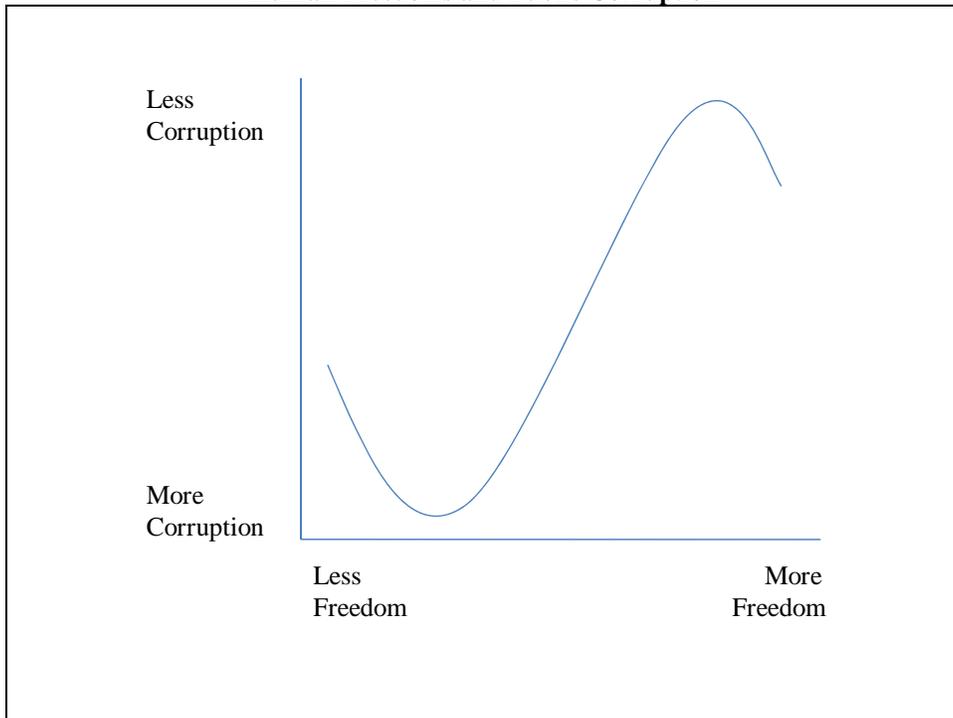
Based on the foregoing line of reasoning, the following interconnected hypotheses are offered, and summarized visually in Figure 1:

H1: In nations that have low levels of freedom, any increase in freedoms will be associated with an increase in public corruption (i.e., decrease in public morality).

H2: In nations that have more moderate to moderately high levels of human freedoms, any increase in freedoms will be associated with a decrease in public corruption (i.e., increase in public morality).

H3: In nations that have very high levels of human freedoms, a threshold point will be reached, beyond which public corruption will increase (i.e., public morality will decrease).

Figure 1. Predicted Relationship Between Human Freedoms and Public Corruption



4. Methodology

This study draws entirely on data that are available from published sources, including written documents and Internet sites. The description of the dependent variable and independent

variable components will identify these published sources as well as explain the variable definitions and measurements.

4.1 Public Corruption: The Dependent Variable

There are three major indicators of corruption: the World Bank Institute's Control of Corruption Index, the Political Risk Service's International Country Risk Guide, and Transparency International's Corruption Perceptions Index (Jong-Sung and Khagram, 2005). Transparency International's Corruption Perceptions Index (CPI) has been widely used in research studies (see for example: Blake and Martin, 2006; Jong-Sung and Khagram, 2005; Li, Triandis, and Yu, 2006; McCuddy, 2004; McCuddy and Dale, 2003; Méndez and Sepúlveda, 2003; Paldam, 2002).

Public corruption is measured with the Corruption Perceptions Index (CPI) that is published annually by Transparency International (2003, 2004, 2005, 2006). This index, which is available for many countries around the globe, is an excellent indicator of ethical decision making and ethical actions within the public life of a nation. The CPI reflects the perceptions of business people and country analysts regarding the degree of corruption that exists among public officials and politicians in a given country. As indicated earlier in this paper, Transparency International defines corruption as "the abuse of public office for private gain" (TI CPI 2006, 2006, p. 10). CPI scores range between 10 (highly clean) and 0 (highly corrupt); thus higher CPI scores indicate greater morality in public life.

The present study uses the CPI data that was published in 2005; the reason for this is explained later in Section 4.3. The 2005 CPI database included 159 nations from around the

world. The data set that was assembled for the analysis in this paper is structured around these 159 countries.

4.2 Human Freedoms: Independent Variable Components

Human freedoms become manifest in a variety of ways — through economic activity, through political rights and civil liberties, through the culture in which people work and live, and through the expression of their religious beliefs. Each of these areas of human freedom is captured as a component of the independent variable.

4.2.1. Economic Freedoms

The economic freedoms measure draws on the index of economic freedoms database that is published annually by The Heritage Foundation and *The Wall Street Journal* (Miles, Feulner, and O’Grady, 2004, 2005; Miles, Holmes, and O’Grady, 2006; O’Driscoll, Feulner, and O’Grady, 2003). The index of economic freedom reflects the degree of freedom present in countries around the world with respect to the following components: trade, taxation, government intervention, monetary policy, foreign investment, banking, wages/prices, property rights, regulation, and the black market. On each component scores of 1.00 to 1.99 indicate free, scores from 2.00 to 2.99 indicate mostly free; 3.00 to 3.99 indicated mostly unfree; and 4.00 to 5.00 indicate repressed (Miles, Holmes, and O’Grady, 2006, p. 57).

Beginning with the 2002 economic freedoms data, The Heritage Foundation and *The Wall Street Journal* changed the way in which the black market component was calculated (O’Driscoll, Holmes, and O’Grady, 2002). For the countries for which CPI data were available, the CPI was used to calculate a black market score. For those countries for which CPI data were

not available, The Heritage Foundation and *The Wall Street Journal* continued to use the computation method employed in 2001 and before. The net effect is that for 2002 and beyond, the black market score is not independent of the CPI. Therefore, the economic freedoms measure used in the present study excludes the black market component. This study's economic freedoms measure is the average of the remaining nine component scores regarding trade, taxation, government intervention, monetary policy, foreign investment, banking, wages/prices, property rights, and regulation. Economic freedoms data are available for 148 of the 159 countries on the 2005 CPI list.

4.2.2. Political and Civil Freedoms

The political and civil freedoms measure is drawn from the annual database published by Freedom House (Karatnycky, Piano, and Puddington, 2003; Piano and Puddington, 2004, 2005; Piano, Puddington, and Rosenberg, 2006). This database contains two indices — one reflecting political rights and the other reflecting civil liberties. Both indices measure freedom in relation to a checklist of items that define the ideal state of freedom. Scores of 1.0 to 2.5 indicate free; scores from 3.0 to 5.0 indicate partly free; and scores of 5.5 to 7.0 indicate not free (Piano, Puddington, and Rosenberg, 2006, p. 875). The political and civil freedoms measure for a given year represents the average of the political rights index and civil liberties index for that year. The political and civil freedoms measure is available for 157 of 159 countries on 2005 CPI list

4.2.3. Cultural Freedoms

The cultural freedoms measures are taken from Hofstede's database that is published in *Culture's Consequences* (Hofstede, 2007, p. 500; also available on Geert Hofstede's Web site). Hofstede's power distance index, uncertainty avoidance index, and individualism index have scores ranging from 0 to just over 100. On the power distance index, lower scores indicate lower power distance, and thus more freedom, whereas higher scores indicate larger power distance, and thus less freedom (Hofstede, 2001, p. 86). On the uncertainty avoidance index, lower numbers reflect low or weak uncertainty avoidance (more freedom) while higher numbers reflect high or strong uncertainty avoidance (less freedom) (Hofstede, 2001, p. 150). On the individualism index, lower values indicate a more collectivistic orientation (less freedom) and higher values indicate a more individualistic orientation (more freedom) (Hofstede, 2001, pp. 214). The power distance, uncertainty avoidance, and individualism indices are available for only 80 of the 159 nations on the 2005 CPI list.

For the purpose of this study, the individualism index was reverse-scored so that lower scores represented greater freedom and higher scores reflected less freedom. The uncertainty avoidance and power distance indices were not transformed (*i.e.*, they were direct scored). The cultural freedoms measure is the average of the reverse-scored individualism index and the direct-scored power distance and uncertainty avoidance indices.

4.2.4. Religious Freedom

The religious freedom measure is taken from the database published in *Religious Freedom in the World: A Global Report on Freedom and Persecution* (Marshall, 2000). It reflects freedom in the practice of religion. Scores are derived from a checklist of items that describe different aspects of religious freedom. Scores of 1, 2, or 3 indicate free; scores of 4 or 5

indicate partly free; and 6 or 7 indicate unfree (Marshall, 2000, pp. 19 + 26-27). This measure is available for only 70 of the 159 nations on the 2005 CPI list.

4.3. Data Collection Time Frames for Different Data Sources

In assembling data for analysis, differences among the published sources with regard to data collection time frames had to be accommodated (see Figure 2). Until 2006 the Corruption Perceptions Index for each year had been based on a three-year moving (or rolling) average of the current year and the immediately preceding two years. In 2006, the annual CPI began using a moving average that covered two years (TI CPI 2006, 2006, p. 10). The economic freedoms measures for a specific year represent data from the first and second quarters of the immediately preceding year and the third and fourth quarters of the year before that (Miles, Feulner, and O’Grady, 2004, p. 51; Miles, Feulner, and O’Grady, 2005, p. 59; Miles, Holmes, and O’Grady, 2006, p. 57; O’Driscoll, Feulner, and O’Grady, 2003, p. 51). The political and civil freedoms data for a given year reflect data collected in the preceding year (Karatnycky, Piano, and Puddington, 2003, p. 693; Piano and Puddington, 2004, p. 712; Piano and Puddington, 2005, p. 776; Piano, Puddington, and Rosenberg, 2006, p. 873). Finally, the cultural freedoms measure (Hofstede, 2001, p. 500) and religious freedom measure (Marshall, 2000, pp. 18-27) reflect single data points. In order for the data for the different variables of interest to be as chronologically contiguous as possible, the 2005 CPI was used as the starting point. This was the three-year moving average of 2005, 2004, and 2003. The economic freedoms and political and civil freedoms data were then selected to correspond as closely as possible to the three years included in the 2005 CPI moving average; in each case an average of the three most closely corresponding years of data was used (except for those countries for which less than three years

of data was available). The shaded cells in Figure 2 highlight these decisions as well as the inclusion of cultural freedoms and religious freedom as single data points.

Each of the variables of interest — dependent and independent — can be argued to be fairly stable over time. The incidence of public corruption and various human freedoms usually changes relatively slowly, except under conditions of revolution or terrorism. Therefore, use of a three-year average — in the case of the CPI, economic freedoms, and political and civil freedoms — is appropriate. It may be argued that cultural freedoms and religious freedoms are more resistant to change than public corruption, economic freedoms, and political and civil freedoms. As such, a single data point, even though it is several years old, is very relevant to the current state of nature. Thus, the time frames for all of the measures included in this study can be justifiably linked to one another.

Figure 2. Summary of Data Collection Timeframes for Different Data Sources

Data Year	Corruption Perceptions Index	Economic Freedoms^b	Political and Civil Freedoms	Cultural Freedoms	Religious Freedom
2006	2-year moving average of 2006 and 2005	Q1/Q2 of 2005 and Q3/Q4 of 2004	Covers 2005 data year	Single Data Point	Single Data Point
2005	3-year moving average of 2005, 2004, and 2003	Q1/Q2 of 2004 and Q3/Q4 of 2003	Covers 2004 data year		
2004	3-year moving average of 2004, 2003, and 2002	Q1/Q2 of 2003 and Q3/Q4 of 2002	Covers 2003 data year		
2003	3-year moving average of 2003, 2002, and 2001	Q1/Q2 of 2002 and Q3/Q4 of 2001	Covers 2002 data year		

^a Beginning with the 2006 data year, Transparency International switched to a two-year moving average.

^b To compute the economic freedoms measure used in this study, a three-year average was used in all cases where three years of data existed for a country. A two-year average was used when only two years of data were reported for a country. When only one year of data was available for a country, that single data point was used in the computation.

4.4.

Results of Factor Analysis of Independent Variable Components

The four independent variable components — Economic Freedoms (EF), Political and Civil Freedoms (PCF), Cultural Freedoms (CF), and Religious Freedom (RF) — were submitted to factor analysis in an effort to combine them into a single index. One factor was extracted using the principal components method of extraction. The four components explained 59.13% of the variance in the factor, and this factor was labeled the Human Freedoms Index (HFI). Table 1 presents the factor loadings for and the inter-correlations of the components of the HFI.

Also, a reliability analysis was performed to determine the internal consistency among the HFI components. The Cronbach alpha coefficient was .860 based on standardized scale items, which is above the recommended threshold level of .70 (Nunnally, 1978, p. 245). This indicates an exceptionally high level of consistency among the components of the HFI index.

Table 1. Factor Loadings and Pearson Correlation Coefficients for Components of Human Freedoms Index

Human Freedoms Index (HFI) Components	Factor Loadings	Pearson Correlation Coefficients ^a			
		EF	PCF	CF	RF
Economic Freedoms (EF)	.873	1.000 (n = 148)			
Political and Civil Freedoms (PCF)	.848	.734 Sig. = .000 (n = 147)	1.000 (n = 157)		
Cultural Freedoms (CF)	.500	.484 Sig. = .000 (n = 79)	.293 Sig. = .009 (n = 79)	1.000 (n=80)	
Religious Freedom (RF)	.797	.761 Sig. = .000 (n = 69)	.836 Sig. = .000 (n = 70)	.430 Sig. = .002 (n = 47)	1.000 (n = 70)

^a Two-tailed significance.

One possible output of the factor analysis computer program is the computation of factor scores for each case in the data set being analyzed. These factor scores reflect a weighted linear combination of the components in the factor. In the present study a factor score was computed

for each nation in the database, and mean substitution of missing values was utilized in the computation. The original factor scores were then multiplied by -1.0 in order to reverse the original scaling where lower factor scores reflected greater freedom. Thus, the transformed factor scores, reported herein as the Human Freedoms Index (HFI), have lower scores representing less freedom and higher scores signaling greater freedom. This transformation facilitates interpretation of the empirical results of the subsequent curve fitting analysis relative to the research propositions.

5. Results

Polynomial regression analysis was used to test for a cubic curvilinear relationship between the Corruption Perceptions Index and the Human Freedoms Index. Given the incomplete data for some of the HFI components, two separate regression analyses were run. One regression analysis used the full data set ($n = 159$) with mean substitution of missing values in the HFI component variables. A second polynomial regression analysis utilized a reduced data set ($n = 47$) with listwise deletion of cases where there was missing data in the HFI component variables.

5.1. Analysis of Full Data Set (Using Mean Substitution of Missing Data)

Table 2 provides summary statistics for the linear, quadratic, and cubic regression models for the full data set. All three of the regression models are highly significant according to the F -test. In the linear model, human freedoms explain 57.5% of the variance in public corruption. The explained variance increases by 8.1% to 65.6% with the quadratic model, and by another 1.7% to 67.5% with the cubic model. Although the addition of both the quadratic term and the cubic term improve the predictability of the regression model, the cubic term adds only about one-fifth as much explanatory power.

Table 3 summarizes the regression equations and regression coefficient t -test results for the linear, quadratic, and cubic regression models for the full data set. In parallel to the overall results shown in Table 2, the regression coefficients in each of the three models are shown to be significant. A partial F -test was performed on the addition of the quadratic term to ascertain if it

improved predictability over the linear model (Kleinbaum and Kupper, 1978, p. 119); the test result ($F = 37.769$; $df = 1, 156$; $p < .001$) indicated that the addition of the quadratic term for HFI significantly improved prediction of public corruption. The partial F -test was also performed on the addition of the cubic term to ascertain if it improved predictability beyond that provided by the quadratic model; this result ($F = 8.155$; $df = 1, 155$; $p < .005$) demonstrated that the cubic term improved the prediction of public corruption.

Collectively, the comparative results for the linear, quadratic, and cubic models for the full data set demonstrate that the cubic model provides the best description of the relationship between the Human Freedoms Index and the Corruption Perceptions Index.

Table 2. Summary Results of Polynomial Curve Fitting with the Full Data Set

	Linear Model	Quadratic Model	Cubic Model
Number of Cases in Analysis	159	159	159
Number of Missing Cases	0	0	0
R	.759	.811	.822
R ²	.575	.658	.675
F Value	212.772	150.184	107.434
df for F	1, 157	2, 156	3, 155
Significance of F	.000	.000	.000

Table 3. Regression Equations and Regression Coefficients' Test Results for Polynomial Curve Fitting with the Full Data Set

	Linear Model	Quadratic Model	Cubic Model
Regression Equation:			
Constant	4.078	3.643	3.657
Linear Term	1.653	1.592	2.039
Quadratic Term		.438	.443
Cubic Term			-.146
t-test Results for Regression Coefficients:			
Linear Term	14.587	15.544	10.977
Quadratic Term		6.146	6.365
Cubic Term			-2.856
Significance of t-test Results for Regression Coefficients:			
Linear Term	.000	.000	.000
Quadratic Term		.000	.000
Cubic Term			.005

5.2. Analysis of Reduced Data Set (Using Listwise Deletion of Missing Data)

Table 4 provides the summary regression statistics for the reduced data set. As with the full data set, the F -test for the reduced data set shows that the three regression models are highly significant. Human freedoms explain 68.0% of the variance in public corruption in the linear model and 70.7% in the quadratic model, an increase of 2.7%. Another 3.3% increase to 74.0% of the explained variance occurs with the addition of the cubic term to the equation.

Table 5 provides the regression equations and regression coefficient t -test results for the three regression models with the reduced data set. According to the t -test results, the regression coefficients in each of the three models are significant. Moreover, the partial F -test (Kleinbaum and Kupper, 1978, p. 119) reveals significant improvement in the predictability of public corruption with the addition of the quadratic term to the linear model ($F = 4.074$; $df = 1, 44$; $p < .05$) as well as with the addition of the cubic term to the quadratic model ($F = 5.309$; $df = 1, 43$; $p < .05$).

As with the analysis of the full data set, the analysis of the reduced data set shows that the cubic model is the best of the three regression models in terms of using the HFI to predict the CPI.

Table 4. Summary Results of Polynomial Curve Fitting with the Reduced Data Set

	Linear Model	Quadratic Model	Cubic Model
Number of Cases in Analysis	47	47	47
Number of Missing Cases	112	112	112
R	.825	.841	.860
R ²	.680	.707	.740
F Value	95.806	53.212	40.717
df for F	1, 45	2, 44	3, 43
Significance of F	.000	.000	.000

Table 5. Regression Equations and Regression Coefficients' Test Results for Polynomial Curve Fitting with the Reduced Data Set

	Linear Model	Quadratic Model	Cubic Model
Regression Equation:			
Constant	4.921	4.537	4.573
Linear Term	1.970	1.980	2.858
Quadratic Term		.393	.344
Cubic Term			-.444
t-test Results for Regression Coefficients:			
Linear Term	9.788	10.164	6.741
Quadratic Term		2.018	1.842
Cubic Term			-2.304
Significance of t-test Results for Regression Coefficients:			
Linear Term	.000	.000	.000
Quadratic Term		.050	.072
Cubic Term			.026

5.3. Graphic Presentation of Cubic Model

With both the full data set (n = 159) and the reduced data set (n =47), the empirical results clearly and strongly demonstrate that the cubic model is better than either the linear model or the quadratic model in describing the relationship between human freedoms and public corruption. Figure 3 provides a graphic presentation of the cubic relationship for the full data set, and Figure 4 presents the cubic relationship for the reduced data set. Figures 3 and 4 reveal that the empirical relationship between HFI and CPI is highly consistent with the predicted (or hypothesized) relationship previously presented in Figure 1.

Figure 3. Actual Empirical Relationship Between Human Freedoms (X Axis) and Public Corruption (Y Axis) for Full Data Set

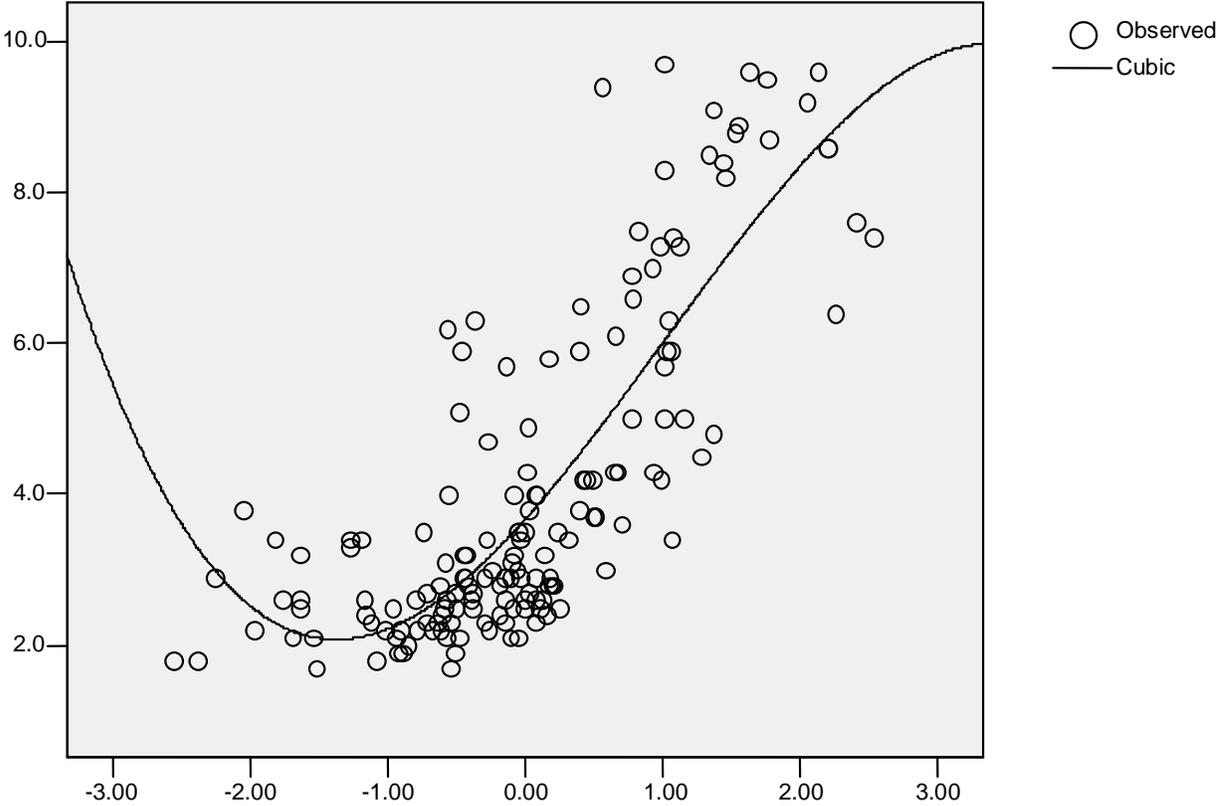
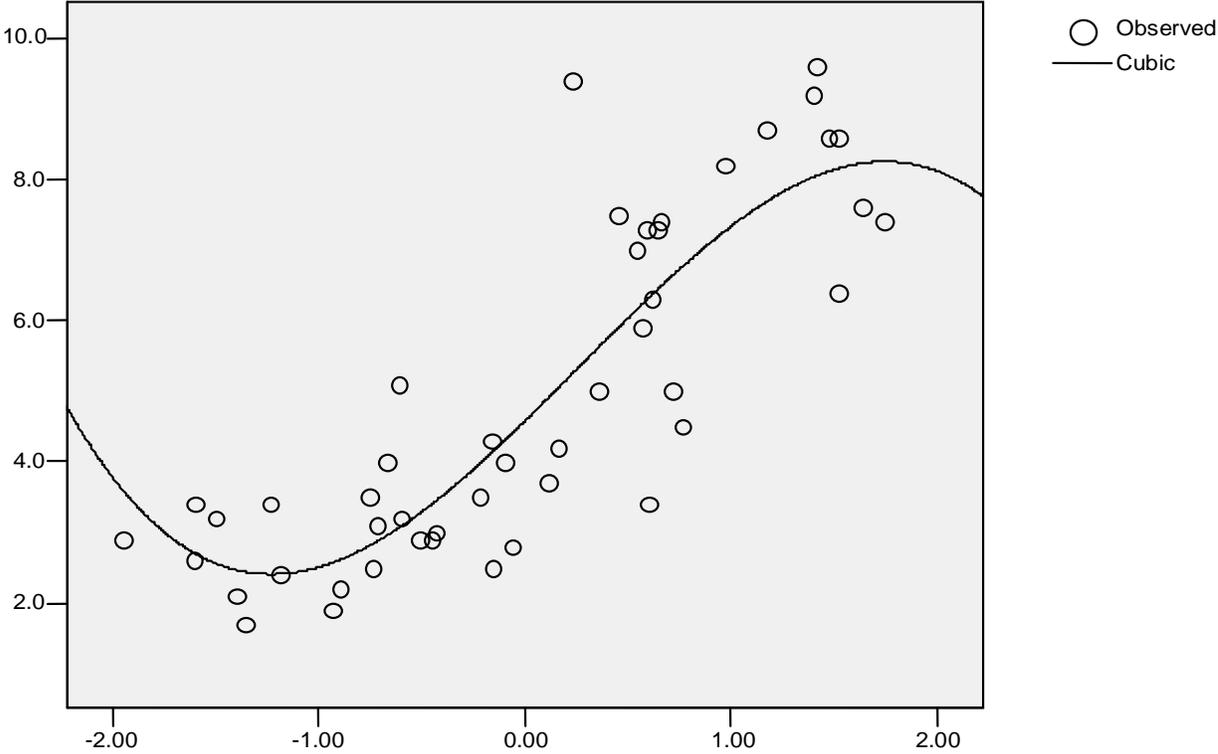


Figure 4. Actual Empirical Relationship Between Human Freedoms (X Axis) and Public Corruption (Y Axis) for Reduced Data Set



The cubic relationship for the reduced data set is a virtual duplicate of the predicted relationship in Figure 1, whereas the cubic relationship for the full data set very closely approximates the predicted relationship. As previously explained, the full data set used mean substitution of missing values on the independent variable components, whereas the reduced data set did not have any missing values and, therefore, no substitution. Although mean substitution of missing values is a commonly-used analytical technique (SPSS Chapter 30: Factor Analysis, 2005), it has the potential for obscuring or distorting the underlying relationship. Perhaps this explains the slight difference in the curves shown in Figures 3 and 4.

Based on the R^2 figures shown above in Tables 2 and 4, the reduced data set provides the better predictability for the HFI/CPI relationship (*i.e.*, 74.0% of explained variance versus 67.5%). Being able to explain nearly three-quarters of the variance in the dependent variable and virtually duplicating the hypothesized relationship provides unequivocal and compelling evidence in support of the research hypotheses presented at the end of section 3.5 of this paper. Explaining just over two-thirds of the variance in public corruption when using the full data set and very closely approximating the hypothesized relationship serves to reinforce this conclusion.

6. How Much Freedom? — Implications and Conclusions

The results of this study strongly support the three component hypotheses associated with a cubic relationship between human freedoms and public corruption. A cubic relationship was found to be a better fit than either a linear relationship or a quadratic relationship — and for both the full sample with mean substitution of missing data and the reduced sample with listwise deletion of missing data. Moreover, the actual relationships quite closely duplicated the proposed curvilinear relationship. Further, the strength of the cubic relationship — $R^2 = .675$ for the full data set and $R^2 = .740$ for the reduced data set — was remarkable. Thus, the results of the present study are strong and clear.

An extremely important implication of these results is that societies should strive to promote economic, political/civil, cultural, and religious freedoms as major means for encouraging public morality. However, societies should not follow the edict that: *If some freedom is good, more freedom is better, and a whole lot is utterly marvelous!* Too much

freedom — perhaps like too much food or alcohol (or whatever diversion or vice is your predilection) — can have deleterious effects on human existence. Unlimited freedom would likely be very chaotic and create untold opportunities for self-aggrandizing behavior at others' expense.

6.1. Strengths of the Study

In addition to the compelling results, an important strength of the present study is the use of multiple, independent data sources. The dependent variable and each of the components of the independent variable were derived from different, well-respected sources. Moreover, each of those sources has developed its respective database through a rigorous methodological process.

An additional strength of the study is that multiple freedoms measures were used to construct the Human Freedoms Index (HFI). Having several different components to the HFI helps ensure that the broad range of human freedoms is indeed being captured.

6.2. Weaknesses/Limitations of the Study

Perhaps the most critical limitation of the present study is the partial data sets for the cultural freedoms and religious freedom measures. Data existed on the cultural freedoms variables for only 80 of the 159 countries for which the CPI was available. Data for the religious freedoms variable was available for 70 of the countries. Thus, to capture a sense of the relationship between human freedoms and public corruption in the entire sample, mean substitution of missing data was used.

Complete data on a listwise basis existed for only 47 nations. Although the polynomial regression results virtually duplicated the predicted relationship, only 29.6% of the countries of the CPI sample were covered in the reduced data set. Whether this relationship would hold up using a larger subsample with complete data is something that remains to be determined empirically.

6.3. Directions for Future Research

Future research should seek additional validation of the curvilinear relationship between human freedoms and public corruption by using the two other major indices of public corruption

— the World Bank Institute’s Control of Corruption Index and the Political Risk Service’s International Country Risk Guide — that were identified earlier in this paper. Also, future research should examine data over several years so that the degree of stability in the freedoms/corruption relationship can be explored.

Another possible direction for future research is to answer the question: Do economic freedoms and political/civil freedoms together provide as good a prediction of public corruption as do all four measures — economic, political/civil, cultural, and religious freedoms — combined into a single index? If so, then a more complete cross-country analysis can be conducted because of the very few missing observations for the economic freedoms and political/civil freedoms variables.

6.4. Concluding Observation

Even with its inherent limitations, this study provides compelling evidence of a strong relationship between human freedoms and public corruption that is cubic in form and extraordinarily consistent with the hypothesized shape of the curvilinear relationship. Human freedoms are a powerful force in relation to public corruption, and sound theoretical analysis would argue that freedoms are the causal variables in this relationship. Promoting various forms of human freedom is a good thing to do — in and of itself, and because of the impact on public morality. Yet, we must recognize that too much freedom has within it potentially lethal seeds that can undermine public morality. Given that we human beings are part of multiple communities (*e.g.*, nuclear and extended families; work, volunteer, and social organizations; the villages, towns, or cities in which we live; the nation of which we are citizens; and the global community), we must recognize that our freedoms — individually and collectively — of necessity must have some upper limit if public morality is to be maintained at a high level. Without reasonable restraints on human freedoms, public officials — indeed, all members of society — could more easily embrace and justify unethical decisions and actions. This is something we humans should try to avoid with a fervent passion. Let us be free — but let it be with respect and reverence for the essential, but limited, restrictions that these various communities impose on us. In short, if some freedom is good, more is better, but total freedom

can be the undoing of both the public life of our societies and the private lives of individuals who succumb to the temptations of unbridled freedom.

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