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Understanding the Demand-Side Issues of International Corruption

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ABSTRACT. In global business, business organizations and their representatives frequently encounter corruption and may be the perpetrators, victims, or simply participants in such acts. While international corruption has existed in multiple forms for several years, many individuals, companies, nations, and international organizations are currently attempting to reduce or eliminate corrupt acts because of their harmful effects on local economies and the quality of life of citizens. Several of these corruption curtailment efforts have been directed toward the supply-side of corruption, i.e., those who make corrupt payments. In developing an understanding of corruption, however, and formulating strategies for its reduction, consideration must also be given to the demand-side of corruption, i.e., those who demand and accept corrupt payments. Accordingly, this study examined the demand-side of corruption and several related factors in the categories of government, economy and poverty, education, geography, and culture. Analysis of these factors employed the Corruption Perceptions Index (CPI), formulated annually by Transparency International (TI), and other sources. Several factors in each of the five categories were found to correlate significantly with perceived corruption, and strategies for addressing these issues were developed and discussed.

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KEY WORDS: Corruption, cultural, demand-side, economic, international

Introduction

The expansion in recent years of international trade and global business competition has been accompanied by growth in corruption (Johnstone and Brown, 2004; Theobald, 2002). Businesses that operate globally are currently likely to encounter bribery in many of the countries in which they transact (Burguet and Che, 2004; Nichols, 2000). A World Bank survey of 3600 companies in 69 countries revealed that 40% of those companies paid bribes to facilitate international business (Kaikati et al., 2000). In some regions of the world, corruption and illegal practices are so widespread that they constitute the actual norm, i.e., a parallel economic system with its own traditions and values (Fadahunsi and Rosa, 2002). The existing and growing extent of corruption is so significant that it may severely limit international trade and serve as a barrier to future international markets (Randall, 1999). In addition to the deleterious effects on business, corruption may also exacerbate poverty, political instability, and environmental degradation (Sweeney, 1999). In 1999, Cesar Gaviria, Secretary General of the Organization of American States (OAS) stated

> Corruption deprives all of us: our governments of their legitimate functions; our citizens of their resources and rights; and the international commerce of its balance and transparency (*TI Newsletter*, 1999).

Developing nations, in particular, may be suffering from the consequences of corruption as many government officials attempt to personally benefit from

the flow of resources into their countries (Pope and Vogl, 2000). This ''corruption eruption'' has attracted the attention of the international press and has resulted in increased scrutiny of the business practices of multinational companies (Davids, 1999; Husted, 1999).

A corrupt transaction typically involves a supply side, i.e., the payer of a bribe, and a demand side, i.e., the recipient of the bribe. Recent anti-corruption efforts, such as those of the Organization for Economic Cooperation and Development (OECD), primarily address the supply side. The rationale of supply-side anti-corruption efforts is that corruption will be reduced if payers of bribes, e.g., multinational businesses, are constrained from paying bribes (Berenbeim, 1999). There is concern, however, that a singular focus on the supply side of the global corruption will not result in an effective, integrated network of corruption prevention and detection (George et al., 2000). An analogy, albeit imperfect, can be made to the traffic of illegal drugs: how effective would a drug law enforcement strategy be if it focuses solely on the manufacturers of the drug, the supply side, and ignores the buyers and users of the illegal substances, the demand side? Consideration of the demand side issues regarding corruption, consequently, may be appropriate: why are some government officials motivated to accept or demand bribes?

Government shortcomings

In Werlin's (2002) study of the definition and causes of corruption, he concluded that while non-governmental organizations (NGOs) and other organizations should be encouraged in their efforts to mitigate corruption, the excessive weakness of governance in many nations may be a more appropriate focus. Government officials of some countries may accept bribes because they are not adequately constrained from doing so; i.e., the nation has not enacted and enforced adequate preventive and enforcement measures that would cause an official to refrain from corrupt activities. Multiple issues may contribute to these shortcomings. First, poorer countries may have limited financial resources to enforce laws, including those related to corruption. These nations, correspondingly, may have less sophisticated legal systems related to commerce, possibly stemming from the relatively recent entry of many of these less-developed countries into international capitalism (George et al., 2000; Getz and Volkema, 2001). Khera (2001) explains that society in many developing countries is feudal and paternalistic, and power is concentrated among the officialdom or the cultural elite, which is often not answerable to the citizenry. In some of these countries, senior public officials and politicians have immunity from prosecution and rule in an authoritarian fashion (Pope and Vogl, 2000). Continuing ethical political leadership is critical in the success of any government's anti-corruption efforts; well-designed laws and regulations to counter corruption are relatively useless if not supported and actively enforced by political leaders (Quah, 1999).

The governments of developed, wealthier countries can also have shortcomings that lead to corruption. Some argue that larger governments can result in inefficient bureaucracies, which can be used by those familiar with the weaknesses of the system to conduct corrupt transactions which will not be prevented or detected (Henderson, 1999).

Economics and poverty

Theobald (2002) indicated that global poverty may be the most important factor in understanding international corruption concerns. Public officials in many countries may be motivated to accept or demand bribes because they are victims of poverty; i.e., to provide basic needs of food and housing for a public official and his or her dependents, that official may be induced to corruption. Such a circumstance may occur when the salaries of public officials are low compared to costs of living (Hotchkiss, 1998). In concluding their study of corruption, Waller et al. (2002) suggested that the best option for reducing bribery is increasing the salaries of civil servants. Other empirical research studies have indicated that countries that are mired in poverty are often inundated by corruption, while wealthier countries are less susceptible (Ehrlich and Lui, 1999).

In some cultures, there is a degree of empathy and understanding for public officials, who accept illegal payments in an effort to avoid starvation. Getz and Volkema (2001) used attribution theory to explain

that situational exigencies allow for atypical behavior. Many if not most, societies condemn theft, but stealing small amounts to feed one's family may be considered excusable.

Education

A lack of education may be another reason for a public official's demand for a bribe. Officials with relatively little education may solely comprehend the short-term personal gains of accepting bribes and fail to understand the global implications of corruption on world economics, the economy of their countries, and, ultimately, their quality of life (Sweeney, 1999).

Educations of short duration or questionable quality may also limit the employment possibilities of the citizenry. As a consequence, corruption may emerge as an attractive source of funds for those, who are in position to demand such payments.

Geography

Geography and climate are factors in understanding differences in wealth and poverty among nations, and correspondingly, may also be helpful in understanding corruption. With few exceptions, most of the wealthy, industrialized countries of the world are in the temperate zones, and most poor countries are in the tropical zones (Harrison, 2000b; Sachs, 2000).

Sachs (2000) offers three explanations for the differences in economic development among nations in temperate and tropical areas. First, tropical agriculture presents several problems not faced by farmers in temperate zones, such as weak soils and high soil erosion. These issues lead to poor farm productivity of perennial and staple food crops in tropical areas. Second, the burden of infectious disease is higher in the tropics, partly because of a proliferation of insects and animals in tropical regions that carry diseases to humans. Third, for the last 2000 years, most of the world's population has resided in the temperate zones, providing those areas with more labor for economic growth. Tropical nations, correspondingly, have had fewer workers with which to develop their economies (Sachs, 2000).

Culture

Both Harrison (2000a) and Landes (2000) indicate that culture is the primary determinant of the economic progress of a country. Understanding cultures, their motivations, their philosophies, and the differences among cultures, however, is and has been a challenging science, and those in a cultural group frequently do not understand those in other cultural groups. What economically motivates a German, for example may vary materially from the economic motivations of a Nigerian; neither may understand why the other is motivated differently, and culture may partly account for their varying attitudes and philosophies (Huntington, 2000).

Correspondingly, participants in acts of corruption may be influenced by cultures and cultural value systems that may endorse, rather than condemn, such activities. Because of the existing social structures of some nations, there may exist a propensity to resort to corrupt practices to achieve socially approved goals (Maingot, 1994). In some cultures, nepotism and family favoritism are paramount in business transactions, even at the expense of ethics (Izraeli, 1997; Khera, 2001). Harrison (2000a) explains a dichotomy between progressive cultures and static cultures that may account for acceptance or even promotion of corruption among some nations. Progressive cultures are those that emphasize the future, value work and achievement, stress frugality, promote education, consider merit essential to advancement, extend trust beyond family to society, and enforce justice and fair play. Static cultures, on the other hand, emphasize the present and past, marginally value work and achievement, do not stress frugality, marginally value education, consider advancement to be a function of connections and family, primarily trust only family, and consider justice to be a function of connections or wealth (Harrison, 2000a).

Variance in cultural attitudes regarding corruption may be partially attributable to very different histories in the development of economies and industry among countries. Corrupt practices may be more acceptable to cultures that have recently adopted economic and industrial development than those cultures that willingly embraced such development several decades ago (Khera, 2001; Riggs, 1997).

Research regarding corruption

Efforts to mitigate corruption may be aided by research regarding corrupt activities, their causes, motivations, and correlates. Such analysis may assist policymakers, businesses, lenders, NGOs, intergovernmental organizations (IGOs), and, ultimately, citizens of every country in understanding the causes and rationales of corruption, so that effective and integrated anticorruption policies may be developed (Hotchkiss, 1998). Insights regarding corruption may be gained by reviewing existing empirical studies and analysis of research that examined corruption.

In a study of the socioeconomic factors related to corruption by Getz and Volkema (2001), levels of corruption were found to be directly related to economic adversity; power distance, which was defined as the extent to which a culture prefers rigid social hierarchies, and uncertainty avoidance, which was defined as the extent to which a culture prefers stability and avoids change. Conversely, corruption was found to be inversely related to wealth, defined as gross domestic product (GDP) per capita, and consumer prices (Getz and Volkema, 2001). In a similar, earlier study using Transparency International's (TI) Corruption Perceptions Index (CPI), Husted (1999) also found significant correlations between corruption and power distance, uncertainty avoidance, gross national product (GNP), and masculinity, which was defined as a focus on material success as opposed to a focus on issues related to the quality of life. Kaikati et al. (2000) also found a strong correlation between GNP per capita and corruption, as measured by the CPI.

Lambsdorff (2002) analyzed corruption data from 74 countries and concluded that high predictability of corruption causes additional corruption; i.e., when businesspeople have confidence that payment of a bribe will achieve a desired result, there is little motivation to seek alternatives. Campos et al. (1999) also empirically studied the predictability of corruption using data for 59 nations from the World Bank. They concluded that an inability to predict the effects of a corrupt payment may reduce levels of investment (Campos et al., 1999).

Lipset and Lenz (2000) used regression analysis and the CPI in an analysis of factors related to corruption. They concluded that the economies of developed, less corrupt countries emphasize rationality, small family size, achievement, social mobility, and universalism. Corruption was more prevalent with feudal-type, economically-stratified systems that stressed obligation and loyalty (Lipset and Lenz, 2000). Mauro (1997) also used regression analysis in a study of corruption. He found that a decline in corruption was associated with (1) an increase in per capita economic growth and (2) an increase in government spending on education. Goldsmith (1999) also used the CPI and regression analysis to examine corruption in a sample of less-developed countries. Economic liberalization, political democratization, and administrative centralization were found to be associated with lower degrees of political corruption (Goldsmith, 1999). In another study of corruption and government, Elliot (1997) studied data from 83 countries and found that the size of a government's budget relative to GDP decreases as levels of corruption decrease.

Using data from the World Bank and other sources, Ades and Di Tella (1999) empirically examined corruption and economic competition. They found that corruption was higher in countries, where domestic firms are sheltered from foreign competition or where antitrust regulations are not effective (Ades and Di Tella, 1999).

A study of the demand-side of corruption

In an effort to better understand the demand side issues of corruption, a study was conducted of TI, CPI and several factors related to government, economics and poverty, education, geography, and culture. Founded in 1993, TI is an NGO that is based in Berlin and has more than 75 national chapters around the world, which promote governmental and civil policies of zero tolerance for corruption. In 1995, TI published the first CPI, which is published annually and ranks countries in terms of the degree to which corruption is perceived to exist among their public officials and politicians. The formulation of the rankings has been refined several times since 1995; it currently draws on several different surveys and independent institutions including businesspeople, the general public, and country analysts. Based on this data, TI calculates a CPI score for those countries for which TI believes

it has adequate, reliable data. The calculated CPI score ranges from 10, indicating a minimal level of perceived corruption, to zero, indicating much perceived corruption. While there are more than 200 sovereign nations worldwide, only 90 were included in the 2000 CPI; those included were primarily those frequently engaged in international commerce. After the annual CPI calculation, TI publishes the results in a ranking of CPI scores. Comparison of the CPI from year to year reveals few changes in the perceptions of corruption regarding most nations, although a trend of more perceived corruption or less perceived corruption is evident with a few countries.

Table I displays the 2000 CPI. The scores ranged from a high of 10.0, attributed to Finland, to a low of 1.2, attributed to Nigeria. This indicates that Finland was perceived to be relatively free of corruption, while Nigeria was perceived to have significant corruption. The mean CPI score was 4.8, the standard deviation of the scores was 2.4, and the skewness of the distribution of scores was 0.657 as many of the scores were clustered around the range of 2.5–5.0.

For purposes of this study, the 90 countries that were included in the CPI were grouped into four categories. Because of the skewness of the distribution of CPI scores, countries were not placed in groups of equal size but, instead, were placed in groups delineated by equal intervals in the CPI score, i.e., four intervals of 2.5 of the ten-point scale. The 17 countries, whose CPI score was between 10.0 and 7.6, inclusive, are referred to as the low corruption countries in the study, and the mean of their CPI scores was 8.8. The 16 countries of the mid-low category had CPI scores between 7.5 and 5.1, inclusive, and a mean score of 6.1. There are 42 countries in the mid-high category, which ranges from 5.0 to 2.6, inclusive; with a mean CPI score of 3.6. The fourth is the high corruption category. The 15 countries in this latter group had CPI scores between 2.5 and 0, inclusive, with a mean of 2.0. Each of the four categories has a standard deviation of 0.7 or less and a skewness between −0.4 and +0.4. The CPI scores of the four groups differed significantly (p-value < 0.001, Kruskal-Wallis (KW)).

Using the non-parametric statistical measure of KW, these four groups were compared across a wide range of factors related to: (1) government, (2)

TABLE I
The 2000 corruption perceptions index (CPI)

Rank	Country	CPI score
1	Finland	10.0
2	Denmark	9.8
3	New Zealand	9.4
3	Sweden	9.4
5	Canada	9.2
6	Iceland	9.1
6	Norway	9.1
6	Singapore	9.1
9	Netherlands	8.9
10	United Kingdom	8.7
11	Luxembourg	8.6
11	Switzerland	8.6
13	Australia	8.3
14	U.S.A	7.8
15	Austria	7.7
15	Hong Kong	7.7
17	Germany	7.6
18	Chile	7.4
19	Ireland	7.2
20	Spain	7.0
21	France	6.7
22	Israel	6.6
23	Japan	6.4
23	Portugal	6.4
25	Belgium	6.1
26	Botswana	6.0
27	Estonia	5.7
28	Slovenia	5.5
28	Taiwan	5.5
30	Costa Rica	5.4
30	Namibia	5.4
32	Hungary	5.2
32	Tunisia	5.2
34	South Africa	5.0
35	Greece	4.9
36	Malaysia	4.8
37	Mauritius	4.7
37	Morocco	4.7
39	Italy	4.6
39	Jordan	4.6
41	Peru	4.4
42	Czech Republic	4.3
43	Belarus	4.1
43	El Salvador	4.1
43	Lithuania	4.1
43	Malawi	4.1
43	Poland	4.1
48	South Korea	4.0

TABLE I
Continued

Rank	Country	CPI score
49	Brazil	3.9
50	Turkey	3.8
51	Croatia	3.7
52	Argentina	3.5
52	Bulgaria	3.5
52	Ghana	3.5
52	Senegal	3.5
52	Slovak Republic	3.5
57	Latvia	3.4
57	Zambia	3.4
59	Mexico	3.3
60	Columbia	3.2
60	Ethiopia	3.2
60	Thailand	3.2
63	China	3.1
63	Egypt	3.1
65	Burkina Faso	3.0
65	Kazakhstan	3.0
65	Zimbabwe	3.0
68	Romania	2.9
69	India	2.8
69	Phillippines	2.8
71	Bolivia	2.7
71	Cote-d'Ivoire	2.7
71	Venezuela	2.7
74	Ecuador	2.6
74	Moldova	2.6
76	Armenia	2.5
76	Tanzania	2.5
76	Vietnam	2.5
79	Uzbekistan	2.4
80	Uganda	2.3
81	Mozambique	2.2
82	Kenya	2.1
82	Russia	2.1
84	Cameroon	2.0
85	Angola	1.7
85	Indonesia	1.7
87	Azerbaijan	1.5
87	Ukraine	1.5
89	Yugoslavia	1.3
90	Nigeria	1.2

economics and poverty, (3) education, (4) geography, and (5) culture. For each nation studied, data related to these five categories was taken from the following sources: (1) *Britannica Book of the Year* (Encyclopedia Britannica [EB], 2000), (2) ''The World Factbook'' (United States Central Intelligence Agency [CIA], 2000), (3) ''The Freedom House Country Rankings'' (Freedom House, 2000), (4) *World Development Indicators* (The World Bank, 2000), and *The Washington Post* (2000).

Government factors and corruption

In considering the degree of corruption in a country, the government is a primary consideration. As discussed previously, governments have the ability to enact laws and regulations that prohibit corrupt acts, and hire, train, and compensate those government officials, who may be parties to corruption. Enforcement of corruption-mitigating laws is also the responsibility of national governments.

Table II displays several factors related to national governments, segmented by the categories of corruption discussed previously: low, mid-low, mid-high, and high. Data related to the political rights (PR) index and the civil liberties (CL) index were extracted from ''The Freedom House Country Rankings'' (Freedom House, 2000). The source of all other data used in creating Table II is the *Britannica Book of the Year* (EB, 2000).

Regarding government type, significant differences exist among the different corruption categories. More than half of the countries in the low corruption category were constitutional monarchies, in which a titular monarch reigns but elected leaders essentially govern the nation. The other three categories, mid-low, mid-high, and high, are composed primarily of republics, which have elected leaders and a centralized form of government to which local government subdivisions are subordinate (EB, 2000).

Those countries with less perceived corruption had been independent for a longer period of time than those countries with more perceived corruption, and those differences are significant (p-value = 0.003, KW). Nations in the low corruption category had been independent for more than 80 years, on average, while those countries in the high corruption category had achieved their independence more recently. Those countries with the most perceived corruption had been independent for an average of only 32.1 years.

TABLE II
Government factors

	Levels of perceived corruption					
	Low	Mid-low	Mid-high	High	Mean	*p*-value★
Corruption perceptions index	8.8	6.1	3.6	2.0	4.8	< 0.001
Government type						
Constitutional monarchy (%)	52.9	18.8	9.5	0.0	17.8	< 0.001
Communist state (%)	5.9	0.0	2.4	6.7	3.3	< 0.001
Republic (%)	41.2	81.3	88.1	93.3	78.9	< 0.001
Years of independence	80.4	67.1	61.3	32.1	61.1	0.003
Years under current constitution	59.9	31.0	19.2	12.5	27.9	< 0.001
Government military expenditures (millions $)	23,817.1	8516.2	4032.7	6044.7	8902.2	0.103
Government military expenditures per capita ($)	503.7	292.3	82.0	76.1	198.0	< 0.001
Government non-military expenditures (millions $)	201,095.2	133,803.2	39,191.3	15,373.8	82,623.5	< 0.001
Government non-military expenditures per capita ($)	8685.9	3318.9	864.0	242.5	2674.3	< 0.001
Government military expenditures / central government expenditures (%)	6.4	8.9	11.8	19.4	11.5	0.002
Political rights index (PR)	1.5	1.6	3.1	5.0	2.9	< 0.001
Years since change in PR	21.5	11.6	4.2	3.0	8.6	< 0.001
Civil liberties index (CL)	1.5	2.1	3.5	4.8	3.1	< 0.001
Years since change in CL	21.2	6.8	4.3	2.8	7.7	< 0.001

★Kruskal-Wallis.

Similarly, the four categories of countries differ significantly with regard to the number of years under which they had been subject to their current constitution (p-value < 0.001, KW). Those countries in the high corruption category had been subject to their current constitution for 12.5 years, on average, while those countries with the least perceived corruption had operated under the same constitution for the last 59.9 years, on average. These findings regarding the relationship between corruption, the period of independence, and constitution duration are consistent with those of Getz and Volkema (2001), which were discussed previously.

Military and non-military government expenditures also varied widely from nation to nation. While government military expenditures did not differ significantly among the four categories of perceived corruption (p-value = 0.103, KW), such expenditures did differ significantly when population was considered (p-value < 0.001, KW). Per capita military expenditures averaged around $500 for nations in the low corruption category but averaged around $76 for those in the high corruption category. Government non-military expenditures differed among the categories regardless of consideration of population size (p-values < 0.001, KW). Non-military government expenditures exceeded $200 billion, on average, for the least corrupt countries, and such expenditures per capita were approximately $8700 for nations in that category. For countries in the high corruption category, however, non-military government expenditures averaged approximately $15 billion and only around $240 per capita. When a ratio was calculated of the government military expenditures to the total central (military and non-military) government expenditures for each nation, those ratios differed significantly among the four categories of perceived corruption (p-value = 0.002, KW). For low corruption countries, 6.4% of central government expenditures were for military purposes; the corresponding percentage for those countries with the most perceived corruption was 19.4.

The political rights and civil liberties afforded by national governments were also considered in the study. As mentioned previously, data regarding political rights and civil liberties was provided from Freedom House, an American non-profit organization that promotes democracy and freedom around the world. Freedom House calculates and publishes two annual numerical assessments for most nations, both of which range from one to seven. With these indices, one signifies more freedom and seven denotes less freedom. One of these assessments addresses PR, i.e., the extent, to which the government offers voters the chance to make a free choice among candidates and the extent, to which candidates are chosen independently of the government. The second annual assessment made by Freedom House is a measure of CL, i.e., freedoms associated with expression, assembly, association, and religion (Freedom House, 2000).

Both the political rights (PR) index and the civil liberties (CL) index differed significantly among the four categories of perceived corruption (p-values $<$ 0.001, KW). Both of the averages of the PR and CL indices for the countries in the low category was 1.5, indicating a high degree of freedom, while those indices averaged 5.0 and 4.8, respectively, for those in the high corruption category.

The Freedom House also publishes the historical PR and CL indices since they were first published in 1972, and this data was analyzed for the number of years since the last change in the PR and CL for each nation. Countries in the high corruption category experienced their most recent change in the PR and CL indices approximately three years previously, on average, while the most recent change in the PR and CL indices of the nations in the low category was slightly more than 21 years previously, on average. This difference in years since the last index change was significant among the four categories for both the PR and CL indices (p-values $<$ 0.001, KW).

In concluding about perceived corruption and government factors, several observations may be made from this analysis. Those countries with less perceived corruption tended to be those with governments that had: (1) a constitutional monarchy or a republic form of government, (2) been independent for a relatively long time, (3) not had recent changes in their constitution, (4) relatively large government expenditures, and (5) successfully fostered and consistently protected political rights and civil liberties. Conversely, those countries with more perceived corruption tended to be those with governments that had: (1) a republic form of government, (2) been independent for a relatively short time, (3) had recent changes in their constitution, (4) relatively small government expenditures, and (5) not successfully fostered or consistently protected political rights and civil liberties.

Economy and poverty factors and corruption

Factors related to a country's economy and extant poverty may also affect corruption, as the poor may be more motivated to resort to corruption to survive. These factors are summarized in Table III. Factors related to inflation, exports, imports, and unemployment were extracted from "The World Factbook" which is compiled by the U.S. Central Intelligence Agency (CIA) (CIA, 2000). Other data employed in creating Table III was taken from the *Britannica Book of the Year* (EB, 2000).

The GNP is the total value of goods and services produced within a country and from transactions in other countries in one year. Among the four categories of perceived corruption, GNP differed significantly (p-value $=$ 0.001, KW); the average GNP for the countries with the least perceived corruption was approximately 841 billion dollars, while the average GNP for those nations in the high corruption category was only 54 billion dollars. Similarly, GNP per capita averaged only \$754 for citizens that lived in the countries with the most perceived corruption, while those who lived in nations in the low corruption category had an average GNP per capita that exceeded \$28,000. Correspondingly, the four categories also differed significantly with regard to GNP per capita (p-value $<$ 0.001, KW). These findings are consistent with those of Getz and Volkema (2001), Husted (1999) and Kaikati et al. (2000), whose studies were discussed previously.

The four groups of countries also differed significantly with regard to the CPI, a cost-of-living measure that reflects changes in the cost of a designated group of basic consumer goods and services from a base year (p-value $<$ 0.001, KW). The average CPI for the nations in the low corruption category, for example was 105.1, indicating a group

TABLE III
Economy and poverty factors

	Levels of perceived corruption					
	Low	Mid-low	Mid-high	High	Mean	*p*-value★
Corruption perceptions index	8.8	6.1	3.6	2.0	4.8	< 0.001
GNP (millions $)	841,227.9	495,482.4	144,706.8	54,204.9	323,547.9	0.001
GNP per capita ($)	28,439.4	12,331.3	3033.6	754.0	9105.4	< 0.001
Consumer price index (1995 = 100)	105.1	123.4	212.8	309.4	192.6	< 0.001
Annual inflation in consumer prices (%)	1.2	3.9	19.1	32.6	15.3	< 0.001
Annual exports (millions $)	161,204.7	82,404.8	29,474.7	11,728.3	60,808.9	< 0.001
Annual exports per capita $)	10,833.4	4579.8	763.3	159.5	3243.3	< 0.001
Annual imports (millions $)	173,047.1	73,671.9	28,338.0	8422.8	60,412.1	< 0.001
Annual imports per capita $)	10,815.9	4262.1	827.4	161.3	3213.7	< 0.001
Unemployment rate (%)	6.3	9.6	10.1	16.0	10.3	0.466
Annual private consumption expenditure per capita $)	15,100.0	7721.3	1980.1	587.8	5246.9	< 0.001
Percentage of private consumption expenditure related to food (%)	19.7	30.9	39.7	53.3	36.6	< 0.001
Percentage of GDP generated by agriculture (%)	2.1	6.2	16.0	27.1	13.5	< 0.001
Percentage of labor force utilized in agriculture (%)	3.6	12.6	32.4	47.2	25.9	< 0.001
Daily available calories per capita	3283.5	3116.4	2773.8	2600.0	2902.0	< 0.001
Percentage of daily calories from grains, starchy vegetables (%)	27.1	39.4	51.6	57.8	45.8	< 0.001
Annual electricity consumption per capita (kWh)	10,784.5	3828.2	1865.0	1336.9	3810.8	< 0.001
Annual petroleum products consumption per capita (tons)	2011.7	910.0	477.2	188.3	795.9	< 0.001

★Kruskal-Wallis.

of goods that cost $100 in the base year of 1995 would cost $105.10 in 2000. For countries in the high perceived corruption category, the CPI had an average of 309.4. As discussed previously, a study by Getz and Volkema (2001) had similar findings with regard to consumer prices.

Annual inflation in consumer prices also differed significantly among the four categories of nations (*p*-value < 0.001, KW). For the countries with less perceived corruption, the annual inflation rate averaged 1.2%, while the rate averaged 32.6% for countries with the most perceived corruption.

The value of annual imports and exports also differed significantly among the four categories of perceived corruption, as well as related per capita amounts (*p*-values < 0.001, KW). Both annual exports per capita and annual imports per capita averaged approximately $10,800 for the countries with the least perceived corruption, while the comparable figures for the high corruption category were about $160 per capita.

The unemployment rate is a ratio of the number of unemployed, who are seeking employment to the number of employed. While this rate ranged from 6.3% for the countries in the low category of perceived corruption to 16.0% for those nations in the high perceived corruption category, the difference among the categories of nations regarding the unemployment rate was not significant (*p*-value = 0.466, KW).

Another criterion of a nation's economy and the poverty of its citizens is the annual private consumption expenditure per capita. For countries in the category of low perceived corruption, annual

private consumption was slightly more than $15,000 for each person, but annual consumption was less than four percent of that amount for those countries with the most perceived corruption, i.e., $588 per capita. Relatedly, the four categories of nations differed significantly with regard to this measure (p-value < 0.001, KW).

Five measures related to food and agriculture also differed significantly among the four categories of perceived corruption (p-values < 0.001, KW). The percentage of citizens' private consumption expenditure related to food averaged was slightly less than 20% for countries with the least perceived corruption and averaged 53.3% for countries with the most perceived corruption. Similarly, the percentage of the country's GDP generated by agriculture was 2.1 for those countries in the low corruption category but averaged 27.1% for those countries perceived as most corrupt. A related calculation is the percentage of the labor force utilized in agriculture; 3.6% of the labor force of the low corruption countries was employed in agriculture while the comparable percentage for the high corruption countries was 47.2%.

Two of the measures regarding food and agriculture relate to calories that may be consumed by the citizens of nations. First, citizens of the countries in the low category of perceived corruption had around 3300 available daily calories, whereas, those who lived in the countries with the most perceived corruption had an average of 2600 available daily calories. The second caloric measure regards the composition of daily calories, specifically, the percentage of daily calories from grains and starchy vegetables, such as potatoes. Grains and starchy vegetables comprised 27.1% of the calories consumed by citizens of nations in the low category of perceived corruption, while the related percentage for those who lived in the countries with the most perceived corruption was 57.8%.

The last two measures of economy and poverty also regard consumption. Annual electricity consumption per capita differed significantly among the four categories (p-value < 0.001, KW). Citizens of nations in the category of low perceived corruption consumed around 10,800 kWh of electricity annually, while those who lived in countries in the high corruption category consumed only about 12% of that amount, i.e., approximately 1300 kWh annually. Annual per capita consumption of petroleum also differed significantly among the categories (p-values < 0.001, KW). For the countries in the low category of perceived corruption, annual petroleum consumption was slightly more than 2000 tons per capita while the consumption for nations in the high corruption category was less than 10% of that amount, i.e., slightly less than 190 tons per capita.

These several factors regarding economy and poverty combine to suggest that, as in other studies mentioned previously, a notable association between corruption and wealth exists. Those countries with the least amount of perceived corruption tended to have a larger GNP, a smaller consumer price index, lower inflation, more imports and exports, a lower unemployment rate, relatively less expenditure and labor associated with food production, more available food, higher quality food, and more electricity and petroleum consumption. The nations with more perceived corruption, conversely, tended to have a smaller GNP, a larger consumer price index, higher inflation, fewer imports and exports, a larger unemployment rate, relatively more expenditure and labor associated with food production, less available food, lower quality food, and less electricity and petroleum consumption.

Education factors and corruption

As discussed previously, education may be related to corruption for at least two reasons. First, achieved level of education frequently determines occupations for which one is qualified; e.g., a citizen with little education may only qualify for jobs that pay small wages. To survive, such an individual may be tempted to engage in corrupt acts. Second, a well-educated citizen may understand the deleterious effects of corruption on society and, accordingly, may be less tempted by corruption. Factors related to education are summarized in Table IV. Factors related to school enrollment were compiled by the World Bank, a nongovernmental organization that facilitates loans for developing countries (The World Bank, 2000). Other data employed in creating Table IV was taken from the *Britannica Book of the Year* (EB, 2000).

As indicated on Table IV, literacy varied significantly among the four categories of perceived corruption (p-value < 0.001, KW). Of those countries

TABLE IV
Education factors

	Levels of perceived corruption					
	Low	Mid-low	Mid-high	High	Mean	*p*-value⋆
Corruption perceptions index	8.8	6.1	3.6	2.0	4.8	< 0.001
Percentage of population (aged ≥ 15 years) literate (%)	98.4	92.4	81.0	78.3	85.9	< 0.001
Percentage of school-age persons (all grades) enrolled (%)	90.0	82.2	67.7	56.4	72.6	< 0.001
Percentage of primary grade persons enrolled (%)	99.1	99.0	92.4	82.5	93.2	0.002
Percentage of secondary grade persons enrolled (%)	95.5	85.3	63.5	50.5	71.3	< 0.001
Percentage of tertiary grade persons enrolled (%)	54.5	34.6	21.4	13.6	28.7	< 0.001
Student–teacher ratio: primary grades	16.1	19.5	27.1	27.4	23.7	0.006
Student–teacher ratio: secondary grades	13.2	16.3	20.7	19.6	18.3	0.030

⋆ Kruskal-Wallis.

in the category of low perceived corruption, 98.4% of the adults were literate, while only 78.3% of the adults were literate in the high category of perceived corruption.

The four categories also differed significantly with regard to the percent of school-age persons enrolled in school at different levels (p-values ≤ 0.002, KW). The percentage of school-age persons enrolled in all school grades was 90% for nations in the low corruption category, but only 56.4% of school-age persons were enrolled in school in those countries in the high corruption category. Similarly, primary, secondary, and tertiary grade enrollment percentages were approximately 99%, 96%, and 55%, respectively for the countries with the least perceived corruption, while the corresponding percentages for nations in the high corruption category were approximately 83%, 51%, and 14%, respectively.

The ratio of students to teachers was also considered among the categories of perceived corruption. The primary school student–teacher ratios differed significantly among the four categories (p-value = 0.006, KW); the ratio was approximately 16:1 for those countries in the low category of perceived corruption, but was about 27:1 for nations in the high corruption category. The student–teacher ratio for secondary grades was also considered but was not significantly different among the four categories (p-value = 0.030, KW).

These education factors, in total, indicate that education is related to corruption. Those countries with the highest levels of perceived corruption had relatively low rates of literacy, relatively low school enrollment percentages, and relatively more students for each teacher in primary schools. Nations with less perceived corruption had relatively high rates of literacy, relatively large school enrollment percentages, and relatively fewer students for each teacher in primary schools.

Geography factors and corruption

As discussed previously, geography may play a role in corruption as citizens may be affected by diseases and economic issues associated with different climates. A limited number of factors related to geography are listed on Table V. Geographical area was taken from the *Britannica Book of the Year* (EB, 2000). Temperature information was extracted from the "Historical Weather Database" of *The Washington Post* (2000) internet site. Information regarding proximity and latitude was compiled by the U.S. Central Intelligence Agency (CIA, 2000).

Among the four categories of perceived corruption, there were no significant differences in geographical area (p-value = 0.046, KW). Differences among the categories, however, were significant with regard to average year-round temperature (p-value = 0.006, KW). Nations in the low category of perceived corruption had an average year-round temperature of 52.4°, while the comparable temperature for countries in the high category was 67.2°.

Relatedly, two latitudinal measures also differed significantly among the four categories (p-values ≤ 0.013,

TABLE V
Geography factors

	Levels of perceived corruption					
	Low	Mid-low	Mid-high	High	Mean	*p*-value*
Corruption perceptions index	8.8	6.1	3.6	2.0	4.8	< 0.001
Geographical area (thousands of square kilometers)	1724.6	263.4	1032.1	1722.7	1141.0	0.046
Average year-round temperature (degrees Fahrenheit)	52.4	59.3	63.7	67.2	61.4	0.006
North–south proximity (latitude degrees)	46.9	36.9	27.3	23.3	32.0	< 0.001
Latitude degrees from the equator	38.9	27.5	19.2	17.8	24.0	0.013

*Kruskal-Wallis.

KW). Using latitude as a measure of north–south proximity, countries in the low category of perceived corruption had an average latitude of 46.9°, while those nations in the high category tended to be further south with an average latitude of 23.3. Another measure of latitude was the degrees from the equator. Countries in the low corruption category tended to be further from the equator with an average latitude of 38.9°, while those in the high category of perceived corruption tended to be closer to the equator with an average latitude of 17.8°.

A few summary observations stemming from this study may be made regarding geography and perceived corruption. Those countries that were perceived to have less corruption tended to have cooler climates, were further north, and were located relatively far from the equator. Countries that were perceived to have relatively more corruption tended to have warmer climates, were further south, and were located relatively close to the equator.

Culture factors and corruption

Culture, as discussed previously, pervades an economy and society and may be the dominant factor in understanding corruption. Relevant factors regarding culture, however, are difficult to identify, although several are listed in Table VI. Factors related to population age, consumption, and economic aid were compiled by the U.S. Central Intelligence Agency (CIA, 2000). Other factors in Table VI were taken from the *Britannica Book of the Year* (EB, 2000).

One factor that may influence and be influenced by culture is the nation's population size. While the four categories of perceived corruption differed significantly with regard to population size (p-value = 0.011, KW), the trend was not consistent as nations in the mid-low category had the least population, on average, and the nations in the mid-high category tended to have the largest populations. Population density had a wide range among the four categories, but the categories did not differ significantly (p-value = 0.904, KW). Annual population growth, similarly, did not differ among the four categories of perceived corruption (p-value = 0.091, KW).

The four categories, however, differed significantly with regard to the percentage of the population that lived in urban areas (p-value < 0.001, KW). In those nations of the low category of perceived corruption, more than 80% of the population, on average, lived in urban areas. Conversely, about half of that percentage, about 40% of the population, lived in urban areas in countries of the high corruption category.

The average age of citizens also differed significantly among the categories (p-value = 0.003, KW). The percentage of the population aged between 15 and 64 years averaged 67.4% for nations in the low category of perceived corruption, but averaged only 59% for countries in the high category.

Another factor that may relate to culture is the percentage of adults who are employed or seeking employment; this factor differed significantly among the four categories of perceived corruption (p-value < 0.001, KW). On average, 50.8% of adults were employed or seeking employment in countries in the category of least perceived corruption, while in the group of nations with the most perceived corruption, an average of 41.7% of adults were employed or seeking employment.

TABLE VI
Culture factors

	Levels of perceived corruption					
	Low	Mid-low	Mid-high	High	Mean	*p*-value★
Corruption perceptions index	8.8	6.1	3.6	2.0	4.8	< 0.001
Population (thousands)	31,387.5	20,152.1	81,360.2	51,279.1	56,026.0	0.011
Population density (persons per square kilometer)	753.6	144.4	102.0	78.4	228.7	0.904
Annual population growth (%)	0.8	0.8	1.2	1.7	1.1	0.091
Percentage of population living in urban areas (%)	82.6	64.2	54.1	40.9	59.1	< 0.001
Percentage of population aged 15–64 (%)	67.4	65.0	62.3	59.0	63.2	0.003
Percentage of adults employed or seeking employment (%)	50.8	42.0	41.5	41.7	43.4	< 0.001
Household size	2.6	3.5	4.4	4.8	4.0	< 0.001
Fertility rate	1.7	2.1	3.0	3.9	2.8	0.003
Life expectancy at birth	78.4	71.6	65.3	57.4	67.6	< 0.001
Percentage of national consumption attributable to poorest 10% of citizens (%)	3.0	2.7	2.7	2.6	2.7	0.638
Percentage of national consumption attributable to richest 10% of citizens (%)	23.8	29.7	31.2	31.7	29.6	0.002
Economic aid received (+) or donated (−) (millions)	−1749.6	−957.5	1120.1	3965.7	683.0	< 0.001

★Kruskal-Wallis.

Household size, fertility rate, and life expectancy also differed significantly among the four categories of perceived corruption (p-values ≤ 0.003, KW). Households in countries of the low category of perceived corruption averaged 2.6 persons; the comparable percentage for households of the high category was 4.8 persons. As discussed previously, a similar finding was made by Lipset and Lenz (2000). Relatedly, the fertility rate of women in the countries of the low corruption category averaged 1.7, but averaged 3.9 for women who lived in the nations of the category with the most perceived corruption. Life expectancy at birth also differed materially among the four categories. On average, those born in 2000 in the countries of the low corruption category were anticipated to live 78.4 years, while citizens born in countries in the high corruption group had anticipated life spans that were more than 20 years shorter, i.e., 57.4 years on average.

Consideration was also given to the amount of national consumption that was attributed to the wealthiest and poorest citizens of the countries in the study. Among the four categories of perceived corruption, there were no significant differences in the percentage of national consumption attributed to the poorest ten percent of citizens (p-value = 0.638, KW); the average for all categories was between 2.6% and 3.0%, inclusive. The four categories did differ significantly with regard to the percentage of national consumption attributable to the wealthiest citizens (p-value = 0.002, KW). In those countries in the low category of perceived corruption, around 24% of the national consumption was attributable to the wealthiest ten percent of citizens, while in nations of the high corruption category, approximately 32% of the national consumption was attributable to the wealthiest 10%.

The final cultural factor is one that may also be considered an economic factor. In this study, economic aid is considered a cultural factor because of the intentional decision on the part of many nations to either donate or receive aid. The four categories

of perceived corruption differed significantly with regard to economic aid (p-value < 0.001, KW). On average, each country in the low category of perceived corruption donated about 1.7 billion dollars in economic aid, while the average country in the high category of perceived corruption received approximately 4 billion dollars in economic aid.

Analysis of these few cultural factors may provide insights regarding corruption. Those countries with less perceived corruption had a populations that tended to: (1) be relatively urban, (2) have relatively large percentages of citizens aged 15–64, (3) have relatively more citizens either employed or seeking employment, (4) have smaller households, (5) have lower fertility rates, (6) have relatively long life expectancies, (7) have relatively small percentages of national consumption attributable to the wealthiest citizens, and (8) donate economic aid to other countries. Conversely, those nations with more perceived corruption had a populations that tended to: (1) be relatively rural, (2) have smaller percentages of citizens aged 15–64, (3) have fewer citizens either employed or seeking employment, (4) have larger households, (5) have higher fertility rates, (6) have shorter life expectancies, (7) have larger percentages of national consumption attributable to the wealthiest citizens, and (8) accept economic aid from other countries.

Synthesis and application

Drawing accurate, overall conclusions is challenging with a study of this genre that considers many factors. Perhaps more important than study conclusions are possible applications of these findings to address issues related to global corruption.

In this study, corruption, or at least the perception of corruption, was found to be related to several factors in the areas of government, economics, education, geography, and culture. Many of these several factors are interrelated, thereby confounding, to a degree, analysis and conclusions. Widespread poverty in a nation, for example, may be affected by geographical and cultural factors and may, through limited funds provided by taxes, reduce funding related to governmental and educational purposes.

The results of this study are, nonetheless, useful for understanding the demand-side issues of international corruption and compiling profiles of nations that are more or less prone to corruption. Through this process, possible actions and solutions may be identified to mitigate the deleterious effects associated with corrupt activities.

In characterizing nations that were perceived to have widespread corruption, several characteristics were observed in this study. With regard to government factors, many of the relatively corrupt nations had governments that had been independent for a short period of time and had a constitution that had been adopted or amended in recent years. These governments tended to have small financial resources, and PR and CL were not well protected. The more corrupt nations also tended to be relatively poor nations with smaller GNPs, more inflation, more unemployment, less consumption, and more focus of citizen labor and personal expenditure on food which was often of small quantity and dubious quality. Citizens of these relatively corrupt countries were also more likely to be illiterate and have less education, and each primary school teacher in these countries tended to be responsible for the education of a relatively large number of students. Geography was also related to perceived corruption, as the most corrupt nations tended to be those with relatively warm climates close to the equator. Last, a few factors were examined related to culture. Analysis of these factors indicated that citizens of the most corrupt countries tended to live in rural areas, had larger families, and anticipated shorter life expectancies. Fewer citizens in these corrupt countries were aged between 15 and 64 years or were employed or seeking employment. The wealthiest citizens of these nations consumed a relatively large share of the national consumption, while these countries accepted economic aid from other nations and other sources.

As mentioned previously, gaining insights into the demand side of business corruption may be helpful in devising strategies to mitigate corrupt acts. While the current study examined the correlation, and not causation, of perceived corruption and many related factors, interpretation of the study findings may lead to the development of several actions that could curtail corruption. These actions may be fostered by groups of nations acting through cooperative efforts, such as the United Nations or the OECD, or NGOs, like TI and the World Bank. Multinational

and global businesses may also be helpful in eliminating corruption by publicly expressing and enforcing commitments to refrain from engaging in corrupt acts. Corruption mitigation, however, may be most effectively promoted at the grass roots level by committed citizens of each individual nation and their influence on their own national government (Hotchkiss, 1998). These possible actions are not oriented toward addressing corruption, *per se*, but in creating a local national environment, based on the study findings, wherein corruption mitigation efforts may be successful and the incentives to engage in corrupt acts are reduced.

First, long-term stabilization of governments and their promotion and commitment to political rights and civil liberties may be helpful in corruption reduction. Such stabilization and protection of rights requires adequate government funding for the establishment of anti-corruption legislation, adequate law enforcement, adequate salaries of public officials, and adequate funding of education. Such funding may initially need to come from other countries or international organizations as additional taxes levied against businesses or individuals may be counterproductive until relative economic prosperity is achieved.

Second, governments and businesses can jointly fight corruption by providing jobs for citizens and appropriately compensating them for their employment. The personal wealth created by employment and fair wages may result in less dependence on subsistence farming, better nutrition, and the opportunity for a better lifestyle including enhanced medical care and personal consumption possibilities. Such an enhanced lifestyle may lessen the temptation to gain money through corrupt means. For these benefits to accrue, however, governments will also have to adopt fiscal policies to control inflation. Enhanced individual wealth may also provide the benefits of additional government funding through income taxes of individuals.

Third, improved education opportunities for citizens may reduce corruption as students earn the qualifications for better-paying employment and possibly gain a greater understanding of the harmful effects of corruption. While, such opportunities may stem primarily from local governments, the importance of education is also a cultural issue, and improvements in education may only be garnered if local cultures consider education to be a priority.

As mentioned previously, issues of corruption may be best addressed as a package of integrated measures that incorporate each of the demand-side suggestions mentioned above as well as measures related to the supply-side of corruption. Piecemeal solutions or narrowly-focused legislative fixes that attempt to mitigate corruption through measures that address only a few of the salient issues may have a very limited impact on corrupt activities (Salbu, 1999). Additionally, these suggested changes in the demand-side environment of corruption may not yield observable reductions in corruption for several years; such solutions will most likely require a long-term focus.

Last, issues related to geography and culture are difficult to address as they relate to corruption. While this study found that corruption tends to be more likely in nations with warmer climates, practical solutions regarding corruption and geography may not be formulated without additional research. Similarly, culture is a very complex dimension of the supply-side of corruption, and practical suggestions for addressing corruption as it relates to culture are problematic and ill advised without more extensive research. An inappropriate suggestion based on the current study, for example would be that families in a certain nation should have fewer children because that reduction may reduce corruption. Several such issues are interwoven into the fabric of a nation's culture and should be studied extensively prior to any advice regarding corruption or other social ills.

Limitations, future research, and conclusion

Many in the global population are disgusted with corruption and its destructive effects, and policy-makers are feeling increasing pressure to find solutions (Hotchkiss, 1998). Care must be taken, however, to devise complementary, integrated strategies that counter corruption at all levels, including the demand side of corruption as well as the supply side (Marquette, 1999).

This study focused on the demand-side of corruption in an attempt to understand the salient issues associated those countries wherein demands for corrupt payments are prevalent. The CPI compiled

by TI was utilized in conjunction with several varied sources to investigate issues related to five categories of factors: government, economy and poverty, education, geography, and culture. Several factors in each category were found to be related to perceptions of corruption, and profiles of more corrupt and less corrupt nations were formulated. Broad strategies and solutions for alleviating corruption in relatively corrupt countries were also discussed.

While the current study found that geography and culture are related to corruption, the findings were limited to the degree that practical applications were not appropriate. A suggestion for future research regarding the demand-side of corruption is to examine these factors more thoroughly to try to understand how and why corruption is linked to geography and culture. One possibly relevant geographical factor, which was not considered in this study is the availability of natural resources. Additionally, a specific limitation of this study regarding the consideration of culture was the omission of religious faith as a potential cultural factor. Future research regarding corruption and culture may appropriately consider these and other salient factors.

Additional, complementary research may focus on the supply side of corruption or attempt to examine a combination of factors from both the supply- and demand-sides in examining international corruption.

As markets and businesses become increasingly global in nature, corruption remains a major impediment to the expansion of trade. Perhaps more importantly, however, corruption robs citizens of opportunities and a higher quality of life. Gaining a greater understanding of the supply-side of corruption is a helpful, initial process in working towards the development of integrated, global strategies to reduce corruption and thereby benefit all the world's citizens.

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