

THE NONLINEAR IMPACT OF GLOBALIZATION ON CORRUPTION

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ABSTRACT

Some researchers have argued that globalization has increased the opportunity for corrupt practices, while others state that globalization has led to a decrease in corruption as countries wishing to join the global economy must comply with international anti-corruption rules and regulations. This study empirically explores this paradox using the Corruption Perceptions Index (CPI) and the Konjunkturforschungsstelle (KOF) globalization Index. The results suggest that a nonlinear relationship exists between globalization and corruption. Specifically, the results of this study suggest that the effect of globalization on corruption is dependent on the level of globalization with the highest corruption levels realized at moderate or transitioning levels of globalization.

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KEYWORDS: globalization, corruption, KOF globalization index

INTRODUCTION

Globalization is multifaceted and involves the interaction beyond national borders, among businesses, services and governments. Recent technological progress has largely overcome distances while ideas and people have become more mobile. Nations are more interconnected and dependence among them has grown. Freidman (2005) affirmed that globalization is not a passing trend, describing it as an overarching umbrella under which most, if not all, countries and international systems currently operate. Further, Freidman (2005) notes that globalization has shaped foreign relations and affected domestic politics, culture, and the development of economic and social systems worldwide. Nevertheless, globalization has not been without controversy, especially regarding labor issues, environmental concerns and general social inequalities. Despite the arguments made against globalization, since the 1970s, the world has become increasingly economically, socially, and politically globalized (KOF Press Release, 2008) and, as Sung and Chu (2003) state, countries can no longer afford not to participate in the global economy as economic development is often a casualty of economic isolation.

An important outcome of globalization and the establishment of cross-country relationships has been the greater attention paid to the manner in which countries conduct their economic, social and political affairs. This focus has brought to light corrupt business and political practices prevalent within many cultures and societies. Identified at all levels of society, corruption affects both rich and poor nations. Tanzi (1998) defines corrupt practices as activities that are illegal, unethical, and dishonest business practices carried out by a bureaucracy, or by political leadership. Van Klaveren (1989) notes that corruption includes bribery among public officials and Klitgaard (1988) states that corruption can also occur as commercial bribery between two private parties. Further, much research has considered the causes and consequences of corruption. Specifically, Mauro (1995), Gastanga et al. (1998), Wei (1999), and Zhao et al. (2003), among others find that corruption distorts public policy and disrupts international trade and investment. Macrae (1982), Alam (1995), and Ades and Di Tella (1997 and 1999) state that corruption weakens good government, leads to the misallocation and inefficient use of resources, harms private sector development, distorts the rule of law, and weakens the institutions that are necessary for economic growth. The increases in globalization, however, have lead international organizations to call

for anti-corruption policies and more transparency in trade and transactions and existing research clearly suggests a link between corruption and globalization, which Holm and Sorenson (1995) define as the intensification of economic, social and political interaction across national boundaries.

Specifically, Gould (1991), Eisner (1995), and Jreisat (1997) argue that globalization has increased the opportunity for corrupt practices as the resulting trade relationships have put government officials and businesses into situations that foster corruption and Leiken (1997) and Elliott (1997) note that globalization has made the detection of corrupt practices more difficult. Alternatively, Williams and Beare (1999) and Sung and Chu (2003) state that globalization should act to decrease corruption as countries wishing to join the global economy must comply with the anti-corrupt policies of the World Trade Organization (WTO) and the International Monetary Fund (IMF), among other supranational entities. Thus, the research on globalization and corruption differs, as some argue a positive relationship and others a negative one.

If globalization can have positive and negative influences on corruption, past research assuming a linear relationship has allowed these two effects to compete with each other such that the estimated effect of globalization on corruption has a downward bias. The primary objective of this study is to resolve this paradox by relaxing the assumption that the relationship between globalization and corruption is linear. Specifically, it is hypothesized that globalization can have varying effects on country corruption levels, which are dependent on the country's level of globalization. To date, no prior study has considered the possibility of a nonlinear relationship, which can have important policy implications, especially for countries transitioning into the global economy.

The organization of the remainder of the paper is as follows. In Literature Review section that immediately follows, a more detailed discussion of the possible nonlinear relationship between corruption and globalization in addition to a description of the data measures used to proxy these two variables are provided. The next section, Data and Methodology, discusses the control variables and their data measures as well as the descriptive statistics on all data used in this study. A discussion of the regression analyses and the results follow in the Results section of the paper. Finally, the Concluding Comments section offers a summary of the research findings.

LITERATURE REVIEW

Corruption and Globalization: A Nonlinear Relationship

Researchers have argued that globalization and the growing openness among countries increases corruption by creating relationships that encourage corrupt practices in an attempt to stay competitive in an aggressive world of trade, commerce, ideas, service and information. Compounding this issue, Leiken (1997) and Elliott (1997) note, that globalization has made the detection of corrupt practices more difficult given the extensive use of electronic commerce and offshore financial centers. Glynn et al. (1997) state that rapid economic globalization causes corruption to spillover and permeate the global economy and Tornell and Lane (1998) find that the opportunities for corruption are greater as export shares of raw materials increase. Further, Williams and Beare (1999) note that there is much agreement that globalization has provided the impetus and opportunity for corrupt practices and has contributed to the growth and spread of corruption.

Alternatively, other researchers make the opposing argument that globalization reduces corruption levels. Specifically, Akhter (2004) states that with greater integration of trade and investments, domestic and international constituents will exert pressure on institutions to become more accountable and transparent, thus reducing the opportunities for corrupt behavior. Sung and Chu (2003) note that powerful supranational organizations have made a concerted effort to reduce corruption by requiring countries that

want to participate in the world economy to establish cross-border regulations and standards that include fiscal transparency, monetary policy, data dissemination, corporate governance, and accounting supervision. In a review of the IMF, OECD and World Bank policy statements, Williams and Beare (1999) summarize that these institutions have a clear desire for global economic governance and this hinges on two main principles of access and accountability. Thus, as Sung and Chu (2003) state, it is not involvement in the global economy that lowers corruption *per se*, but rather the participation in the global economy requires the regulation and oversight of the supranational institutions, which have clear anti-corruption targets and goals. In regard to empirical evidence, Ades and Di Tella (1997 and 1999), Brunetti and Weder (1998), Treisman (2000), and Herzfeld and Weiss (2003) find a negative relationship between openness, or percentage of imports, and corruption levels. Further, Golden (2002) provides evidence that as Italy became more globalized and integrated into the global economy, it experienced a decrease in corruption levels.

Clearly, the existing research suggests that globalization can have positive and negative effects on corruption levels. To date, however, empirical studies such as Shabbir and Anwar (2007) and Sung and Chu (2003), assume a linear relationship between corruption and globalization and, in doing so, they have not allowed for the possibility that globalization can have varying effects on corruption levels dependent on a country's level of globalization. In this study, it is hypothesized that a nonlinear or inverted U-shaped relationship exists between corruption and globalization. Specifically, it is argued that at lower levels of globalization, countries are not as regulated nor as well integrated into the global economy and, as these countries engage in the globalization process, their corruption levels initially increase. Newly formed trade relationships create opportunities for corrupt practices and emerging nations may be more likely to engage in corrupt practices in an effort to plunge ahead in the increasingly competitive global environment. Nevertheless, as countries continue to integrate into the world economy, they must comply with the anti-corruption policies of the supranational entities that require more transparency and accountability. If such an inverted U-shaped relationship exists between corruption and globalization, corruption levels reach their peak or threshold as countries transition from low to moderate levels of globalization and countries above and below the threshold level experience lower levels of corruption. If support for this relationship is found, many important policy implications for countries transitioning into the global community can be drawn. Using cross-country data and controlling for other factors known to affect country corruption levels, this study empirically tests this theory using regression analysis.

Measuring Corruption and Globalization

This study uses the Corruption Perception Index (CPI) created by Transparency International (2008) to proxy corruption. Transparency International defines corruption as the misuse of entrusted power for private gain and designed the CPI to measure the degree to which officials and politicians are believed to accept bribes, or illicit payments in public procurement, embezzle public funds, or commit offences. The CPI is a perceptual measure of corruption and is the most comprehensive quantitative indicator of cross-country corruption available. Despite some limitations noted by Husted (1999), the CPI has been used in a number of studies such as Treisman (2000), Davis and Ruhe (2003), Park (2003), Pelligrini and Gerlagh (2006), and Del Monte and Papagni (2007), among many others. Further, as Serra (2006) and Lancaster and Montinola (1997) state, no index or measure of corruption is perfect; however, the CPI is robust unlike other measures of corruption that are based on individual sources, such as Business International, International Country Risk Guide, World Bank index, and the World Competitiveness Report. The CPI is based on a continuous scale from 1 to 10 with 1 representing the highest perceived levels of corruption and 10 the least. As an example, in 2008, Denmark, New Zealand and Sweden each received a CPI score of 9.3, indicating that these three countries experience the lowest levels of corruption, while Somalia, Myanmar and Iraq received CPI scores of 1.0, 1.3 and 1.3, respectively, suggesting some of the greatest levels of corruption.

The Konjunkturforschungsstelle (KOF) index of globalization is used to proxy the degree to which a country is globalized. Following Clark (2000), Norris (2000) and Keohane and Nye (2000), the KOF defines globalization as "...the process of creating networks of connections among actors at multi-continental distances, mediated through a variety of flows including people, information and ideas, capital and goods" (KOF Report, 2008). The KOF conceptualizes globalization as a process that integrates economies, cultures and technologies and governance that erodes national boundaries and creates interdependent relationships (KOF Report, 2008). The KOF index is a broad measure of globalization as it considers a country's economic, social and political level of globalization. In reference to economic globalization, the KOF measures trade, foreign direct investment flows and stocks, tariff rates, and capital account restrictions, among other factors. The social dimension of globalization takes into consideration data on personal contact such as outgoing telephone traffic, international tourism and percentage of foreign population, as well as data on information flows and cultural proximity such as percentage of internet users, cable televisions, and radios and trade in books, and the per capita number of McDonald's restaurants and Ikea stores. Political globalization, the third dimension of the KOF index, accounts for the number of foreign embassies in a country as well as country membership in international organizations and participation in U.N. Security Council missions.

The KOF index of globalization is a weighted average of the three dimensions of globalization (economic, social and political) and ranges from 1 to 100 such that higher values indicate a greater degree of globalization. This measure has been used in many studies such as Dreher and Gaston (2007), Koster (2007), Tsai (2007), and Shabbir and Anwar (2007) to proxy the degree to which a country is globalized. In 2005, Austria, Sweden and Switzerland received some of the highest KOF index scores of 92.09, 91.38, 90.02, respectively, suggesting that these countries are highly globalized in comparison to Burundi and Myanmar, which received the lowest KOF index values of 22.41 and 27.4, respectively.

DATA AND METHODOLOGY

In order to examine the relationship between the corruption and globalization, it is necessary to control for the other socio-economic and institutional variables that past research has shown to affect a country's corruption levels. The following section summarizes these factors and includes a discussion of the data measures used to proxy the controls.

Democracy

As Seldadyo and de Haan (2006) state, there is a consensus that democracy serves to reduce corruption as political liberty imposes transparency and provides a system of checks and balances within a country's political structure. Persson and Tabellini (2003) and Kunicova and Rose-Ackerman (2005) also note that societies are better able to monitor and legally restrict politicians from engaging in corrupt behavior in democratic environments in which there is political participation and competition and constraints on the chief executive. Although there is much theoretical support for a negative relationship between corruption and democracy, the empirical results are mixed. Specifically, Ades and Di Tella (1999), Fisman and Gatti (2002), and Shabbir and Anwar (2007) fail to find a significant relationship between democracy and corruption, while Andvig et al. (2000), Braun and Di Tella (2004), Suphacahlasai (2005), Kunicova and Rose-Ackerman (2005), Lederman et al. (2005), and Goel and Nelson (2005) provide evidence of a negative relationship between democracy and corruption.

To measure the degree of democracy afforded to countries, the unweighted average of Political (PR) and Civil Liberties (CL) constructed by Freedom House (2005). As noted by Freedom House, political rights and civil liberties, while inextricably linked, consider different measures of democracy. Political rights largely refer to the freedom to organize in political parties or groupings, the existence of party competition, and the existence and fairness of elections. Alternatively, civil liberties refer to the freedoms afforded to the media, the right to open and free discussions, the freedom of assembly and religious

expression, the protection from political terror, and the prevalence of the rule of law. Based on survey results of experts, both indices are on a seven-point scale from one, most free, to seven, least free. Since both political rights and civil liberties measure important facets of democracy, an average of the two values is used for each country such that countries with lower average combined rating of political and civil rights (PRCL) represent higher levels of democratic freedom. Researchers such as Barro (1999) and Emerson (2006) often use this measure to proxy democracy and it correlates highly with other measures of democracy such as the Polity data series.

Economic Freedom

Frechette (2001), Knack and Azfar (2003), and Seldadyo and de Haan (2006) note that limited economic freedoms such as restrictions of foreign trade, foreign investment, and capital markets stimulate corruption as the presence of these restrictions provide opportunities for bribery and other corrupt practices. Broadman and Receanatini (2000, 2002) also show that corruption is more widespread in restrictive economic environments where firms face significant barriers to entry and exit. Goel and Nelson (2005), Kunicova and Rose-Ackerman (2005), Lederman et al. (2005), and Shabbir and Anwar (2007) among others provide empirical evidence that economic freedom is negatively related to corruption.

The 2005 Heritage Foundation's Index of Economic Freedom (EFI) is used to proxy economic freedom, which researchers such as Balamoune-Lutz (2003), Goel and Nelson (2005), and Quazi (2007) among many others use as a measure of the economic freedoms afforded to a country. The EFI considers 50 economic freedom variables that are divided into ten categories; trade policy, fiscal burden of government, government intervention in the economy, monetary policy, capital flows and foreign investment, banking and finance, wages and prices, property rights, regulation, and informal market activity. In calculating the EFI, each of the ten categories receives a score, and the average of these scores provide an overall economic freedom score between 0 and 100 such that higher scores represent more economically free countries.

Diversity

Collier (1998) finds that cultural and ethnic heterogeneity tends to hamper nation building and growth, while Mauro (1995) finds a negative correlation between ethno-linguistic fractionalization and political stability, bureaucratic efficiency, institutional efficiency, and corruption. Many researchers such as Shleifer and Vishny (1993), La Porta et al. (1998), Treisman (2000), Lederman et al. (2005), and Suphacahlasai (2005) provide evidence that corruption is lower in more ethnically and linguistically homogeneous societies.

While there is a consensus that higher corruption levels are associated with more ethnically and linguistically diverse societies, the research provides mixed results regarding the effect of religious diversity on corruption levels. Specifically, Treisman (2000), Herzfeld and Weiss (2003), and Chang and Golden (2004) find a negative relationship between corruption levels and the share of a population having affiliation with a particular religion, while La Porta et al (1998) and Paldam (2001) report a positive relationship, and Shabbir and Anwar (2007) fail to find a significant relationship between religious diversity and corruption.

Using the Fractionalization Index created by Alesina et al. (2003), this study controls for the ethnic, linguistic and religious diversity within a country. To create the index for each type of diversity, Alesina et al. (2003) employs the Herfindahl index methodology and the index represents the probability that two randomly selected individuals from a population belong to different groups. A measure close to zero implies a less diverse, or more homogenized society, and a value closer to one suggests the opposite.

Economic Development

As Seldadyo and de Haan (2006) state, income is the most commonly used factor to explain corruption levels and there is a strong consensus in the literature that wealthier countries tend to have lower levels of corruption. Studies such as Braun and Di Tella (2004), Chang-Golden (2004), Brown et al. (2005), Kunicova-R.Ackerman (2005), Lederman et al. (2005), and Shabbir and Anwar (2007) among many others offer empirical evidence of the negative relationship between wealth and corruption levels. Further, Treisman (2000) and Paldam (1999) find that the most significant determinant of corruption is economic development, which is typically measured in real GDP per capita.

Following these studies, economic development is controlled for in this study using the 2005 GDP per capita (measured in constant 2000 U.S. dollars), which is available from the World Bank. GDP per capita is a widely accepted measure of economic development and is commonly employed in analyses that control for differences in income and standard of living across countries.

Descriptive Statistics

To test the hypothesized nonlinear relationship between country corruption levels and globalization using a regression analysis, this study employs data from a sample of 113 countries. Table 1 provides a summary of the data used in this analysis as well as the descriptive statistics for each variable. *CPI* represents 2008 data and the control variables are lagged as their affect on *CPI* cannot be expected to occur immediately. Specifically, *Global*, *PRCL*, *EFI* and *LnGDP* per capita represent 2005 data and *E*, *L*, and *R* represent 2003 data, which are the most recent data available for this measure of diversity.

Table 1: Variable Summary and Descriptive Statistics

Variable	Proxy (Name, Year Reported)	Mean	Standard Deviation	<i>n</i>
Corruption	Corruption Perception Index (CPI, 2008)	4.57	2.21	113
Globalization	KOF Index of Globalization (Global, 2005)	59.81	15.88	113
Democracy	Freedom House (PRCL, 2005)	2.75	1.73	113
Economic Freedom	Index of Economic Freedom (EFI, 2005)	61.67	9.50	113
Ethnic Diversity	Ethnic Fractionalization Index (E, 2003)	0.45	0.26	113
Linguistic Diversity	Linguistic Fractionalization Index (L, 2003)	0.38	0.29	113
Religious Diversity	Religious Fractionalization Index (R, 2003)	0.44	0.24	113
Economic Development†	GDP per capita (LnGDPPC, 2005)	8.07	1.61	113

†A series of scatter plots and preliminary regression analyses indicated that the relationship between CPI and GDP per capita is best described as linear in the log of GDP per capita. The proxy for corruption is the Transparency International’s CPI data that measures the perceived level of corruption within a country. The KOF Globalization Index measures a country’s level of economic, social and political level of globalization. The remaining variables are control variables. Specifically, the average of the Political Rights and Civil Liberties indices provided by Freedom House proxy country-level democracy and Heritage Foundation’s Index of Economic Freedom measures the degree to which a country enjoys economic freedoms. The Fractionalization Indices created by Alesina et al. (2003) measures ethnic, linguistic and religious diversity. Finally, GDP per capita, which is available from the World Bank proxies the level of economic development.

Table 2 provides the correlation matrix for all of the variables. The Jacque-Bera test was used to test the normality of each of the variables, and at 95% confidence *CPI*, *PRCL*, *E*, *L* and *R* were all found to be non-normal. Given that one of the assumptions for the Pearson measure of correlation is normality, the

Spearman rank correlation is used to measure the correlation with these variables and the Pearson measure is used only between pairs of variables found to be normal (*Global*, *EFI* and *LnGDP* per capita).

Table 2: Correlation Matrix

	CPI	Global	PRCL	EFI	E	L	R	LnGDPPC
CPI	1							
Global	0.77***	1						
PRCL	-0.73***	-0.66***	1					
EFI	0.83***	0.62***	-0.68***	1				
E	-0.53***	-0.58***	0.48***	-0.36***	1			
L	-0.36***	-0.40***	0.33***	-0.30***	0.68***	1		
R	-0.02	-0.09***	0.04	0.12	0.29***	0.32***	1	
LnGDPPC	0.86***	0.82***	-0.65***	0.73***	-0.59***	-0.47***	-0.10	1

This table presents the estimated correlation coefficients between corruption, globalization and the remaining control variables. ***, ** and * indicate significance at the 1, 5 and 10 percent levels, respectively.

As seen in Table 2, *CPI* is positively and significantly correlated with *Global*, *EFI*, and *LnGDP* per capita, which suggests that countries with lower levels of corruption tend to be more globalized and enjoy greater levels economic freedom and development, as lower levels of corruption are associated with higher *CPI* values. Further, *CPI* is negatively and significantly correlated with *PRCL*, *E*, *L*, and *R*, indicating that countries with lower levels of corruption tend to be more democratic and more ethnically, linguistically, and religiously homogeneous.

RESULTS

Two separate regression models are estimated to test the possible nonlinear relationship between corruption and globalization. The first regression, Model 1, is a regression of control variables and *Global* on *CPI*, is defined as:

$$CPI = \beta_0 + \beta_1 Global + \beta_2 PRCL + \beta_3 EFI + \beta_4 E + \beta_5 L + \beta_6 R + \beta_7 LnGDPPC + \varepsilon \tag{1}$$

As shown in Table 3, the regression results provide support for Model 1 with an Adjusted R^2 of 0.83 and a significant F at the 99% significance level. Further, White's (1980) general test for heteroscedasticity provides evidence that the residuals are homoscedastic. In reference to the coefficient estimates, with the exception of *PRCL* and *R*, all of the control variables are significant. Given the mixed results in past research regarding the relationships between democracy and corruption as well as religious diversity and corruption, the insignificant results are not surprising. Of the significant variables, all variables have the expected sign with the exception of *L*. The positive coefficient on *L* indicates that linguistically diverse countries tend to have lower corruption levels, while previous research suggests that ethnic and linguistic diversity should both serve to increase corruption levels. Nevertheless, linguistic diversity does have beneficial effects as a more linguistically diverse population can yield a more talented human capital pool that can work to reduce corruption.

Table 3: Regression Results Model 1: Dependent Variable: CPI

	Coefficient Estimate	Std Err	t Stat	
Intercept	6.72843	0.89747	-7.50**	<.0001
Global	0.03193	0.01002	3.19**	0.0019
PRCL	-0.06044	0.06659	-0.91	0.3662
EFI	0.10459	0.01482	7.06**	<.0001
E	1.17141	0.51986	-2.25*	0.0263
L	1.07891	0.41614	2.59*	0.0109
R	0.00531	0.39581	0.01	0.9893
LnGDPPC	0.39843	0.11641	3.42**	0.0009

Adj. $R^2 = 0.8359$ F stat = 82.50** This table presented the results from Regression Model.

(1) $CPI = \beta_0 + \beta_1 Global + \beta_2 PRCL + \beta_3 EFI + \beta_4 E + \beta_5 L + \beta_6 R + \beta_7 LnGDPPC + \varepsilon$. ***, ** and * indicate significance at the 1, 5 and 10 percent levels, respectively.

Interestingly, the sign on *Global* is positive, which suggests that globalization has an overall negative, linear effect on corruption. In other words, when a linear relationship is assumed between globalization and corruption and other factors known to effect corruption are controlled for, the effect of globalization on corruption is negative, implying that the effects of the anti-corruption policies of the supranationals outweigh the increased opportunities for corruption that are provided through globalization. This overall negative effect of globalization on corruption has also been found in Sung and Chu (2003) and Shabbir and Anwar (2007). Given the support for the baseline model, a second regression (Model 2) that includes $Global^2$ as an explanatory variable, is defined as:

$$CPI = \beta_0 + \beta_1 Global + \beta_2 Global^2 + \beta_3 PRCL + \beta_4 EFI + \beta_5 E + \beta_6 L + \beta_7 R + \beta_8 LnGDPPC + \varepsilon \quad (2)$$

A partial F test indicates that $Global^2$ adds explanatory power to the model, and, as shown in Table 4, the Adjusted R^2 increases to 0.86. Further, White’s (1980) general test for heteroscedasticity provides evidence that the residuals are homoscedastic and, in reference to the control variables, there are no significant changes between Model 1 and 2. Most importantly, the sign on *Global* changes from positive to negative and the coefficient on $Global^2$ is positive and both coefficients are significant. These results establish the existence of a nonlinear relationship between country corruption levels and the degree of globalization, even after controlling for other factors known to affect corruption. Specifically, these results suggest that as countries begin to globalize their corruption levels initially increase as the newly formed trade relationships create new opportunities for corrupt practices; however, as countries continue integrate into the world economy, they face increased regulation by the anti-corruption policies of the supranationals, forcing their corruption levels to fall. Thus, the highest corruption levels are realized at a moderate or transitioning level of globalization.

To explore this finding further, the estimated *CPI* values are calculated using the estimated regression results and evaluating all of the independent variables at their means with the exception of *Global*. Figure 1 illustrates the estimated values of *CPI* against the *Global* values included in the data set.

By taking the first derivative of the estimated regression equation with respect to *Global* and solving the first order condition, the result is that countries with *Global* values of approximately 52.94 are estimated to have the lowest *CPI* values, or highest estimated corruption levels, holding economic development, economic and democratic freedoms, and diversity levels constant. Examples of countries with *Global* values close to this transitioning break point are Paraguay (51.37), Pakistan (51.79), Columbia (52.66), and Ghana (53.35), which have low *CPI* values of 2.4, 2.5, 3.8, and 3.9, respectively, suggesting

relatively higher corruption levels. At the low end of the globalization scale, Botswana and Barbados are examples of countries with relatively low *Global* values of 43.06 and 46.68, respectively that also have higher *CPI* values of 5.9 and 7, indicating lower corruption levels. While these countries are more closed and enjoy lower corruption levels, countries such as Belgium, Austria, and Sweden are highly globalized with *Global* values of 92.09, 91.38, and 90.02, respectively, and also enjoy lower corruption levels with high *CPI* values of 7.3, 8.1, and 9.3, respectively.

Table 4: Regression Results Model 2: Dependent Variable: CPI

	Coefficient Estimate	Std Err	t Stat	
<i>Intercept</i>	-1.35582	1.38433	-0.98	0.3297
<i>Global</i>	-0.15459	0.03988	-3.88**	0.0002
<i>Global</i> ²	0.00146	0.00030428	4.80**	<.0001
<i>PRCL</i>	-0.06028	0.06053	-1.00	0.3217
<i>EFI</i>	0.10136	0.01349	7.52**	<.0001
<i>E</i>	-1.25552	0.47288	-2.66**	0.0092
<i>L</i>	0.86690	0.38084	2.28*	0.0249
<i>R</i>	-0.00390	0.35980	-0.01	0.9914
<i>LnGDPPC</i>	0.46173	0.10663	4.33**	<.0001

Adj. R² = 0.8644 F stat = 90.25*** This table presented the results from Regression Model

(2) $CPI = \beta_0 + \beta_1 Global + \beta_2 Global^2 + \beta_3 PRCL + \beta_4 EFI + \beta_5 E + \beta_6 L + \beta_7 R + \beta_8 LnGDPPC + \varepsilon$. ***, ** and * indicate significance at the 1, 5 and 10 percent levels, respectively.

Figure 1: Estimated CPI and Globalization

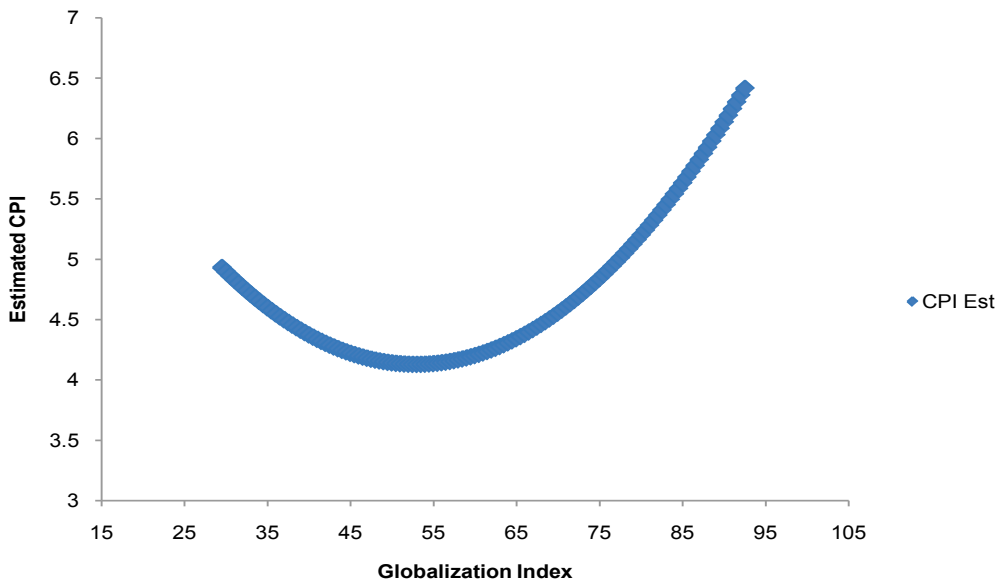


Figure 1 presents the estimated CPI values against the *Global* values included in the data set. The estimated CPI values are calculated using the results from Regression Model (2): $CPI = \beta_0 + \beta_1 Global + \beta_2 Global^2 + \beta_3 PRCL + \beta_4 EFI + \beta_5 E + \beta_6 L + \beta_7 R + \beta_8 LnGDPPC + \varepsilon$

It is important to note, however, that a country with a *Global* value of approximately 52.94 will not necessarily have a low *CPI* score and countries with exceptionally low or high *Global* values will not necessarily have a high *CPI* score, as the other control variables also play an important role in determining a country's corruption levels. For example, Mauritius has a *Global* value of 52.35 and a more moderate *CPI* value of 5.5, but it also enjoys a relatively higher level of economic development and freedom compared to other transitioning countries mentioned above. Further, on the lower end of the globalization scale, Guinea-Bissau has a *Global* value of 33.11 and a low *CPI* value of 1.9, but it also has a considerably lower level of economic development and freedom relative to many other countries with similar *Global* values. Thus, when assessing a country's corruption level, it is important to take into consideration all factors that influence corruption levels in addition to its level of globalization. Overall, the results of this study strongly suggest that the relationship between globalization and corruption is nonlinear such that the effect of globalization on corruption levels is dependent on the level of globalization, and thus offers an explanation to the paradoxical relationship described in the existing literature.

CONCLUDING COMMENTS

Globalization has brought a greater attention to the manner in which countries conduct their economic and governmental affairs and the degree of corruption inherent in a country's economic and political systems. Past research has noted that with globalization there are increased opportunities for corrupt practices; however, there are also strong anti-corruption policies and regulations that countries must adhere to if they want to become active participants in the world economy. To date, research has assumed a direct, linear relationship between the two, forcing the positive and negative effects of globalization on corruption to compete with each other. This study relaxes this linear assumption and allows for the effects of globalization on corruption to vary depending on the level of globalization. By identifying a significant nonlinear relationship between globalization and corruption, the major contribution of this study resolves the paradox presented in past research. Specifically, the findings suggest that globalization has a positive and negative effect on corruption, which depends on the globalization level of the country.

The results of this analysis such that the highest corruption levels are realized at moderate or transitioning levels of globalization, even after controlling for other factors known to affect corruption levels. Theoretically, at lower levels of globalization, there is less opportunity for corrupt practices, but as countries become more globalized, the newly formed trade relationships create new opportunities for corruption. The urge for emerging economies such as China and Russia to catch up and compete in the global arena may encourage illicit and illegal transactions. Nevertheless, as countries continue to integrate into the world economy, they face increased regulation by the anti-corruption policies and the act of becoming more globalized exposes the market inefficiencies in transactions and forces corruption levels to fall.

It is important to note that countries transitioning into the global economy will not necessarily have high corruption levels as the other factors such as economic and democratic freedoms, economic development and diversity affect a country's corruption levels. Nevertheless, this study's main finding has important implications for policy makers. Specifically, leaders and policy makers of countries that are beginning the globalization process need to be aware of the increased opportunities for corrupt practices in newly formed relationships and take action to reduce the incentives for corrupt behaviors. Further, these leaders should also recognize that while the supranational entities have strong anti-corruption policies in place, in the early stages of globalization, the results of this study suggest that these policies are not strong enough to prevent increases in corrupt practices. In summary, corruption is a global problem that will take the concerted efforts of all countries, policy makers and leaders to curtail it and the results of this study suggest that countries transitioning into the global community face the greatest concerns for corrupt practices.

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