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Government Regulations of Business, Corruption, Reforms, and the Economic Growth of Nations

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Abstract

The present study examines the following claims: (1) nations with more versus less rules nurture growth in corruption, (2) nations with lighter versus heavier rules exhibit lower levels of corruption, (3) lighter versus heavier rules relates to larger formal economies. Using data from the *Doing Business* annual reports, Transparency International (TI), and national GDP per capita data, the study examines lagged relationships of the three claims. The first claim is bunk: no significant negative relationship occurs for the levels of rules for nations and the growth of corruption. The evidence supports the second claim: nations with the lightest regulations of business exhibit lower levels of corruption, though both the levels of regulation and corruption may be outcomes of GDP growth rather than changes in regulation influencing changes in corruption. The evidence supports the third claim: nations with lighter versus heavier rules have larger formal economies, but economic growth may be the cause of lighter rules rather than the reverse or both the weight of rules and the size of economies may co-vary due to configurations of other conditions. The study presents evidence that growing corruption versus little change in corruptions relates to increases in GDP for nations low in competitiveness. The key conclusion is that *The Economist's* claim "Bad rules breed corruption. Cutting them costs nothing" is inaccurate and misleading. Additional research is necessary that identifies bad rules and their impact; cutting government rules of business can be extremely costly sometimes, as the Financial Crisis Inquiry Commission Report of the 2008–2009 financial meltdown indicates.

Key words: Business; corruption; GDP; government regulation; reform

JEL classification: F43

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The claim appears frequently in the United States that government regulations stifle business growth. President Ronald Reagan (1982) championed the claim, "An essential part of this administration's program for economic recovery is revising or eliminating Federal regulations that place needless burdens on people, businesses, and State and local governments. As we strive to control taxing and spending, we must also cut back government regulations that are anticompetitive, excessively stringent, or just plain unnecessary." President Reagan's actions matched his rhetoric.

Consequently, the causal chain of events in the recent financial worldwide meltdown includes the extreme deregulation of the US financial industry, beginning with Ronald Reagan's (1981–1989) ending of effective government regulatory agencies. The US Financial Crisis Inquiry Commission (FCIC) reported its findings in January 2011 that "the crisis was avoidable and was caused by: widespread failures in financial regulation, including the Federal Reserve's failure to stem the tide of toxic mortgages; dramatic breakdowns in corporate governance including too many financial firms acting recklessly and taking on too much risk; an explosive mix of excessive borrowing and risk by households; and Wall Street that put the financial system on a collision course with crisis; key policy makers ill prepared for the crisis, lacking a full understanding of the financial system they oversaw; and systemic breaches in accountability and ethics at all levels" (FCIC, 2011).

Robert Brent Toplin is Professor of History at the University of North Carolina, Wilmington, and the author of a dozen books including Radical Conservatism: The Right's Political Religion (2006). He offers evidence supporting the observation of highly effective national, unconscious, incompetency training. According to Toplin (2006), as the country's greatest modern champion of deregulation, perhaps Ronald Reagan contributed more to today's unstable business climate than any other American. His long-standing campaign against the role of government in American life, a crusade he often stretched to extremes, produced conditions that ultimately proved bad for business.

> Recent troubles in the American economy can be attributed to a weakening of business regulation in the public interest, which is, in large part, a consequence of Reagan's anti-government preaching. In the absence of oversight, lending became a wildcat enterprise. Mortgage brokers easily deceived home buyers by promoting subprime loans, and then they passed on bundled documents to unwary investors (Toplin, 2008, p. 1).

Executives at Fannie Mae packaged both conventional and sub-prime loans, and they too, operated almost free of serious oversight. Reagan deserves credit for serving as a vigorous defender of free markets, but he carried the idea to extremes. Ironically, the great champion of business enterprise advocated policies that have seriously hurt business here and abroad (Toplin, 2008).

However, the findings of the FCIC (2011) and historians such as Toplin (2008) do not appear to dampen the continuing claims that government regulations serve mainly to harm business. *The Economist*'s (2012a) "Getting Better" reports on the

release of the International Finance Corporation (IFC) and the World Bank Doing Business 2013 findings of rankings of all countries globally by amount and quality of government regulations, "… the countries that score well [in economic prosperity] are not those with no regulations at all—Somalia is a fearsome place to do business—but places where rules are simple and designed to make markets work better. The top 20 list includes the usual suspects: Singapore, Hong Kong, the Nordic countries, America. But less obvious countries are there too: Georgia, Malaysia, and Thailand" (*The Economist*, 2012a, p. 69).

The present study provides additional analysis to *The Economist's* (2012a) examination of data from the IFC and perceived levels of corruption as Transparency International (e.g., 2011) reports. *The Economist* (2012) shows an X-Y scatter plot with Y being "Corruption perception index rankings [actually ratings from 0.0 to 10.0], 2011, 1 = best" and X being "Ease of doing business ranking, 2012, 1 = best." The report refers to the visual in making the following claim:

> As the chart shows, the more rules impede business, the more incentive businessfolk [sic] have to bribe them away. Lighter rules mean less *baksheesh*. They also mean a larger formal economy and a wider tax base (*The Economist*, 2012a, p. 69).

However, both the chart and the claim are inaccurate since 2012 country rankings of government regulations of business can have no impact on 2011 corruption perceptions and the chart does not refer to business levels but to the association of corruption perceptions and competitiveness—competitiveness measured by country rankings of amount and quality of regulations.

The study tests four claims made by *The Economist* (2012a). First, "onerous rules breed corruption." Second, "more rules impede business." Third, "[lighter rules] mean a larger formal economy." Fourth, "the Doing Business rankings seem to have spurred reform. In 2005 only a third of countries in sub-Saharan Africa were reforming; now over two-thirds are."

The evidence does not support the view that the level of government regulations breeds corruption. For most comparisons, the level of government regulations does not influence changes in corruption. However, an exception occurs: the findings indicate lighter government regulations in 2007 nurtured increases in corruption in 2008 more so than heavier levels of government regulations—a finding directly opposite to the first claim but a finding that relates to the findings in the FCIC (2011) report of growing corruption in business during most of the 2000s in the US—a country with a relatively light level of government regulations of business.

Following this introduction, Section 2 states formal hypotheses that reflect the claims made by *The Economist* (2012a). Section 3 provides a brief review of relevant literature. Section 4 offers details of the method and data analyses for the present study. Section 5 presents the findings. Section 6 concludes with a summary, limitations, and implications for theory and future research.

2. Hypotheses

Hypothesis H_1: Corruption growth is lower versus higher in countries judged to have fewer and government regulations preferred by business. *The Economist* (2012a) uses "breed" as a verb; this verb is the dynamic concept that refers to raise, nurture, or propagate. The rationale is that more regulations and regulations business executives dislike generate greater baksheesh (i.e., bribes, kickbacks, and additional forms of corruptions).

Hypothesis H_2: More versus less business regulations impede business growth. The rationale is that regulations are often a form of red tape that causes delays and regulations frequently prevent business transactions from occurring at all. "Government is blocking progress" summarizes this perspective.

Hypothesis H_3: Less versus more business regulations means larger versus smaller formal economies. H_3 is a static version of H_2. For H_3, less versus more business regulations is a prerequisite for having a big versus small economy. The rationale is that H_3 is the end result of H_2; a nation is big economically only after experiencing years of few versus many regulations.

3. Research and Theory on Business, Regulations, and Corruption

Corruption is a frequent occurrence in international business and there is still no agreement on the trend in the impact of corruption in theoretical and empirical studies (Barassi and Zhou, 2012). Shleifer and Vishny (1993, p. 599) define government corruption as the sale by government officials of government property for personal gain. Treisman (2000, p. 399) offers an overly restrictive definition of corruption as "the misuse of office for private gain." Uhlenbruck et al. (2006, p. 403) use a simple definition of corruption that accords with the view of the abuse (or misuse) of public power for private benefit. The following broad definition is more inclusive: "In philosophical, theological, or moral discussions, corruption is spiritual or moral impurity or deviation from an ideal" (Wikipedia, 2012). Corruption entails many forms including bribery, theft, lying, blackmail, embezzlement, nepotism, cronyism, exploiting conflicting interests, abuse of discretion, and additional abuses. Cole et al. (2009) argue that corruption should not be considered in isolation as it associates strongly with the quality of government. Additional views indicate that corruption is a mix of both legal and moralistic perspectives (Bull and Newell, 2003; Treisman, 2000).

For the present study, corruption is operationalized to be a country's "Corruption Perception Index (CPI)" score from Transparency International (e.g., 2006 to 2011) reports; the scores range theoretically between 10 (highly clean) and 0 (business transactions are dominated entirely by kickbacks, extortion, bribery, conflicts of interest, and/or other abuses). The index is a "poll of polls that is prepared from seven sources. Wilhelm (2002) provides details on the contents of the index and examines its validity; he concludes that the scale has high validity.

The relevant literature indicates that the relationship between competitiveness, corruption, and national economic well-being are not clear-cut. Bardhan (1997, p. 1322) observes: "There is a strand in the corruption literature, contributed both by economists and non-economists, suggesting that, in the context of pervasive and cumbersome regulations in developing countries, corruption may actually improve efficiency and help growth." Brouthers et al. (2008) propose that corruption may affect the size of the potential market or overall market attractiveness. In some instances, nations scoring high in competitiveness (e.g., low in cumbersome regulations) enter brief (5+ years) periods of rapid increases in corruption coupled with continuing economic growth (e.g., Iceland and the United States during 2005–2007; see FCIC, 2011). Of course, on a personal basis (e.g., Bernard L. Madoff) corruption can cover decades and entire professional careers (Markopolos, 2011).

Consequently, Mauro's (1995) keen insights are extendable. Mauro (1995) finds that several factors correlated positively and significantly with country corruption including efficiency and integrity of the legal environment, bureaucracy and red tape, and terrorism among others. A number of mechanisms may contribute to explaining the positive correlation of institutional efficiency. Corruption may be expected to be more widespread in countries where red tape slows down bureaucratic procedures (Mauro, 1995, p. 685). Reiter and Steensma (2010) indicate that corruption associates with FDI inflow and economic development. Barassi and Zhou (2012) also suggest that corruption can be an efficient "lubricant" for rigid economic regulation and red tape for international business operating in developing countries. This perspective is extendable in that, in some cases (countries) for some time periods, some of these configurations (i.e., mechanisms) are counter-intuitive and result in negative outcomes—such as financial and economic meltdowns. For example, the elimination of effective government regulations might serve to increase corruption, leading to increases in economic growth in the short term followed by a meltdown in a national economy.

Thus, the following conclusions by Mauro (1995, p. 685–686) need elaboration. "The fact that all categories of country risk tend to move together is an interesting result. At the same time this multi-collinearity makes it difficult it difficult to tell which of the several institutional factors examined is crucial for investment and growth. As a consequence, it may be desirable to combine groups of variables into composite indices." The elaboration of Mauro's perspective includes the point that counter-intuitive cases almost always occur; that is, unexpected or unplanned configurations (mechanisms) occur for recipes of simple antecedent conditions for some countries. Also, no one factor is "crucial"—that is, sufficient—for causing an investment or growth outcome.

Consequently, rather than taking a net effects approach (e.g., via multiple regression analysis), an examination is necessary of multiple configurations among likely relevant simple antecedent conditions—to learn instances when competitiveness helps to increase corruption in combination with low or high scores on other factors and when competitiveness helps to keep corruption in check in causal recipes with other antecedent conditions (cf. Ragin, 2008). Interestingly,

Mauro (1995) is aware that the configurations of factors—his "mechanisms"—affect economic outcomes rather than individual factors. The perspective that certain combinations for certain countries results in perverse, seemingly unintended, outcomes builds on this awareness.

The conclusion from this discussion is that economists, psychologists, financial, and marketing researchers need to adopt the use of case-based algorithms in data analyses of large samples. The use of statistical hypothesis testing using multiple regression analysis is insufficient for gaining clear understanding and accurate predictions of scores for counter-intuitive cases and holdout samples—a point made most clearly by McClelland (1998).

4. Method

For this study data on the reforms by nation and national competitiveness rankings come from the annual World Bank DB studies for 2007 to 2012. These reports are available online (e.g., World Bank DB, 2012).

4.1 Growth Domestic Product Data

Data for annual GDP (PPP) per capita are available from the annual Central Intelligence Agency (CIA) World Factbook (2012).

The study applies the DB operational metric for competitiveness—the national overall DB rankings appearing in the annual reports. DB 2012 reports a high correlation (0.82) between the rankings on the ease of doing business and those on the World Economic Forum's Global Competitiveness Index (2012–2013), a much broader measure capturing such factors as macroeconomic stability, aspects of human capital, the soundness of public institutions, and the sophistication of the business community.

4.2 Reform Measures

The analyses include examining annual data and reducing noise in the data by summing the number for reforms—both negative and positive—introduced by nations in the DB reports for 2007–2009 and 2010–2012. The annual changes in GDP (PPP) per capita are also calculated for 2012 versus 2009, 2012 versus 2010, and 2012 versus 2011. The analyses for these three time periods provide similar findings.

4.3 Corruption Perception Index Data from Transparency International

The following details about the CPI for 2011 come from Transparency International (2011). The 2011 CPI draws on 17 data sources from 13 institutions. The information used for the 2011 CPI is survey data from these sources gathered between December 2009 and September 2011. The CPI includes only sources that provide a score for a set of countries/territories and which measure perceptions of corruption in the public sector. TI ensures that the sources used are of the highest

quality. To qualify, the data collection method must be well-documented and the methodology published to enable an assessment of its reliability. For a full list of data sources, questions asked, and the type of respondents for each country/territory, please see the CPI sources description document.

Countries/territories are only included in the index when three or more of the data sources assess the country/territory in question. When less than three data sources are available, countries cannot be included in the index. Due to the availability of country-level data, North Korea, the Bahamas, St. Lucia, St. Vincent and the Grenadines, and Suriname entered the index in 2011.

4.4 Analyses

As well as adopting interrupted time series (Campbell, 1969), algorithmic (McClelland, 1998), and case study (Woodside, 2010) perspectives to analyzing data, the present study examines the lagged relationships for the number of reforms in regulating business introduced during 2007–2009 on changes in GDP during 2009–2012. The analyses in the present study apply Armstrong's (2012), McClelland's (1998), and others' (Soyer and Hogarth, 2012) wisdom that many relationships are not linear and they are not described well by correlation coefficients and regression analysis. (For an analysis of linear relationships of cultural antecedents of national corruption, see Davis and Ruhe, 2003). Signal versus noise (Silver, 2012) in relationships often becomes clear only for cases above versus below a substantial mid-range of values in one or a configuration of dependent variables (Fitzsimmons, 2008; McClelland, 1998)—the occurrence of "tipping points" (Gladwell, 1996) in relationships is frequently found but requires theory-based searching.

Using some of same data, Woodside and Zhang (2012) include findings supporting the occurrence of positive-lagged relationships between the number of reforms introduced and growth in GDP. The data analyses include estimating cross-lagged correlations for competitiveness, corruption, reforms, and GDP. Hooker (1901) and others (Cook and Campbell, 1979; Crano et al., 1972; Kahle and Berman, 1979) suggest the use of cross-lagged panel analysis to shed light on the relative magnitude of causality: if factor A (e.g., competitiveness) is a strong cause of factor B (e.g., corruption), then it may be expected that correlation r_{A1B2} is not equal to r_{B1A2}, where A and B are measured in time periods 1 and 2. Cook and Campbell (1979, p. 317) warn that inferring cause from passive (i.e., non-manipulated) observations should be approached with skepticism; however, they conclude that "It is our overall experience that statistically significant differences and differences of interesting magnitude are very rare. The method has in this sense been conservative in contribution causal laws."

5. Findings

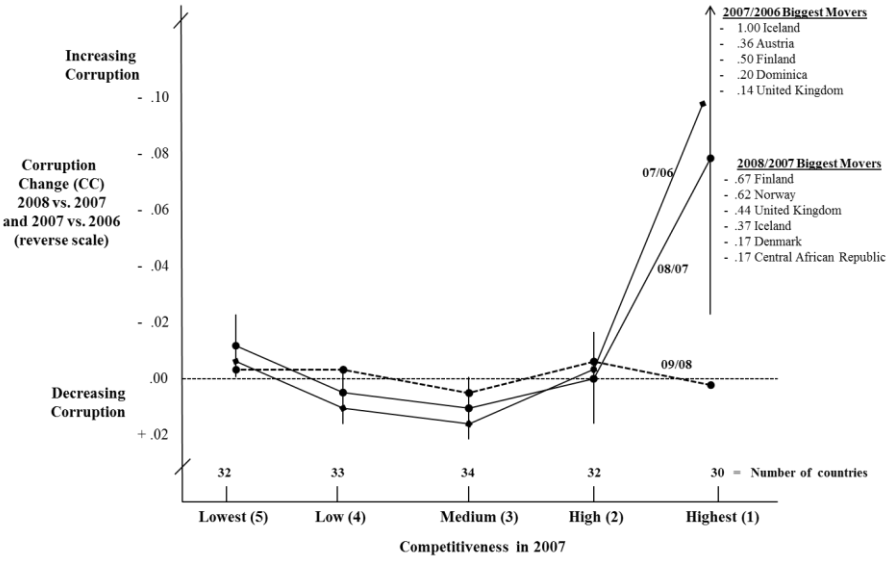
5.1 Competitiveness and Changes in Corruption

The findings do not support H_1. For 2006 and 2007, corruption growth was actually higher in countries judged to have fewer and government regulations preferred by business versus countries less competitive—using the perspective in the Doing Business reports that countries with less versus more regulations of business are more competitive.

Corruption growth is a dynamic concept. The metric for change in corruption in the present study is the annual change in a country's CPI divided by the change possible. For example, an annual change from 7 to 9 on the CPI represents a more substantial improvement (i.e., decrease in corruption perception) than an annual change of 1 to 4, given that 10 is the maximum value of the CPI: $(9-7)/(10-7) = 2/3 > 1/3 = (4-1)/(10-1)$. (Using the simple annual change in CPI does support H_1 for 2006 and 2007.)

To control for noise in the data, Figure 1 includes CPI changes by quintiles for 2006 and 2007 and reports the changes in CPI for the countries experiencing the biggest changes. The change estimates support and extend the findings of the FCIC (2011) and Toplin's (2011) historical analysis that corruption grew dramatically in some highly competitive countries during 2006 to 2008. For the CPI in 2006 and 2007, the 95% confident interval for the average change among the countries highest in competitiveness (quintile 1) is above the averages for the other four quintiles.

Figure 1. Lowest to Highest (Least Regulatory) Competitiveness and Corruption Change (CC) for 2007 to 2008 with 95% Confidence Vertical Lines for the Averages for 2008/2007



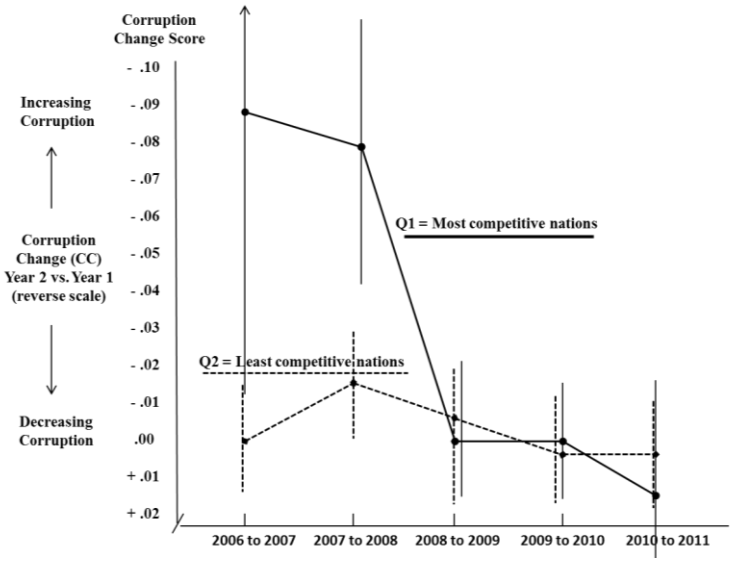
Notes: $CC = (\text{Corruption}_{2008} - \text{Corruption}_{2007}) / (10 - \text{Corruption}_{2007})$; $F(4,156) = 3.86$, $p < 0.005$, $\eta^2 = 0.09$.

However, the standard errors of the CPI mean for the first quintile (highest competitiveness) are abnormally large in 2006 and 2007 in comparison to the other

quintiles or in comparison to later years (see Figure 2). Twenty percent of the countries in quintile 1 account for the significant shift toward greater corruption. Figure 2 shows that shifts toward greater corruption among quintile 1 countries ended after 2008. At least for 2008–2011, the changes in corruption are not significant statistically among countries across the five quintiles.

From a case study perspective, the dramatic decline in government regulation of business in combination with the increase in corruption in Iceland is noteworthy in particular. *Inside Job* (2010), the 2011 Oscar winning documentary of the 2007–2010 financial and economic meltdown begins by summarizing the details of Iceland's dramatic decline in regulations, increase in corruption, short-term increase in GDP, and reversals in all three during this period.

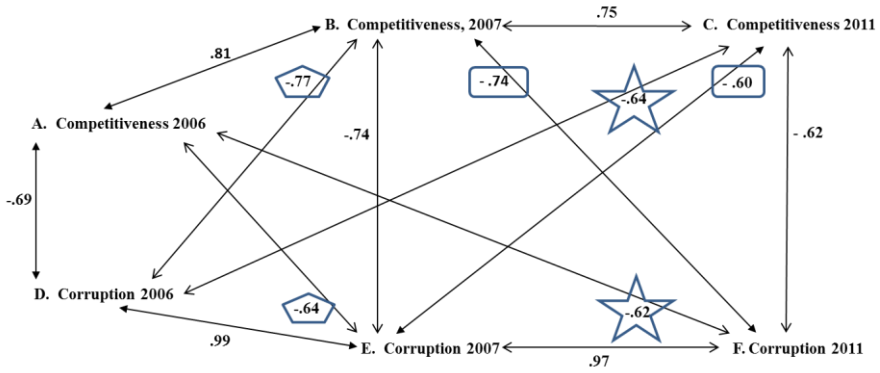
Figure 2. Average Corruption Change Observed-to-Possible Change (CC) for Highest and Lowest Competitiveness Quintile: CC = (C_{Y2} – C_{Y1}) / (10 – C_{Y1}) with 95% Confidence Intervals



Notes: C = corruption; Y2 = year 2; Y1 = year 1; scale = 10 is least corrupt and 1 is most corrupt.

Figure 3 indicates that the patterns of differences in the cross-lagged correlations of competitiveness and corruption are significant statistically but inconsistent. The first cross-lagged correlation comparison indicates that Corruption_{2006} has a stronger association with $\text{Competitiveness}_{2007}$ than the reverse (−0.77 vs. −0.64). This pattern reverses for 2007 and 2011: $\text{Competitiveness}_{2007}$ has a stronger association with Corruption_{2011} than the reverse (−0.74 vs. −0.60). The more distant-in-time cross-lagged relationships (i.e., the stars) in Figure 3 do not break the tie but indicate statistically equal relationships between competitiveness and corruption.

Figure 3. Cross-Lagged Correlations of Competitiveness and Corruption



Notes: For DB rankings lower numbers indicate higher competitiveness. All tests were two-sided.
Cross-lagged: A-E vs. B-D, r = −0.64 vs. r = −0.77, Z = 2.22, p < 0.026.
Cross-lagged: A-F vs. D-C, r = −0.62 vs. r = −0.64, not significant.
Cross-lagged: B-F vs. C-B, r = −0.74 vs. r = −0.60, Z = 2.31, p < 0.021.
A-B vs. D-E: r = 0.91 vs. r = 0.99, Z = 13.02, p < 0.001.
B-C vs. E-F: r = 0.75 vs. r = 0.97, Z = 10.13, p < 0.001.
B-E vs. C-F: r = −0.74 vs. r = −0.62, Z = 2.02, p < 0.043.

A "dashboard" of longitudinal data for Iceland indicates, but is a poor substitute for, the thrill and then pain of these years. The slight decline in GDP in Iceland for 2011 versus 2009 reflects the national government's intervention program to prevent economic depression from occurring. The dramatic decline (> 90%) in 2007–2008 in foreign direct investment (FDI) inflow in Iceland followed the substantial shift toward corruption in 2006–2007; while details do not appear in this study, the FDI inflow decline for Iceland is substantially greater than experienced by nearly all other countries not entering or at war.

The *Ease of Doing Business 2010* report gives special attention to Rwanda for this country's introductions of business regulatory reforms as being effective in growing a nation's economy. The dashboard of findings for Rwanda does not support this conclusion. The substantial number of business regulatory reforms introduced in Rwanda during 2006–2009 precedes the substantial shift away from corruption during 2009–2011, but this shift is not accompanied by a growth in GDP per capita.

5.2 Competitiveness and Business Growth

The findings do not support the second hypothesis that the countries highest in competitiveness (measured by *Ease of Doing Business* quintiles) grow the fastest. The evidence indicates that annual GDP per capita growth in purchasing power parity USD is the most modest for the countries in the highest quintile in competitiveness. In fact, the quintile of most competitive countries is the only one

having significant negative growth in any of the four years in Table 1—growth was −3% with a 95% confidence interval from −1 to −4% for 2010.

Table 1. Competitiveness (DB Reports) and Annual Change in GDP (PPP) Per Capita

Report

DB 2007 5 Groups		GDP_growth_07_06	GDP_growth_08_07	gdp_delta_09_08_08	gdp_delta__10_09_09	delta_11_10_10	gdp_delta_12_11_11
1.00	Mean	.0837	.0470	.0784	-.0301	.0311	.0411
	Std. Error of Mean	.01429	.02768	.04334	.00857	.01015	.01455
	Minimum	-.11	-.44	-.09	-.19	-.11	-.20
	Sum	2.93	1.65	2.74	-1.05	1.09	1.44
	N	35	35	35	35	35	35
2.00	Mean	.1235	.1420	.2862	.0455	.0511	.0800
	Std. Error of Mean	.08065	.04975	.09260	.03181	.02072	.02869
	Minimum	-.65	-.36	-.24	-.16	-.41	-.21
	Sum	4.32	4.97	10.02	1.59	1.79	2.80
	N	35	35	35	35	35	35
3.00	Mean	.1230	.0762	.2419	.0136	.0440	.1283
	Std. Error of Mean	.03769	.06547	.09461	.00933	.01483	.02797
	Minimum	-.31	-.48	-.28	-.14	-.23	-.07
	Sum	4.31	2.74	8.71	.49	1.58	4.62
	N	35	36	36	36	36	36
4.00	Mean	.1290	.0561	.1623	.0140	.0714	.0437
	Std. Error of Mean	.02691	.05413	.09989	.01075	.02772	.01268
	Minimum	-.10	-.60	-.46	-.14	-.19	-.18
	Sum	4.52	1.96	5.68	.49	2.50	1.53
	N	35	35	35	35	35	35
5.00	Mean	.0928	-.0038	.1357	.0046	.0965	.0514
	Std. Error of Mean	.03882	.07565	.10126	.01641	.03734	.02760
	Minimum	-.44	-.76	-.60	-.25	-.09	-.49
	Sum	3.25	-.13	4.75	.16	3.38	1.80
	N	35	35	35	35	35	35
Total	Mean	.1104	.0636	.1812	.0096	.0587	.0692
	Std. Error of Mean	.02017	.02545	.03979	.00798	.01077	.01067
	Minimum	-.65	-.76	-.60	-.25	-.41	-.49
	Sum	19.32	11.19	31.90	1.68	10.34	12.19
	N	175	176	176	176	176	176
	η^2 =	.01	.02	.02	.05	.03	.06

The largest annual growth (8%) for countries highest in competitiveness occurs in 2007 versus 2006 and this growth is lower significantly than countries in the second, third, and fourth quintiles. The countries in the highest quintile in competitiveness represent the only segment that does achieve the highest growth in GDP in any of six years appearing in Table 1. Country competitiveness measured by *Ease of Doing Business* reports is not a useful indicator of economic growth rates.

5.3 Competitiveness and Economic Size

The findings support H_3; the relationship between competitiveness and GDP is linear and positive significantly for each year in 2006–2012. The countries in the highest quintile in competitiveness have significantly higher per capita GDP in USD PPP than countries in the second and lower quintiles.

Table 2. Competitiveness and GDP per Capita in USD PPP

Report

DB 2007 5 Groups		gdp06	gdp07	gdp08	gdp09	gdp10	gdp11	gdp2012
1.00	Mean	23262.86	25205.71	27491.43	28474.29	27788.57	28685.71	29582.86
	Std. Error of Mean	1992.229	2133.171	2507.610	2496.109	2510.281	2648.901	2584.249
	Minimum	900	900	500	500	500	500	400
	Maximum	42400	46300	55600	55200	59300	62200	59900
	N	35	35	35	35	35	35	35
2.00	Mean	10394.29	11171.43	13422.86	14520.00	14628.57	14965.71	15385.71
	Std. Error of Mean	1350.088	1482.325	2054.493	2037.072	1971.599	1925.774	1783.864
	Minimum	800	600	600	1900	2300	2500	2500
	Maximum	30000	31200	55300	57400	55800	51700	40700
	N	35	35	35	35	35	35	35
3.00	Mean	6642.86	7638.89	8208.33	9030.56	9111.11	9372.22	10438.89
	Std. Error of Mean	1092.944	1518.438	1691.174	1408.325	1433.808	1416.197	1599.525
	Minimum	800	1000	700	800	900	1000	1100
	Maximum	29100	49700	55200	40000	41800	40200	48500
	N	35	36	36	36	36	36	36
4.00	Mean	4605.71	5117.14	5737.14	6000.00	6054.29	6305.71	6540.00
	Std. Error of Mean	691.885	742.373	979.582	1013.116	1021.799	988.513	969.546
	Minimum	600	600	800	800	900	900	900
	Maximum	22800	24000	30500	32000	32100	30200	27600
	N	35	35	35	35	35	35	35
5.00	Mean	3065.71	3185.71	3168.57	3040.00	3157.14	3285.71	2788.57
	Std. Error of Mean	1400.924	1400.217	1265.713	941.510	1060.413	1099.604	620.067
	Minimum	600	600	300	200	200	300	300
	Maximum	50200	50200	44100	31400	36100	37900	19300
	N	35	35	35	35	35	35	35
Total	Mean	9594.29	10447.73	11586.36	12194.89	12130.68	12505.11	12932.95
	Std. Error of Mean	819.465	895.324	1022.763	1006.952	995.667	1018.347	1014.557
	Minimum	600	600	300	200	200	300	300
	Maximum	50200	50200	55600	57400	59300	62200	59900
	N	175	176	176	176	176	176	176
	$\eta 2$ =	.45	.44	.41	.45	.43	.44	.48

However, countries with modest GDP per capita (i.e., less than $2,501) are found in all quintiles for all the years in the study. It does not follow for a country that being highly competitive is sufficient for achieving the configuration of factors necessary for improving GDP and/or the quality-of-life of a nation's population, especially the poor.

Bangladesh is an informative case study. For Bangladesh, the combination of primary factors includes family planning, technological advances in growing rice, remittances from abroad, and a larger social safety-net program in comparison to most other poor nations. One of the two parts of the key point is that high competitiveness is not crucial for a country's economic size or quality-of-life; neither is low corruption: Bangladesh ranked 120th (out of 183) on the CPI in 2011. A configuration of factors affects a country's economic size and quality-of-life is the

second part; of course, the configuration for Bangladesh is just one of several that are likely to be transformative.

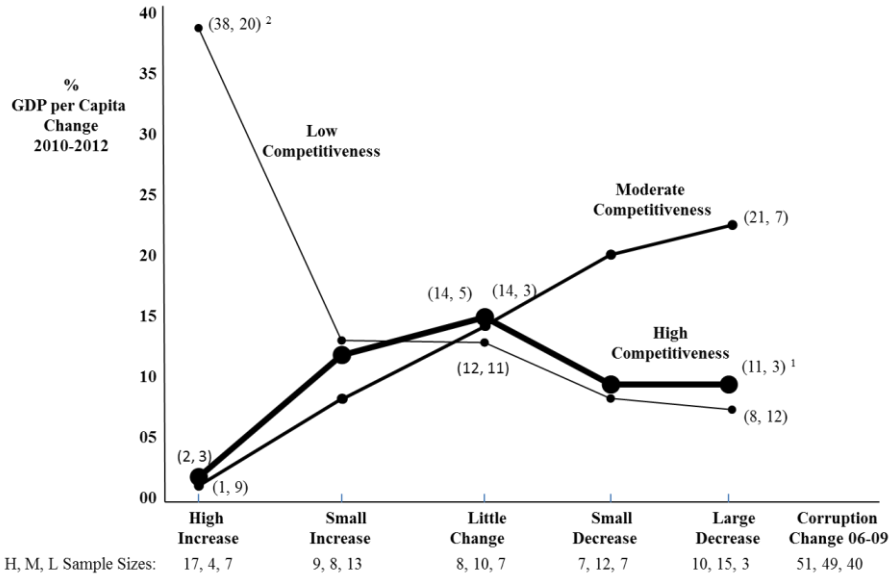
Figure 4 illustrates how the configurations of competitiveness and corruption associate with economic growth. Countries growing fastest economically in 2010–2012 have low levels of competitiveness in combination with high increases in corruption during 2006–2009. Moves away from corruption relate to increases in GDP for countries with medium levels of competitiveness during 2006-09. Nations highest in competitiveness show only modest changes in GDP at all levels except for the shift toward high corruption. Thus, the focus on net effects of corruption and competitiveness on changes in GDP are less insightful than focusing on the combinatory influences of these factors. This result presents a very useful guideline for governmental policy practices in most countries, including newly industrialized countries (NICs). Wikipedia (2013) offers a worldwide definition of NICs as countries whose economies have not yet reached developed country status but have, in a macroeconomic sense, outpaced their developing counterparts.

Our findings suggest that the NICs, including Argentina, Brazil, Chile, China, Egypt, India, Indonesia, Malaysia, Mexico, Philippines, Russia, South Africa, Sri Lanka, Thailand, and Turkey, should focus on the combinatory influences of corruption and competitiveness on changes in GDP rather than net effects of corruption and competitiveness on changes in GDP.

6. Summary, Limitations, and Implications for Theory and Future Research

More than "net effects" studies of influences are necessary for making accurate sense of the relationships among national competitiveness, corruption, reforms, and GDP. National competitiveness has a positive association with corruption in some circumstances—mostly likely when close-to-total government deregulation of financial firms occurs. Less versus more government regulations does not have a substantial relationship with economic change except that the lowest levels of government regulations associates with lower than average economic growth (Table 1). *The Economist*'s (2012a, p. 69) perspective that "Lighter rules mean less *baksheesh*" and that "Cutting rules costs nothing" are more than just bunk—they may serve to harm nations, firms, and individuals by promoting harmful deregulation of effective business practices that associates with increases in corrupt practices.

Figure 4. Growth in GDP by Lagged Changes in Corruption (mean, standard error)



Notes. [1]Average growth in GDP is 11% for 10 nations with a relatively large decrease in corruption among highly competitiveness nations and the standard error of 3 percent indicates the low end of a 95 confidence for the mean is above zero. [2]The high GDP growth (38%) comes with high volatility (standard error = 20) for these 7 nations.

The study is limited by the inability to perform true experiments of varying competitiveness, corrupt practices, and the introduction of reforms by assigning nations randomly to placebo control and treatment groups. However, such experiments are possible to a limited extent in laboratory conditions whereby different individuals or groups of persons are assigned to act as firms and countries with varying business regulations and opportunities to act responsibility and irresponsibly. Armstrong's (1977) creativity in varying some of these conditions in the study of firm-level irresponsibility is suggestive of such possibilities.

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