**Relationships between the Institutional Environment and Corporate Governance Practices:**

**Implications for Emerging and Developed Countries**

**ABSTRACT**

This study examines the influence of changes in elements of both informal and formal institutions at the

national level in 37 countries on changes in corporate governance practices in those countries over a period

of four years. We also examine these relationships for emerging countries versus developed countries. For

the sample as a whole, we find that changes in rule of law are related to changes in corporate governance

practices. For emerging countries, changes in corporate governance practices are related to changes in the

rule of law as well as the interaction of changes in control of corruption with changes in government

effectiveness. This differs from the pathway to improved corporate governance practices for developed

nations which is not affected by any single factor, but rather the interaction of changes in rule of law and

changes in regulatory quality.


Keywords: Corporate governance, emerging nations, institutional environment, institutions, corruption

**INTRODUCTION**


The globalization of capital flows has presented opportunities and challenges to firms in emerging countries as they strive to gain legitimacy and attract foreign investment. Improving the institutional environment in which these firms operate is an important precursor for their success.  However, changing the informal and formal elements of the institutional environment in a country is no easy task. For instance, there is a challenging pathway for an emerging nation to accede to EU membership. Substantive change, including but not limited to adoption of codes and rules, is required. This effort includes constructively adjusting complex labyrinths of both societal norms and laws. Historical and cultural tendencies must also be recognized and respectfully blended with progress (Daniel, Cieslewicz, & Pourjalali, 2012; Cieslewicz, 2016). This study strives to further illuminate the relationship between the institutional environment at the national level and corporate governance practices in emerging as well as developed economies. This study may help, for instance, in understanding the merit of the directions provided by policy makers to emerging nations.

Emerging countries face significant challenges when improving standards and elements of their institutional environments. Passing laws and regulations as part of the formal institutional structure may be much easier than effecting change in the informal institutional structure, which plays a key role in talent development and business norms which are key underpinnings in implementation of the formal institutional change.  For example, adopting International Financial Reporting Standards (IFRS) (Lungu, Caraiani, & Dascălu, 2017) and International Standards on Auditing (Duhovnik, 2011) provides emerging countries with explicit guidance to accountants consistent with those of developed nations.  However, without the education and training infrastructure, as well as the norms imposed by a history of professionalism in the financial services industry, implementing new regulations focusing on transparency and fairness in corporate disclosures and dealings may devolve into form over substance. Further, an emerging country is likely to struggle to have its own needs and concerns heard by the relevant standard

setting organizations dominated by developed economies. The formal decision to adopt new standards is itself difficult considering the full ramifications to practice the decision implies, yet substantial support is also required from the surrounding institutional environment for the new formal standards to be implemented successfully (Daniel, Cieslewicz, & Pourjalali, 2012; Cieslewicz, 2014). Real, substantive adoption supported by underlying institutional change leads to enhanced trust and increases in foreign direct investment (Lungu et al., 2017). This study discusses why institutional change, both formal and informal, is needed to reinforce wanted changes in corporate governance practices.

The institutional environment is made up of different elements that may or may not significantly influence corporate governance practices. Knowing which aspects of institutional environments have the greatest influence on corporate governance practices is instructive for implementing change. We find that changes in rule of law are associated with changes in corporate governance practices in countries with emerging economies. Rule of law refers to the rules of society, particularly the quality and enforcement of contracts and property rights, as well as the trustworthiness of the judicial system in enforcing laws. When control of corruption is combined with changes in government effectiveness, significant changes in corporate governance practices are also realized in emerging economies. This differs from the pathway to improved corporate governance practices for developed nations. We find that for developed nations, a combination of changes in rule of law and changes in regulatory quality is needed.

Consistent with the perspectives of North (1990), Aoki (2001) and Amable (2003) that institutions are "the rules of the game" (North 1990) in a society, we operationalize the institutional environment using the World Bank's Worldwide Governance Indicators (Kaufmann, Kraay and Mastruzzi, 2010), which reflect the degree to which national institutions are effective, both in design and enforcement. Likewise, our measure of corporate governance focuses not on codes but on actual practices, using a composite measure that incorporates such matters as board accountability, financial disclosure and internal controls, shareholder rights, executive compensation, takeover defenses and ownership base, and corporate

accountability. This nation-level composite measure of individual corporate practices is from Governance Metrics International (GMI).

The institutional environment permits, constrains, and reinforces corporate governance practices within a nation. The world provides illustrations of this. South Korea, in reaction to the Asian Financial Crisis of 1997, transformed its institutional environment. Doing so provided support for changes in corporate governance practices. For instance, barriers limiting the ownership of foreign shareholders were lifted, leading foreign ownership to increase from 13% of public firms in 1997 to 42% in 2006 (Aguilera, Castro, Lee, & You, 2012; Moon, 2006). This also led to increased direction from the worldwide financial community.

The global financial crisis of 2008 exerted pressure on the institutional environments of many nations to enhance regulation over banking and executive compensation. These institutional changes have supported changes in corporate governance practices which otherwise, though previously recognized as best practices, would not be widely implemented. Our sample of 37 nations from 2006 to 2010 includes 16 emerging and 21 developed nations, and covers this period of significant challenge and change.

Another example in which changes in the institutional environment have led to changes in corporate governance practices involves the US. Prior to the passage of the Sarbanes-Oxley Act, it was understood that auditors that profit more from consulting services they provide for their audit clients than from audit fees have a conflict of interest. It was understood that an audit committee could increase the distance between management and auditors and provide auditors with a pathway to resolve significant audit concerns. It was also understood that management should take responsibility for the internal controls of their organization, and that COSO provided a framework for such governance (COSO, 1992). However, it was not until the institutional environment changed and provided legislative and regulatory reinforcement that these recommended practices became wide-spread corporate governance practices. The subsequent transition was not instantaneous, and was punctuated by adjustments and results that lagged the directives to change.

Europe provides another more recent example of the need to make changes to institutional environments to realize changes in practices. Worldwide, there has been resistance to female participation on boards. To gain access to female talent, diversity quotas were implemented in Europe, which facilitated changes in corporate governance (Daniel & Li, 2018). Female representation on boards now ranges between 25-45% in Europe, while without such mandatory quotas in the UK and the US, the percentage of women on corporate boards hovers around 20, and the percentages for Asian nations, such as Japan, Singapore, India and China, are lower still.

We posit that emerging economies have more to gain from improving their institutional environments than developed nations do, and that by enhancing their institutional environments, they can support improvements in corporate governance practices. Increases in foreign direct investment are more likely if such nations bolster their institutional environments and consequently reap real improvements in their corporate governance practices. This contrasts with only superficially adopting corporate governance codes, but not making changes in underlying institutions to reinforce the wanted changes in corporate governance practices. For example, in the 1990's, Vietnam was in the process of opening their economy, but from the perspective of their institutional environment, wavered back and forth between supporting real change and clinging to their past. Multinationals' investment in the nation paralleled these waves, flowing and ebbing with the improvements and erosions in the institutional environment. Since that time, Vietnam has made substantial institutional improvements, making changes to corporate governance practices possible.

Change comes at a cost, and change is not simple, as demonstrated by Romania's efforts to transition to IFRS (Ionaşcu, Ionaşcu, Olimid, & Calu, 2007). Romania could not immediately transition, because companies in Romania did not have the capacity to do so. Companies and their employees require time to change. It is only after substantial consultants' fees, training costs, and related costs are incurred that change occurs. Consequently, regulators must insist on the change, and incentives have to exist, or change is not fully embraced. Change requires great effort, and so it is important that the right

changes are identified and focused on. The intent of this research is to help identify the most important elements of the institutional environment on which to focus to realize the wanted changes in corporate governance practices.

The next section of the paper provides a review of the prior literature on institutions and corporate governance and presents our hypotheses. In the third section, we operationalize the constructs and variables used to test our hypotheses. In the fourth section, we provide the details of the statistical analyses and present our results. The fifth section provides a discussion of the results and our conclusions, while the last section describes limitations of this work and suggestions for future research.

## LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

### Changes in the Institutional Environment Enable Changes in Corporate Governance Practices

Institutional environments provide the broad structure that corporations must work within. Corporations are selective in choosing which institutional environments to invest in. Such selectivity is warranted, as research has demonstrated. For instance, Gande, Schensler, and Senbet (2009) found that US firms diversifying into foreign markets achieve higher valuation benefits when diversifying into countries with creditor rights that are stronger than that of the US. Institutional environments also have bearing on corporate governance practices.

To improve corporate governance, there has been an international trend towards formal adoption of corporate governance best practices. The OECD (2008) reports that its Principles of Corporate Governance "has become the global benchmark, accepted in OECD and non-OECD countries alike." For example, recently adopted ASEAN (2013) Corporate Governance Scorecard Principles closely follow the OECD Principles. Similarly, Japan's recently adopted corporate governance code is also modeled after the OECD Principles. This general movement towards convergence may in part be explained by the perceived need by countries to gain legitimacy in the global business environment (Reed, 2002).

However, if most nations have converged to this benchmark and the variation in adopted corporate governance codes has dwindled, why do the quality of actual corporate governance practices as measured by such organizations as ISS, Glass Lewis, and MSCI demonstrate wide variation in the quality of corporate governance?

We posit that sustainable, real improvements in corporate governance require reinforcement from improvements in institutional environments. Corporate governance codes represent ideals more than rules when institutional environments do not reinforce them. In a sense, corporate governance may be viewed as a game inside of a larger game as corporate governance functions within institutional environments. Corporate governance is subject to institutional environments, which provide the "rules of the game in a society . . . the humanly devised constraints that shape human interaction" (North, 1990: 3). Improvements to institutional environments, to be meaningful to companies that operate within them, must include changes to both formal and informal (Chacar, Celo & Hesterly, 2018) components. For instance, it does not help to have a new rule, but then to have some way out of compliance. There are some rules in the EU, for instance, for which noncompliance can be explained away (Shrives and Brennan, 2017). Changes to institutional environments must be substantive, involving both formal and informal change, in order to effectively influence corporate governance practices.

DiMaggio and Powell (1991) described the institutional environment as having coercive, imitative, and normative components. Adopting best corporate governance practices from other nations is an example of an imitative component of institutional environments. Imitation, however, can be in substance or in form, and may require additional coercive and normative influence to be realized in substance. Influences from professional organizations are a type of normative influence. Yet, professional organizations often lack adequate enforcement power to require compliance with codes. For instance, the American Institute of Certified Public Accountants (AICPA) can remove members from their professional organization for violations of their code of conduct. However, if state boards of accountancy, the SEC, and the PCAOB did not also clamp down on the privilege to practice as a CPA through suspending

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licensing and issuing sanctions, the disciplinary actions of the AICPA would have limited influence on the ethics of the profession. Coercive factors include regulation and enforcement. Coercive influences have the capacity to not just ask for or suggest, but demand improvements in corporate governance practices.

In examining the institutional environment, we rely on six elements of country governance as developed by Kaufmann et al. (2010): rule of law, regulatory quality, voice and accountability, political stability and absence of violence, control of corruption, and government effectiveness.

*Rule of Law.* Rule of law influences the extent to which agents have confidence in and abide by the rules of society, particularly the quality and enforcement of contracts and property rights, as well as the trustworthiness of the judicial system in enforcing laws. Nations have been converging with respect to corporate governance codes (OECD 2008), but the quality of corporate governance practices should depend on the extent to which these codes are required to be followed. If rule-following overall in an institutional environment is improved, the extent to which corporate governance codes are complied with should also improve.

*Regulatory Quality*. Regulatory quality measures the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Corporate governance is likely to perform best in a setting where trade and labor policies and tax structures promote the private sector development and business has access to capital markets. We expect a positive relationship between the change of regulatory quality and the change of corporate governance practices.

*Voice and Accountability*. Voice and accountability reflects expectations of being able to participate in government and represents the extent of free media, which we expect should influence accountability and shareholder rights. If individuals responsible for corporate governance know that improper acts will be publicly exposed in the media, they may be more motivated to follow rules and implement better corporate governance practices.

*Political Stability and Absence of Violence*. Political stability and absence of violence are fundamental elements of the institutional environment. Without political stability, it is difficult to pass new laws and to implement an effective infrastructure to administer those laws. In addition, political instability will deter foreign investors who often help drive improvements in corporate governance, particularly in emerging nations.

*Control of Corruption*. Research on corruption (Boubakri et al., 2013) has indicated corruption is associated with poorer corporate governance. Corruption manifests itself in the extent to which public power is exercised for private gain, including petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. Control of corruption restricts instances in which public power is abused for private gain, and is foundational to the expectation that corporate governance is aligned with all stakeholders.

*Government Effectiveness*. Government effectiveness is reflected in the quality of public services, the quality of the civil service and the degree of its independence from political pressures. Government effectiveness also includes the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Effective bureaucratic infrastructure and qualified personnel should facilitate administration of regulations and advance predictability, which should promote better corporate governance. Improvements in government effectiveness should be positively related to improvements in corporate governance practices.

Overall, when institutional environments function well and improve, then improvements in corporate governance practices should be realizable. Conversely, if institutional environments deteriorate, we would expect a deterioration of corporate governance practices when compared to best practice standards. It is instructive to discover which parts of the institutional environment must change to improve corporate governance practices.

**Hypothesis 1**: Changes in institutional environments are positively related to changes in corporate governance practices within a given nation. The changes in institutional environments include changes to the following elements:

> **1a**: Rule of Law
>
> **1b**: Regulatory Quality
>
> **1c**: Voice and Accountability
>
> **1d**: Political Stability
>
> **1e**: Control of Corruption
>
> **1f**: Government Effectiveness

**Changing Corporate Governance Practices in Emerging Nations**

The hypothesis described above constitutes a baseline evaluation of relationships between changes in institutional environments and changes in corporate governance practices. However, our primary purpose is to understand the extent to which these relationships vary between developed and emerging economies.

A premise of this study is that adoption of corporate governance codes must be supported by improvements to the institutional environment to realize the desired improvements in corporate governance practices. Two nations can formally adopt the same corporate governance codes, but thereafter the two countries can have substantially different actual corporate governance practices. This is particularly the case if one nation is developed and has robust institutions, while the other nation has an emerging economy and weaker institutions. Without reinforcement, good intentions often fade. This is similar to what happens when a new internal control is implemented in an organization. If it requires change and possibly more work, and if proper implementation is not monitored, employees may be quick to ignore it.

As noted earlier, the movement towards convergence in corporate governance practices may in part be explained by the need by countries to gain legitimacy in the global business environment (Reed, 2002). With regard to this, it is the emerging economies that have the most to gain from improving their institutional environments. In comparison to the institutional environments of developed economies, they also have the most room for improvement. Consequently, they are more likely to affect changes in their institutional environments, with one desired effect being that corporate governance practices will improve.

China provides a case study to examine this in. In the early stages of its economic transformation, China created special economic regions within which different rules and enforcement were applied. In essence, China piloted its reform of its institutional environment within these special economic regions. Achieving tremendous success in these regions, they have expanded their efforts. This of course did not happen in a vacuum. Other variables were in play, including foreign interests in cheap labor and incentives for those in power. All other variables aside, it has been necessary for China to change their institutional environment to allow corporate governance to function more effectively and efficiently. Yet, in China regional differences in the strength of institutions persists, and this effects corporate governance practices. For instance, Li and Qian (2013) found that in areas in China where minority shareholders' interests are better protected, the resistance of controlling shareholders to takeovers weakens.

If institutional environments in emerging countries can be improved, investment can be attracted and firms can raise capital. As regulations related to such important matters as protecting minority shareholders and controlling corruption improve, and corporate governance practices improve, businesses and the national economy should benefit. Conversely, if institutional environments within emerging economies falter and deteriorate, advances in corporate governance practices are likely to rapidly erode, leading to withdrawal of foreign investment.

We expect that the influence of changes in institutional environments on changes in corporate governance practices will be most pronounced in emerging countries. We will evaluate each of the six

elements of the institutional environment to ascertain which elements are most important to affect changes in corporate governance practices in emerging economies. Our second hypothesis is:

> **Hypothesis 2:** The elements of the institutional environment that will need to change to realize changes in corporate governance practices will differ for emerging nations and developed nations. This will be evident in evaluating the impact on corporate governance of following elements of the institutional environment in emerging and in developed economies:
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> > **2a**: Rule of Law
> >
> > **2b**: Regulatory Quality
> >
> > **2c**: Voice and Accountability
> >
> > **2d**: Political Stability
> >
> > **2e**: Control of Corruption
> >
> > **2f**: Government Effectiveness

**Interactions between Elements of the Institutional Environment**

While each element of the institutional environment may have a unique direct influence on corporate governance practices, we also believe that institutional elements may act in combination and have synergistic effects when improved in tandem. For example, improvements in rule of law may not have much of an effect unless they are accompanied by corresponding improvements in regulatory quality to develop policies and regulations on a timely basis to administer the law. There could also be a synergistic interaction between improvements in the control of corruption and a more vibrant free press, as the latter could expose corruption. Improving control of corruption while simultaneously improving government effectiveness could also improve corporate governance practices by moving from inefficient government interference which exacerbates corruption, to an efficient and supporting governmental support system.

We therefore propose that positive interaction effects between the elements of the institutional environment, particularly those directly related to legal institutions and government policies, systems, procedures and enforcement, will result in corresponding changes in corporate governance practices, whereas changes in single institutional factors may not. Following on with the reasoning in Hypothesis 2, we propose that these interactions may operate differently for emerging versus developed nations. We propose that the synergistic effects may be more pronounced in emerging nations which may be lacking in not only formal institutions but also informal institutions.

**Hypothesis 3**: Positive changes in the elements of the institutional environment interact with each other to enhance changes in corporate governance practices.

## DATA AND METHODOLOGY

**Model**

The model below was used to empirically test the hypothesized relationships between changes in institutional environment variables and changes in corporate governance practices.

$$GOVDIFF \; = \; \alpha_0 + \alpha_1 \, R_{i,t} + \eta_1 D_{country} + \eta_2 \, D_{year} + \varepsilon_{i,t}$$

Where

*GOVDIFF = change in corporate governance scores of 37 countries from 2006 through 2010, obtained from Governance Metrics International (GMI)*

$R_{i,t}$ =an array of institutional variables which is composed of the following

*VADIFF: difference between the value of voice and accountability in time t+1 and that of voice and accountability in time t*

*PSNVDIFF: difference between the value of political stability and absence of violence in time t+1 and that of political stability and absence of violence in time t*

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*GEDIFF: difference between the value of government effectiveness in time t+1 and that of*

   *government effectiveness in time t.*

*RQDIFF: difference between the value of regulatory quality in time t+1 and that of regulatory*

   *quality in time t*

*RLDIFF: difference between the value of rule of law in time t+1 and that of rule of law in time t*

*CCDIFF: difference between the value of control of corruption in time t+1 and that of control of*

   *corruption in time t*

$D_{country}$ *= an array of country dummy variables which is used to consider the country effect on*

   *corporate governance practices across countries*

$D_{year}$ *= an array of year dummy variables which is used to consider the time effect on corporate*

   *governance practices across countries*

All datasets are at the national level, all the analysis was done at the national level, and the results apply at the national level. Each variable was measured annually for five years, 2006 through 2010, representing four years of change for each variable. With 37 countries this results in a sample size of 148 for most analyses. Our model has strengths when compared to the models of previous studies. For instance, Doidge, Karolyi and Stultz (2007) used institutional variables that do not change across years. Consequently, they could not employ country fixed effects because there is perfect collinearity between institutional variables and country dummies. Though Doidge et al. (2007) include country dummies, they could not control for institutional variables (e.g., rule of law *antiselfdealing index) and country dummies in the same regression, due to perfect collinearity. They ran a regression of corporate governance scores on either rule of law*antiselfdealing index or country dummies.

**Dependent Variable**

*Corporate Governance Practices.* The Organisation for Economic Cooperation and Development (OECD) and the National Association of Corporate Directors (NACD) have proposed guidelines emphasizing transparency in corporate governance to protect minority shareholders and encourage sufficient disclosure. In addition, private firms that provide information to institutional investors, such as ISS, Glass Lewis, and MSCI, have indirectly encouraged reforms in corporate governance practices through their proxy advisory services and ratings of individual corporate practices. These organizations have focused attention on actual corporate practices regarding board independence, compensation policies, and financial transparency. They generally look beyond legal requirements imposed on public companies and move the discussion of corporate governance from that of general best practices and country codes of good governance to specific corporate behaviors and practices.

The variation in practices makes it difficult to develop a construct for corporate governance practices at the country level; however, prior to their acquisition by MSCI in 2014, Governance Metrics International (GMI Ratings) published a country corporate governance index extrapolated from the corporate governance practices of the firms within each country that they followed and rated for their investor clientele. It is these country-level ratings that we have drawn upon for the dependent variable in this study. GMI calculated corporate governance ratings for individual companies *"By developing a highly-detailed governance profile incorporating hundreds of variables per company plus analyst insights. In addition to reviewing board composition, board leadership, company documents and websites to identify stated policies and procedures, GMI also reviews regulatory actions, legal proceedings and other sources to gauge whether company behavior is consistent with its stated policies. Once database profiles are complete, GMI applies a scoring algorithm to generate company ratings on a scale of 1.0 to 10.0 (10.0 being the highest). The use of asymmetric geometric scoring is meant to magnify the impact of outliers. This includes both those with the very best practices – who are then rewarded more – or those*

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*with the worst – who are penalized. GMI scores are relative in that each company is scored against other companies in the GMI research universe" (GMI 2006a).*

The composite country scores reflect the corporate governance practices of the universe of firms rated by GMI within each country as compared to the overall global universe of rated firms. The GMI composite country ratings were publicly available on the GMI website for years 2006 to 2010. We calculated changes in the rating by subtracting two consecutive values.


**Independent Variables**

*Institutional Environment.* One of the most well-known and comprehensive studies of the institutional environment of countries is that of Kaufmann et al. (2010), who have provided measures of national institutional environments affecting governance through their work on the World Bank's Worldwide Governance Indicators (WGI). The WGI project reported aggregate and individual governance indicators for 212 countries and territories annually beginning in 1996 for six dimensions of national governance. The WGI aggregate indicators combine the views of a large number of enterprise, citizen, and expert survey respondents in nations with emerging and developed economies. The individual data sources underlying the aggregate indicators are drawn from a diverse variety of survey institutes, think tanks, non-governmental organizations, and international organizations (See Kaufmann et al. 2010). The WGI variables are compiled from a variety of credible sources, and are rigorously reviewed by the developers for consistency across countries and over time. We use this dataset because of its reflection of the coercive component of institutional environments discussed earlier as well as its expected relationship with corporate governance practices. All six measures made available by the WGI—regulatory quality, government effectiveness, rule of law, control of corruption, voice and accountability, and political stability—are predicted to have positive correlations with corporate governance practices. For our independent variables, we use the change from year t to year t+1 for the following variables (as described directly from the WGI website):

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RL= Rule of Law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.

RQ= Regulatory Quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

VA = Voice and Accountability captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.

PSNV= Political Stability and Absence of Violence measures perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including domestic violence and terrorism.

CC= Control of Corruption captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

GE= Government Effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.

**Control Variables**

*Country Dummies.* Doidge et al. (2007) show that governance ratings are explained much more by country characteristics (ranging from 39% to 73%) than firm characteristics (ranging from 4% to 22%). In particular, they find almost 39% of the variance in Credit Lyonnais Securities Asia (CLSA) corporate governance ratings, 73% of the variance in the S&P transparency and disclosure ratings, and 72% of the FTSE ISS Corporate Governance Index are explained by country-level dummy variables. Building on Doidge et al. (2007), we include country dummies into the OLS analysis. By including country dummies, we control for the average differences across countries in any unobservable predictors, thus reducing an omitted variable bias.

*Time dummies.* We also include year dummies. By including year dummies, we control for the average difference across years.

## RESULTS

The results of the empirical analysis are shown in Table 1 through Table 5B. Table 1 reports summary statistics for the change in the GMI corporate governance practices indices by country. Among 37 countries, the number of countries with a negative mean of corporate governance change is 22 and the number of countries with a positive mean is 15. Among the 22 countries with a negative mean, there are 12 emerging countries and 10 developed countries. Among the 15 countries with a positive mean there are 4 emerging countries and 11 developed countries. Due to the presence of both positive and negative changes in governance practices in both groups, a test of means was performed resulting in no significant difference in the mean change in GMI corporate governance practices between the emerging market and developed market countries.

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TABLE 1 HERE

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Table 1A reports summary statistics for the six independent variables, representing annual changes in institutional factors, shown separately for the 16 emerging market nations and the 21 developed market nations. A test of means for significant differences between the emerging market and developed market samples for each of the institutional variables reveals only one significant difference – between government effectiveness at the 5% level.


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TABLE 1A HERE

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Table 2 reports a correlation analysis. The changes in regulatory quality and rule of law are positively correlated with the changes in corporate governance at the 5% significance level and at the 10% significance level, respectively. We anticipated each of the institutional environment variables to have a positive correlation with corporate governance practices. The change in rule of law (RLDIFF) and the change in regulatory quality (RQDIFF) meet this expectation. Contrary to our expectations, one variable, change in voice and accountability (VADIFF), is negatively correlated with the change in corporate governance practices variable at the 10% significance level. The results of this univariate analysis should, however, be cautiously interpreted since we cannot control for relevant variables in the correlation, thereby leading to significant correlation between variables.

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TABLE 2 HERE

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**Tests of Hypothesis 1 – The Influence of Institutional Environment Changes on Changes in Corporate Governance Practices**

Table 3 presents the results of the regression of the change in corporate governance practices on the changes in institutional environment variables. In Model 1, we regress the change in corporate governance practices on the changes in the six institutional variables without country and year dummies. We find that the change in voice and accountability and the change in control of corruption, are negatively associated with the change in corporate governance practices at the 10% and 5% significance levels, respectively, which is contrary to our expectations. In Model 1, the change in regulatory quality and the change in rule of law are positively associated with the change in corporate governance practices at the 5% significance level, respectively, which is consistent with our expectations. However, in Model 1 we do not control for country and year, so the results should be interpreted with caution.

In Model 2, we regress the change in corporate governance practices on the change in the six institutional variables, controlling for country effects using country dummies. We find a positive relationship at the 5% significance level between the change in rule of law and the change in corporate governance practices and a positive relationship at the 10% significance level between the change in regulatory quality and the change in corporate governance practices.

In Model 3, we regress the change in corporate governance practices on the change in the six institutional variables, controlling for year effects using year dummies, and find that the change in regulatory quality and the change in rule of law continue to have positive effects at the 5% significance level.

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To control for both country and year effects, in Model 4, we regress the change in corporate governance practices on the change in all institutional variables with both country and year dummies. We find that only the change in rule of law is positively related to the change in corporate governance practices at the 10% significance level. The economic or practical significance of these results can be explained as follows: the increase of one standard deviation in the change of rule of law is related to an increase of 0.18 standard deviation in the change of corporate governance practices[i]. To test for multicollinearity, we compute variance inflation factors (VIF) for all variables in each specification. All VIF factors are within acceptable ranges, the largest VIF of 1.98 being on RQDIFF, indicating that multicollinearity is not an issue in our analysis. While it might be common to see high levels of multicollinearity between these institutional variables, because we are analyzing annual changes in the variables, multicollinearity is not present in the data.

Based on the results in Model 4 of Table 3, which includes both year and country fixed effects, we find some support for Hypothesis 1, in that the improved rule of law will have a positive effect on corporate governance practices. This is where efforts should be focused when seeking to strengthen institutional environments so as to support improvements in corporate governance practices.


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TABLE 3 HERE

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**Tests of Hypothesis 2 – Differences in Developed and Emerging Nations**

To test Hypothesis 2, we divide the countries into two groups, emerging nations and developed nations, using the criteria of Standard & Poor's (S&P) Emerging Markets Database, to determine if there is a difference in the effect of the changes in institutional variables on the changes in corporate governance practices in emerging nations in comparison with developed nations. These results are shown

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in Tables 4A and 4B.

*Results for Emerging Nations.* Table 4A presents the results of the regression of the changes in corporate governance practices on the changes in institutional environment variables in emerging nations. In Model 1, we regress the changes in corporate governance practices on the changes in six institutional variables without country and year dummies and find that the change in political stability and absence of violence (PSNVDIFF) is negatively associated with the change in corporate governance practices at the 10% significance level, which is contrary to our expectations. In Model 1, the coefficient of the change in regulatory quality is positive at the 10% significance level; the change in rule of law is positively associated with the change in corporate governance practices at the 5% significance level, consistent with our expectations. However, in Model 1, we do not include country and year dummies, so the results should again be interpreted with caution.

In Model 2, we control for country effects and regress the changes in corporate governance practices on the changes in six institutional environment variables with country dummies. We find that the change in regulatory quality and the change in rule of law are both positively related to the change in corporate governance practices at the 10% significance level. Of note in Model 2, which includes country fixed effects, is that the adjusted R squared increases significantly relative to Model 1. This is consistent with the finding of Doidge et al. (2007) who report that country characteristics account for much more of the variance in governance ratings than firm characteristics.

In Model 3, we regress the changes in corporate governance practices on the changes in the six institutional environment variables, controlling for year but not country effects and find that there is a positive association between the change in rule of law and the change in corporate governance practice at the 1% significance level.

Controlling for both country and year effects, we regress the changes in corporate governance practices on the changes in all institutional variables with country and year dummies in Model 4. We find

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that the change in rule of law remains positively related to the change in corporate governance practices at the 5% level. Again, the inclusion of the country fixed effects significantly increases the adjusted R squared of Model 4 relative to Model 3 for emerging countries.

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TABLE 4A HERE

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*Results for Developed Nations.* Table 4B presents the results of the regression of the changes in corporate governance practices on the changes in institutional environment variables in developed nations. In Model 1, we regress the changes in corporate governance practices on the changes in six institutional variables without country and year dummies and find that the change in voice and accountability and the change in control of corruption are negatively associated with the change in corporate governance practices at the 10% and 5% significance level, respectively, which is not consistent with our expectations. However, in Model 1, as we do not control for country and year effects, the results should be interpreted with caution.

In Model 2, we regress the changes in corporate governance practices on the changes in six institutional environment variables controlling for country. We find that there is still a marginally statistically significant and negative association between the change in voice and accountability and the change in corporate governance practices. Of note in Model 2, which includes country fixed effects, is that adjusted R squared turns negative, which means that controlling for country does not efficiently explain the change in corporate governance practices for developed nations. This contrasts with the finding of Doidge et al. (2007), which reports that country characteristics are important determinants of corporate governance practices. Breaking our analysis down between developed and emerging economies provides additional insight in this respect.

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In Model 3, we regress the changes in corporate governance practices on the changes in six institutional environment variables controlling for year and find that the coefficient of control of corruption remains negative at the 10% significance level, contrary to our expectations. However, the adjusted R squared increases significantly relative to that in Model 1 with the addition of the fixed time effects variable.

Regressing the changes in corporate governance practices on the changes in all institutional variables while controlling for country and year in Model 4, we find that none of the institutional environment variables are significant. Similar to the findings in model 2, we find that the addition of the country effects dummy variable lowers the adjusted R squared, indicating that adding country effects in the developed market sample does not efficiently increase the explanatory power of the model. However, the results indicate that when we control for both country and year effects, the direct effect of changes in individual institutional environment variables on changes in governance practices are not significant in the developed nations. We also note that the presence of positive and negative coefficients in this model leads us to consider whether there are significant interactions between the variables, which will be tested in the next section.

In summary, Hypothesis 2, that changes in institutional environments have greater influence on changes in corporate governance practices in nations with emerging economies rather than developed economies, cannot be entirely rejected. Changes in rule of law in emerging nations are significantly associated with changes in corporate governance practices. Since emerging countries may have relatively weaker institutional environments and relatively poorer corporate governance practices, changing rule of law is enough to lead to significant changes in corporate governance practices.


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TABLE 4B HERE

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**Tests of Hypothesis 3 – Interaction Effects**

Hypothesis 3 posits that there will be a synergistic effect from positive changes in the institutional elements on corporate governance practices. We tested all six possible combinations of two-way interactions for the four institutional factors most closely related to (and under the control of) government systems – GEDIFF, CCDIFF, RQDIFF, and RLDIFF. We also tested interactions for VADIFF with CCDIFF, since we theorize that a more effective free press may enhance control of corruption. We also tested interactions for PSNVDIFF with CCDIFF because we theorize that there could be an interactive relationship between the political stability of a country and control of corruption. All interactions were tested for the entire sample of countries and also separately for emerging and developed nations. In each interaction test, we include the direct and interaction terms of the pairs of variables. We also included the direct effect of rule of law, in light of the significance of that variable in the models developed in Tables 3 and 4A. None of the interaction pairs tested showed significance for the sample as a whole. However, when we separate the nations into two samples by level of development, we found one significant interaction effect for emerging nations (Table 5A), and another for developed nations (Table 5B).

In the emerging countries, in addition to a significant direct effect for change in the rule of law, we found a significant effect for the interaction term for government effectiveness with control of corruption. This implies that, in emerging nations, when improvements in government effectiveness are combined with improvements in control of corruption, there is a very synergistic and positive effect on corporate governance practices. The large coefficient for the interaction term and the high adjusted R squared for this model indicate that emerging market nations that focus on simultaneously improving these two institutional elements together, as well as improving the rule of law, may achieve significant improvements in corporate governance practices.

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TABLE 5A HERE

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In contrast, in the developed nations, a significant interaction effect was found for change in rule of law with change in regulatory quality. Table 5B provides the results of the direct effects of rule of law and change in regulatory quality, along with the interaction term for change in rule of law with change in regulatory quality, on change in corporate governance practices. For the developed nations, the interaction term is significant in Model 1, Model 2 and Model 3. However, in Model 4, the significance of the interaction term disappears when we control for both country and year. In addition, similar to the results in Table 4B, including country dummies significantly decreases the adjusted R squared in developed nations and thus, in examining interaction effects in the developed market sample, the result in Model 3 provides a more efficient explanatory model of changes in corporate governance practices than Model 4.


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TABLE 5B HERE

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Overall, we find some support for Hypothesis 3 in both emerging and developed nations. The interactions that are significant are different. Taken as a whole, our results present a more complicated picture. In emerging nations, which arguably have less sophisticated legal and regulatory enforcement mechanisms, improving the rule of law, as well as a combination of improved control of corruption with improved government effectiveness, results in a relatively powerful explanatory model for improvements in corporate governance practices.

However, in the developed nations, it is only through strengthening (deteriorating) both rule of law and regulatory quality together that improvements (deteriorations) in corporate governance practices are realized, and the direct effects of improving any single institutional variable are not significant. We conjecture that since developed nations already have relatively effective institutional environments and relatively better corporate governance practices, changes in institutional environments require greater efforts in multiple elements to lead to significant changes in corporate governance practices.

To summarize the results of the hypotheses tests, we find support for Hypothesis 1 in the sample as a whole, and the emerging market sample. Models for emerging and developed nations differ, supporting Hypothesis 2. Finally, we find support for Hypothesis 3 in both market samples, and particularly in the emerging nations, as evidenced by the significant coefficient for the interaction term and the high explanatory power of the model even when controlling separately for year and country.

## DISCUSSION AND CONCLUSIONS

The purpose of this study was to explore relationships between changes in components of the institutional environment and changes in corporate governance practices across countries, and to examine whether improvements in the institutional environment may have different effects on corporate governance practices in emerging economies than in developed nations. Our findings contribute to our understanding of these relationships in that changes in institutional environments are related to changes in corporate governance practices overall, and in particular, changes in regulatory quality and rule of law are associated with changes in corporate governance practices.

When we differentiate between emerging and developed countries, we learn much more. The effect of change in rule of law on corporate governance practices was robust in a sample of emerging nations. Emerging nations stand to lose much by allowing rule of law to deteriorate since incoming investment is likely to be deterred and existing investment is likely to exit. For policy makers in emerging

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nations, this finding suggests that corporate governance practices may be influenced through strengthening the rule of law. Our results also indicate that in emerging nations, while change in rule of law has the most significant single direct effect on corporate governance practices, when we examine interaction effects, we also see significant impacts on corporate governance practices when improvements in government effectiveness are accompanied by improvements in the control of corruption.

In the sample of developed nations, while the direct impacts of any one institutional environment factor were not significant, change in rule of law interacts with change in regulatory quality to achieve changes in corporate governance practices. This suggests that developed nations must improve (degrade) both of these elements of their institutional environments in combination in order to realize improvements (deteriorations) in their corporate governance practices. Also of importance in terms of allocating resources to affect changes in corporate governance practices, the findings of this study suggest that changing four other elements of the institutional environment – political stability and the absence of violence, voice and accountability, government effectiveness, and control of corruption – separately may not have as strong of an effect on changing corporate governance practices in either emerging or developed nations.

For policy makers, our findings suggest that when seeking to improve corporate governance practices it is important to also focus on improving the institutional environment – by strengthening the rule of law, and by simultaneously enhancing regulatory quality, in developed nations. In emerging nations, strengthening the rule of law and simultaneously improving government effectiveness with control of corruption is most beneficial.

Our results also speak to the importance of one of the premises of our study. While international adoption of best codes of corporate governance is widespread (OECD, 2008), there is still variation in the quality of corporate governance practices across nations. It is not sufficient to simply adopt a corporate governance code of best practice; it is also necessary to adjust the institutional environment to support improvements in corporate governance practices. Formally adopting best corporate governance practices

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without reinforcing them with sound institutional changes may result in only superficial changes that does not accomplish the intended objective.

## LIMITATIONS AND DIRECTIONS FOR FURTHER RESEARCH

Just as different nations may have financial systems that are fundamentally different, such as bank-based or stock market-based systems, nations have corporate governance arrangements that are different from each other. These have arisen from different political, cultural and historical contexts (Daniel et al., 2012). With increasing international interaction and competition between firms, these corporate governance approaches have gradually come to look more like each other, or converge (Witt 2004). Yet, across nations, there continues to exist fundamentally different perspectives (Witt & Redding, 2009) on the ideal structure of economies and the institutional environments that support corporate governance. We do not focus on differences in forms of corporate governance, but rather on differences in actual institutional and corporate governance outcomes.

Like many cross-national studies, a limitation of our study is the relatively small sample size. While the World Bank database used for the institutional environment contained over 200 countries and territories (Kaufmann et al. 2010), the Governance Metrics International (GMI 2006b) corporate governance practices country scores were available for only 37 of these countries. For country-level studies, this is a reasonably large group of countries.

Firm-level corporate governance ratings have received some criticism. Although the link between corporate governance ratings and reported corporate profits or stock returns has been questioned, the effectiveness of the ratings in reflecting board independence, oversight, and other measures of corporate governance practices has not been criticized. GMI reported governance ratings for publicly traded companies only; accordingly, our results may not be applicable to all firms, but should be applicable to those of interest to large international investors. Another limitation of our study is that we regress

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measures of corporate governance practices aggregated to the nation level. That is, we employ a country-level regression rather than a firm-level regression. The country-level regression may be subject to omitted correlated variables (Defond, Hung, & Trezevant, 2007). Therefore, additional analysis at the firm level may enable a clearer understanding of how various institutional factors impact firms of different sizes, industries or other micro-economic characteristics. However, firm-level data also has some limitations. One limitation is that unlisted firms are typically excluded because the data is unavailable. Additionally, regressions at the firm level which utilize nation-level measures of institutions may suffer from cutting across levels of analyses, or including nation-level variables in a regression that is performed on firm-level data. In light of these challenges, as commonly coded financial data using XBRL becomes available, and assuming additional data on corporate governance practices becomes available, we encourage further research in this area employing firm level data from multiple countries. Our results apply primarily to nations and policy makers within nations as our analyses are performed at the country level, although the results do have implications for firms and their corporate governance practices.

Another limitation has less to do with the data and more to do with the recommended use of the results. The study identifies elements of the institutional environment that are critical for the functioning of corporate governance practices. Our intent is to assist policymakers with decisions about the allocations of their limited resources. We do not, however, intend to convey that those elements of the institutional environment that have an insignificant statistical relationship with corporate governance practices are any less important for other reasons. We acknowledge a nation could become economically powerful through improving some elements of the institutional environment while ignoring other elements, such as voice and accountability, and do not encourage this approach.

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**Table 1** Annual changes in country-level GMI corporate governance practices scores from 2006-2010 and Emerging and Developed S&P Designations

| | Mean | Std dev | Min | Max | Emerging Market* | Developed Market* |
|---|---|---|---|---|---|---|
| Australia | -0.15 | 0.41 | -0.67 | 0.26 | | Yes |
| Austria | 0.21 | 0.43 | -0.35 | 0.67 | | Yes |
| Belgium | -0.09 | 0.33 | -0.30 | 0.40 | | Yes |
| Brazil | 0.17 | 0.47 | -0.17 | 0.85 | Yes | |
| Canada | 0.01 | 0.05 | -0.03 | 0.07 | | Yes |
| Chile | -0.46 | 0.47 | -0.95 | 0.17 | Yes | |
| China | 0.11 | 0.32 | -0.17 | 0.40 | Yes | |
| Denmark | 0.04 | 0.41 | -0.50 | 0.37 | | Yes |
| Finland | 0.10 | 0.25 | -0.18 | 0.40 | | Yes |
| France | 0.06 | 0.17 | -0.19 | 0.17 | | Yes |
| Germany | 0.04 | 0.37 | -0.42 | 0.49 | | Yes |
| Greece | 0.43 | 0.67 | -0.29 | 1.28 | Yes | |
| Hong Kong | -0.26 | 0.21 | -0.43 | 0.04 | | Yes |
| India | -0.03 | 0.31 | -0.30 | 0.41 | Yes | |
| Indonesia | -0.17 | 0.66 | -0.63 | 0.80 | Yes | |
| Ireland | 0.02 | 0.23 | -0.23 | 0.26 | | Yes |
| Israel | -0.02 | 0.29 | -0.36 | 0.35 | Yes | |
| Italy | -0.10 | 0.47 | -0.63 | 0.31 | | Yes |
| Japan | -0.18 | 0.51 | -0.92 | 0.25 | | Yes |
| South Korea | 0.41 | 0.92 | -0.35 | 1.74 | Yes | |
| Malaysia | -0.13 | 0.29 | -0.50 | 0.16 | Yes | |
| Mexico | -0.67 | 0.48 | -1.16 | -0.05 | Yes | |
| Netherlands | -0.02 | 0.24 | -0.28 | 0.19 | | Yes |
| New Zealand | 0.01 | 0.25 | -0.29 | 0.28 | | Yes |
| Norway | -0.17 | 0.43 | -0.69 | 0.27 | | Yes |
| Poland | -0.27 | 0.29 | -0.62 | -0.02 | Yes | |
| Portugal | -0.06 | 0.27 | -0.31 | 0.28 | Yes | |
| Russia | -0.25 | 0.38 | -0.52 | 0.29 | Yes | |
| Singapore | -0.21 | 0.39 | -0.74 | 0.12 | | Yes |
| South Africa | -0.04 | 0.24 | -0.40 | 0.14 | Yes | |
| Spain | -0.24 | 0.38 | -0.73 | 0.20 | | Yes |
| Sweden | 0.11 | 0.36 | -0.41 | 0.42 | | Yes |
| Switzerland | 0.06 | 0.37 | -0.25 | 0.60 | | Yes |

| | | | | | | |
|---|---|---|---|---|---|---|
| Taiwan | -0.17 | 0.35 | -0.61 | 0.18 | Yes | |
| Turkey | -0.38 | 0.29 | -0.79 | -0.11 | Yes | |
| United Kingdom | 0.08 | 0.15 | -0.12 | 0.24 | | Yes |
| United States | -0.02 | 0.04 | -0.07 | 0.03 | | Yes |

*Emerging and Developed Market designations taken from Standard and Poor's.

**Table 1A** Descriptive statistics for institutional environment (independent) variables

Descriptive statistics for emerging nations

|  | Obs | Mean | Std dev | Min | Max |
|---|---|---|---|---|---|
| VADIFF | 64 | 0.00 | 0.05 | -0.09 | 0.14 |
| PSNVDIFF | 64 | -0.01 | 0.17 | -0.44 | 0.47 |
| GEDIFF | 64 | 0.01 | 0.09 | -0.21 | 0.17 |
| RQDIFF | 64 | 0.00 | 0.09 | -0.23 | 0.28 |
| RLDIFF | 64 | 0.01 | 0.09 | -0.23 | 0.21 |
| CCDIFF | 64 | -0.02 | 0.11 | -0.23 | 0.23 |

Descriptive statistics for developed nations

|  | Obs | Mean | Std dev | Min | Max |
|---|---|---|---|---|---|
| VADIFF | 84 | 0.00 | 0.04 | -0.13 | 0.11 |
| PSNVDIFF | 84 | -0.02 | 0.10 | -0.25 | 0.24 |
| GEDIFF | 84 | -0.01 | 0.10 | -0.27 | 0.23 |
| RQDIFF | 84 | 0.01 | 0.08 | -0.20 | 0.17 |
| RLDIFF | 84 | 0.01 | 0.05 | -0.16 | 0.13 |
| CCDIFF | 84 | -0.02 | 0.09 | -0.30 | 0.21 |

**Table 2** Pearson correlation analysis

|  | GOVDIFF | VADIFF | PSNVDIFF | GEDIFF | RQDIFF | RLDIFF | CCDIFF |
|---|---|---|---|---|---|---|---|
| GOVDIFF | 1 | | | | | | |
| VADIFF | -0.15* | 1 | | | | | |
| PSNVDIFF | -0.06 | 0.11 | 1 | | | | |
| GEDIFF | 0.02 | 0.05 | 0.15* | 1 | | | |
| RQDIFF | 0.17** | -0.02 | 0.26*** | 0.39*** | 1 | | |
| RLDIFF | 0.15* | 0.16* | 0.28*** | 0.29*** | 0.39*** | 1 | |
| CCDIFF | -0.10 | 0.13 | 0.16* | 0.21 | 0.33*** | 0.37*** | 1 |

GOVDIFF denotes the annual change of the corporate governance scores measured by Governance Metrics International (GMI). VADIFF denotes the annual difference between the value of voice and accountability in time t+1 and that of voice and accountability in time t. PSNVDIFF denotes the difference between the value of political stability and absence of violence in time t+1 and that of political stability and absence of violence in time t. GEDIFF denotes the difference between the value of government effectiveness in time t+1 and that of government effectiveness in time t. RQDIFF denotes the difference between the value of regulatory quality in time t+1 and that of regulatory quality in time t. RLDIFF denotes the difference between the value of rule of law in time t+1 and that of rule of law in time t. CCDIFF denotes the difference between the value of control of corruption in time t+1 and that of control of corruption in time t. *, **, ***, denote $p<0.1$, $p<0.05$, $p<0.01$, respectively.

**Table 3** Regression of the change in country-level corporate governance practices scores on changes in institutional variables for a five-year period (four measures of annual changes per country between 2006-2010 for corporate governance practices and for the institutional environment variables)

|  | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| VADIFF | -1.23* | -0.99 | -0.62 | -0.03 |
|  | (-1.88) | (-1.26) | (-0.90) | (-0.04) |
| PSNVDIFF | -0.35 | -0.26 | -0.18 | 0.00 |
|  | (-1.52) | (-0.93) | (-0.69) | (0.02) |
| GEDIFF | -0.22 | -0.09 | -0.37 | -0.26 |
|  | (-0.73) | (-0.25) | (-1.37) | (-0.86) |
| RQDIFF | 0.96** | 0.93* | 0.77** | 0.68 |
|  | (2.53) | (1.92) | (2.36) | (1.46) |
| RLDIFF | 1.30** | 1.31** | 1.14** | 1.10* |
|  | (2.17) | (2.00) | (2.16) | (1.94) |
| CCDIFF | -0.85** | -0.72 | -0.64 | -0.34 |
|  | (-2.06) | (-1.37) | (-1.55) | (-0.65) |
| CONSTANT | -0.09*** | -0.13 | 0.10 | 0.06 |
|  | (-2.80) | (-0.75) | (1.12) | (0.35) |
| Country fixed effects | NO | YES | NO | YES |
| Year fixed effects | NO | NO | YES | YES |
| Sample Size | 148 | 148 | 148 | 148 |
| Adjusted R squared | 0.08 | 0.10 | 0.16 | 0.23 |

In summary, change in rule of law has a significant effect on changes in corporate governance practices. For a discussion of the different models, see the text. VADIFF denotes the difference between the value of voice and accountability in time t+1 and that of voice and accountability in time t. PSNVDIFF denotes the difference between the value of political stability and absence of violence in time t+1 and that of political stability and absence of violence in time t. GEDIFF denotes the difference between the value of

government effectiveness in time t+1 and that of government effectiveness in time t. RQDIFF denotes the difference between the value of regulatory quality in time t+1 and that of regulatory quality in time t. RLDIFF denotes the difference between the value of rule of law in time t+1 and that of rule of law in time t. CCDIFF denotes the difference between the value of control of corruption in time t+1 and that of control of corruption in time t. t-statistics obtained from heteroskedasticity-robust standard errors are in brackets. *, **, ***, denote $p<0.1$, $p<0.05$, $p<0.01$, respectively.

**Table 4A** For emerging nations, the regression of the change in country-level corporate governance practices scores on changes in institutional environment variables for a five-year period (four measures of annual changes per country between 2006-2010 for corporate governance practices and for the institutional environment variables)

|  | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| VADIFF | -1.04 | -0.40 | -0.94 | -0.29 |
|  | (-0.87) | (-0.29) | (-0.76) | (-0.20) |
| PSNVDIFF | -0.58* | -0.38 | -0.59 | -0.32 |
|  | (-1.96) | (-1.01) | (-1.50) | (-0.74) |
| GEDIFF | -0.23 | -0.02 | -0.65 | -0.39 |
|  | (-0.34) | (-0.03) | (-0.87) | (-0.58) |
| RQDIFF | 1.32* | 1.41* | 1.07 | 1.09 |
|  | (1.80) | (1.70) | (1.60) | (1.44) |
| RLDIFF | 1.78** | 1.58* | 2.21*** | 1.97** |
|  | (2.17) | (1.77) | (2.62) | (2.29) |
| CCDIFF | -1.06 | -0.88 | -0.94 | -0.68 |
|  | (-1.34) | (-0.92) | (-1.10) | (-0.64) |
| CONSTANT | -0.14** | -0.01 | 0.08 | 0.18 |
|  | (-2.45) | (-0.02) | (0.41) | (0.55) |
| Country fixed effects | NO | YES | NO | YES |
| Year fixed effects | NO | NO | YES | YES |
| Sample Size | 64 | 64 | 64 | 64 |
| Adjusted R squared | 0.06 | 0.16 | 0.08 | 0.19 |

Despite a smaller sample size, the effect of the change in rule of law (RLDIFF) on change in corporate governance practices is greater when emerging nations are focused on. For a discussion of the different models, see the discussion in the text. For an explanation of the variables, see Table 3. t-statistics obtained

from heteroskedasticity-robust standard errors are in brackets. *, **, ***, denote $p<0.1$, $p<0.05$, $p<0.01$, respectively.

**Table 4B** For developed nations, the regression of the change in country-level corporate governance practices scores on changes in institutional variables for a five-year period (four measures of annual changes per country between 2006-2010 for corporate governance practices and for the institutional environment variables)

| | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| VADIFF | -1.68* | -1.71* | -0.21 | 0.26 |
| | (-1.93) | (-1.75) | (-0.28) | (0.26) |
| PSNVDIFF | 0.03 | -0.03 | 0.38 | 0.32 |
| | (0.09) | (-0.06) | (1.19) | (0.97) |
| GEDIFF | -0.11 | -0.13 | -0.32 | -0.36 |
| | (-0.34) | (-0.31) | (-1.14) | (-0.99) |
| RQDIFF | 0.60 | 0.57 | 0.64 | 0.61 |
| | (1.39) | (0.85) | (1.47) | (0.84) |
| RLDIFF | 0.27 | 0.49 | -0.15 | -0.05 |
| | (0.34) | (0.54) | (-0.25) | (-0.08) |
| CCDIFF | -0.81** | -0.74 | -0.50* | -0.17 |
| | (-2.24) | (-1.42) | (-1.73) | (-0.39) |
| CONSTANT | -0.05 | -0.11 | 0.17*** | 0.09 |
| | (-1.19) | (-0.62) | (2.77) | (0.52) |
| Country fixed effects | NO | YES | NO | YES |
| Year fixed effects | NO | NO | YES | YES |
| Sample Size | 84 | 84 | 84 | 84 |
| Adjusted R squared | 0.05 | -0.11 | 0.29 | 0.23 |

There is no effect of the change in rule of law (RLDIFF) on change in corporate governance practices for developed economies. For a discussion of the different models, see the discussion in the text. For an explanation of the variables, see Table 3. t-statistics obtained from heteroskedasticity-robust standard errors are in brackets. *, **, ***, denote $p<0.1$, $p<0.05$, $p<0.01$, respectively.

**Table 5A** Interaction term for emerging nations

| | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| GEDIFF | 0.67 | 1.24* | 0.20 | 0.68 |
| | (1.13) | (1.75) | (0.29) | (1.03) |
| CCDIFF | -1.66** | -0.97 | -1.44* | -0.75 |
| | (-2.27) | (-1.20) | (-1.87) | (-0.85) |
| RLDIFF | 1.62** | 1.49 | 1.93*** | 2.15*** |
| | (2.27) | (1.52) | (2.84) | (2.71) |
| GEDIFF*CCDIFF | 12.39 | 21.87* | 14.45* | 28.35** |
| | (1.47) | (1.88) | (1.67) | (2.44) |
| GEDIFF*RLDIFF | 7.07 | 1.89 | 8.95 | 5.82 |
| | (0.71) | (0.15) | (1.03) | (0.52) |
| RLDIFF*CCIFF | 9.88 | -1.93 | 6.01 | -10.26 |
| | (1.23) | (-0.26) | (0.81) | (-1.57) |
| CONSTANT | -0.25*** | -0.095 | 0.01 | 0.18 |
| | (-3.72) | (-0.22) | (0.03) | (0.52) |
| Country fixed effects | NO | YES | NO | YES |
| Year fixed effects | NO | NO | YES | YES |
| Sample Size | 64 | 64 | 64 | 64 |
| Adjusted R squared | 0.12 | 0.20 | 0.16 | 0.31 |

This analysis likewise focuses on the interaction between the two institutional environment variables found to have a significant effect on changes in corporate governance practices in emerging nations. The interaction (GEDIFF*CCDIFF) between change in government effectiveness and change in control of corruption has a significant effect when considering emerging economies. t-statistics obtained from heteroskedasticity-robust standard errors are in brackets. *, **, ***, denote $p<0.1$, $p<0.05$, $p<0.01$, respectively.

**Table 5B** Interaction term for developed nations

|  | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| RQDIFF | 0.45 | 0.37 | 0.46 | 0.41 |
|  | (1.01) | (0.59) | (1.22) | (0.67) |
| RLDIFF | 0.30 | 0.50 | -0.20 | -0.06 |
|  | (0.43) | (0.58) | (-0.35) | (-0.09) |
| RQDIFF*RLDIFF | 16.06** | 13.65* | 11.31** | 7.71 |
|  | (2.42) | (1.88) | (1.97) | (1.31) |
| CONSTANT | -0.06 | -0.14 | 0.17 | 0.07 |
|  | (-1.60) | (-0.73) | (3.09) | (0.46) |
| Country fixed effects | NO | YES | NO | YES |
| Year fixed effects | NO | NO | YES | YES |
| Sample Size | 84 | 84 | 84 | 84 |
| Adjusted R squared | 0.03 | -0.11 | 0.31 | 0.26 |

This analysis also focuses on the interaction between the two institutional environment variables found to have a significant effect on changes in corporate governance practices, in developed nations. There is some evidence of an interaction (RQDIFF*RLDIFF) effect between change in rule of law (RLDIFF) and change in regulatory quality (RQDIFF) for developed nations. See the text for additional discussion. t-statistics obtained from heteroskedasticity-robust standard errors are in brackets. *, **, ***, denote $p<0.1$, $p<0.05$, $p<0.01$, respectively.

**Endnote**

[i] The coefficient of RLDIFF is 1.10 in Model 3 in table 3. The standard deviation of the change of rule of law is 0.067 and the standard deviation of the change of corporate governance practices is 0.399.  1.1*(0.067/0.399) = 0.18.