International evidence on the link between quality of governance and stock market performance

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Abstract

This paper examines the link between country-level governance and global stock market returns. We find a negative relation between governance quality and equity return. Countries with low governance scores, on average, have higher equity returns than those with high governance scores after controlling for global risk factors known to influence international equity returns. This implies that investors associate low governance quality with increased risk and thus demand higher risk premium. We find that the quality of governance as measured by political stability and absence of violence is key governance dimension affecting international equity returns, suggesting that heightened investor concerns over political risks have profound impact on equity markets. Interestingly, we find no evidence that variation in equity returns is affected by the governance indicator representing voice and accountability. The findings of this study provide important policy implications.

JEL classification: G15; G30; G38
Keywords: country-level governance; stock market performance; global risk factors; political stability

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1. Introduction

What role does governance play in influencing a country's stock market performance? Which dimension of the governance framework should be prioritized in today's development agenda? As Kaufmann (2005) remarks, "*governance is not the only thing that matters for development (...). But when governance is poor, policy making in other areas is also comprised.*" Claessens (2006) provides a good review on the link between corporate governance and five other foundations of development, two of which are finance and the structure of the financial system. Undeniably as it is, country-level governance has now become an important policy issue in many countries. Several structural reforms associated with the increasing trends of globalization, for examples, opening up of financial markets, cross-border capital flows, trade liberalization, and other economic or financial reforms have inevitably increased countries' exposure to systemic risks and various market forces. That said, it becomes important for countries to have good governance systems in order to remain relevant in a globally competitive financial markets.

The quality of a country's governance is known to be affecting the operation of financial and capital markets through its influences on the availability of external financing, cost of funding, market valuations, and quality of investments (see, Hail and Leuz, 2006; Hooper et al., 2009; Chen et al., 2009; Giannetti and Koskinen, 2010; Chiou et al., 2010; among others). It has now been well established that cross-country differences in governance framework have important implications on corporate activities and the behavioural patterns of investors, firms, and other constituencies in the financial markets. In their influential and widely cited articles, La Porta et al. (1997, 1998, 2000, 2002) have highlighted the important

roles of laws and legal enforcement in affecting the governance of firms, corporate valuations, development of markets, and economic growth. According to the authors, the observed differences among countries in the availability of external financing, corporate ownership structures, dividend payouts, and in the overall development of financial markets can be explained by one common element, i.e., the differences in laws and the extent to which those laws are effectively enforced across countries. Following these pivotal papers, other studies with similar spirits also produce consistent findings (see, Claessens et al., 2000; Berkowitz et al., 2003; Beck et al., 2003; Klapper and Love, 2004; Lombardo and Pagano, 2006; among others). Admittedly, the enforcement of laws and regulations generally involves various parties such as market regulators, court, firms or market participants themselves and the extent to which laws are effectively enforced hinges on the quality of a country's governance framework.

The importance of country-level governance is also highlighted in some comparative studies that examine how governance framework of a country affects the various mechanisms through which firm-level corporate governance is exercised. While the importance of firm-level governance has been well established in the literature, it must be emphasized that the effective functioning of corporate governance mechanisms hinges on the quality of governance framework of a country. This is because firms do not operate in a vacuum as they are affected by the governance systems in which they exist. The important interaction between governance mechanism at firm level and country-level governance framework is illustrated in a number of cross-country studies for examples, Klapper and Love (2004), Durnev and Kim (2005), Chen et al., 2009, Bruno and Claessens (2009), among others. These studies indicate that the effectiveness of firm-level corporate governance in affecting corporate policies and decisions is somewhat influenced by the quality of a country's governance framework. The study of Klapper and Love (2004) examines how differences in

firm-level governance mechanism relate to country-level legal system and find strong evidence that improvement in the efficiency of a country's legal infrastructure contribute to enhancing the average governance ranking at the firm level. More importantly, their findings show that in countries with weak legal framework, while firms can to a certain extent independently improve their firm-level governance provisions, such efforts cannot completely substitute for the absence of a good legal framework. Such finding is supportive of the argument that firms are likely to be constrained by governance provisions at country-level and thus have restricted capacity in shaping their own governance. Given that the effects of firms' corporate governance on various aspects of firms' activities are consequently reflected in stock prices and that the quality of a country's governance has important influences on these effects, this study examines the link between quality of governance framework and stock market performance for a sample of forty eighth countries with complete relevant data from January 2002 through December 2008. We investigate whether differences in country-level governance affect international equity returns after controlling for global risk factors known to affect variation in stock returns. We employ the six governance dimensions of the World Bank's Worldwide Governance Indicators (WGI) to proxy for country-level governance framework and Morgan Stanley Capital International (MSCI) country indices to calculate international equity returns. Specifically, we examine the influence of each of the governance indicator portraying various dimensions of governance in a country, on equity return. We employ a two-stage estimation procedure that requires the estimations of time-series and cross-sectional regressions. The findings of this study expand existing literature on country-level governance and provide valuable insights for policy makers to sharpen governance-related policies that form top priority in today's development agenda. The paper is organized as follows. Discussion on related literature is provided in the

next section. Section 3 presents the data and methodology. Findings are reported in Section 4 and concluding remarks are offered in Section 5.

2. Literature Review

Theoretical and empirical research on the legal approach to corporate governance has collectively emphasized that laws and quality of their enforcements are essential components of corporate governance and finance. The observed cross-country differences in the effectiveness of corporate governance mechanisms and in the level of capital markets development can be explained by one key factor, which is the variation in laws and its enforcement. In other words, how well investors are protected by those laws. The importance of laws and their enforcements is highlighted in La Porta et al. (1997, 1998). According to the authors, in countries where the rights of outside investors are well-enforced by market regulators and courts, investors are willing to provide financing to firms. In contrast, in countries where the legal systems lack effectively enforced rights, external financing mechanisms would not work well. Similarly, the findings of Bhattacharya and Daouk (2002, 2009) show that the mere existence of insider trading laws per se does not reduce the cost of equity and risk-adjusted expected returns on equity if those laws are not well-enforced, suggesting that no law is better than unenforced good law. In fact, the findings of Bhattacharya and Daouk (2009) show that the cost of equity *actually rises* if a country introduces an insider trading law without enforcing it.

The existing literature offers plenty of evidence on the impact of governance on performance using firm-level data, either within individual country or in cross-country studies. Despite the extensive research, no clear consensus exists on the relationship between governance and various measures of performance. Love (2010) provides a good review on corporate governance and performance around the world. Daouk et al. (2006) examines how

market performance is affected by capital market governance, defined as "*the sets of laws, rules, and regulations that govern the functioning of capital markets.*" Their findings indicate that improvement in capital market governance such as well-enforced insider laws, improved accounting standards, and fewer short-selling restrictions all contribute to increasing liquidity in the market, improving pricing efficiency, and decreasing the cost of capital. This evidence suggests a negative relationship between governance and risk, i.e., better governance, lower risk, and is supportive of the view that investors in general associate poor capital market governance with increased risk. That is, investors in poorly governed capital markets would naturally demand higher equity premium for bearing higher risk. The findings of Chiou et al. (2010) also suggest that efficient legal and political settings characterized by high quality legal system, adequate investor protection, low level of corruption, and upright social and political environments lead to increases in the performance of equity investment and decreases in risks. Li and Filer (2007) concur that countries with better property rights protection, unbiased and transparent legal systems tend to attract more equity investors.

Hooper et al. (2009) examine the impact of country-level governance on the risks and various performance measures of global stock markets. Their findings show that better governed countries have stock markets with higher equity returns and lower levels of risk. Specifically, the quality of governance as measured by political stability is found to be the key governance dimension that positively affects international equity returns. According to the authors, the finding of a positive relation between the quality of governance and stock return is consistent with the argument of demand centred view. That is, good governance quality reduces transaction costs of business operation, increases growth prospects and profitable projects available to firms. This in turn increases the return to shareholders through a higher demand for equity finance. Albuquerque and Wang (2008) examine the effect of

country-level investor protection on equity risk premium. Their findings indicate that poor investor protection leads to higher investments, resulting in increased stock price volatility, larger risk premiums, and hence higher required rate of return for stocks. Such results parallel those of Harvey (1995) that emerging markets in general have weaker governance structure than developed markets and thus have larger equity risk premium and higher return volatility. Lombardo and Pagano (2002) indicate that better governance lowers the cost and time spent in monitoring the company and thus reduces the stock returns required by shareholders. Similarly, the findings of Hail and Leuz (2006) show that expected returns are higher in poor corporate governance countries.

The theoretical model of Giannetti and Koskinen (2010) highlights the importance of considering the demand for equity in understanding why weak investor protection leads to lower expected returns. Their model shows that if investor protection is weak, wealthy investors have more incentives to acquire control, resulting in high demand for weak corporate governance stocks. Due to high demand, stock prices thus become too high to reflect the possibility of expropriation of private benefits by controlling shareholders. Thus, this explains why stocks have lower expected returns when investor protection is weak. The implications of their theoretical model are consistent with existing empirical findings that equity returns are lower in weak investor protection countries (Gompers et al., 2003; Core et al., 2006; Cremers and Nair, 2005; Yermack, 2006; Lombardo and Pagano (2006); Fan et al., 2008; among others). Fan et al. (2008) provide evidence that firms in countries plagued by poor public governance tend to finance their investments with more debt than equity issues. Since stock markets with poor governance structure have higher agency and transaction costs than those with good governance framework, and given that equity provides investors with lesser degree of monitoring than debt, demand on equity would decline in poorly governed markets resulting in lower returns on equity. The findings of Gompers et al. (2003) suggest

that poor governance leads to high agency costs associated with managerial perquisite consumption and overinvestment, leading to lower valuations by investors and thus lower returns. Similarly, Lombardo and Pagano (2006) find positive association between the quality of legal institutions and risk-adjusted return on equity and argue that the quality of legal institutions can increase equity return by reducing agency costs between managers and shareholders. That is, the lower amount of private benefits expropriated by managers allows firms to offer higher rate of returns to investors.

Past studies have also highlighted the important interaction between country-level governance structure and firm-level corporate governance. Chen et al. (2009) show that firm-level corporate governance is negatively related to cost of capital and the effect is more pronounced in countries where legal protection of investors' rights is relatively weak. Klapper and Love (2004) examine the interaction between firm-level governance and country-level investor protection in terms of shareholder protection and judicial efficiency. Their findings show that good firm-level corporate governance is positively related to performance and market valuation, and that firm-level governance is even more important in countries with weak protection of shareholders' rights and poor efficiency in the judicial systems. Nevertheless, the authors emphasize that their findings do not imply that firm-level governance can substitute for judicial reform at country level. This is because their findings also reveal that, in countries with weak overall legal infrastructure, firms on average have lower governance rankings, suggesting that firm-specific governance mechanisms cannot completely serve as replacement for the absence of good laws and effective enforcements. Collectively, the available literature implies that the quality of country-level framework has profound impact on corporate policies and the functioning of capital markets through its various influences on the availability of external financing, funding costs, quality of investments, firm and market valuations, among others. Given that the effects of governance

quality on corporate and market activities are consequently reflected in stock prices, this study seeks to examine how the quality of a country's governance framework affects its stock market performance. Specifically, we examine the influence of each of the governance indicator portraying various dimensions of governance in a country on measures of stock market performance.

3. Data and Methodology

The sample employed in this study comprised of forty eight countries with complete relevant data for the period from January 2002 through December 2008. The data used are the Morgan Stanley Capital International (MSCI) country indices, MSCI world stock market index, US 1-month Treasury bill (T-bill) rate, G7 consumer price index (CPI), G7 industrial production index (IPROD), G10 exchange rate index (FOREX), crude oil spot price (OIL), and the World Bank's Worldwide Governance Indicators (WGI).

The MSCI country index series are value-weighted national indices with dividend reinvestments and are used to calculate international equity returns. MSCI world index is value-weighted world index, used as a proxy for the world market portfolio. The US 1-month T-bill rate serves as a proxy for international risk-free rate. The data on MSCI country index series, MSCI world stock market index, and US 1-month T-bill were sourced from Datastream. We include four global risk factors known to influence international stock returns (see Hooper et al. (2009); Hail and Leuz (2006); Ferson and Harvey (1993); Dumas and Solnik (1995); and Mateus (2004)). The inflation rate risk factor, CPI is the weighted average of percentage changes in consumer price indices of the G7 countries, using relative shares of total real GDP as weights. FOREX is the first difference in the log of weighted average of the foreign exchange value of the US dollar against a subset of the G10 broad index currencies that circulate widely outside the country of issue. The G10 exchange rate

index is the bilateral exchange rate between US and its 10 main trading countries, i.e. the G7 countries with the exception of the US, plus the following four countries: the Netherlands, Belgium, Sweden, and Switzerland. The world oil risk factor, OIL is the change in the monthly average OPEC oil basket price in US dollar. IPROD is the weighted average of industrial production growth rates in G7, using production shares as the weights countries. Monthly data on CPI, OIL, and IPROD were retrieved from Datastream while FOREX data were sourced from the Federal Reserve Bank of St. Louis. Data on governance indicators are sourced from the World Bank's Worldwide Governance Indicators (WGI), available at www.govindicators.org . Kaufmann et al. (2009) compiles and provides a comprehensive description on methodology, data sources, and interpretations of the scores for the six governance indicators. Kaufmann et al. (2009) broadly define governance as *"the traditions and institutions by which authority in a country is exercised. This include a process by which governments are selected, monitored, and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them."* According to the authors, such definition is well-captured in the following six governance dimensions: Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption. The governance data are available for every other year between 1996 and 2002, and annually since 2002. Detailed description on the six governance indicators is provided in Appendix 1.

To examine the impact of a country's governance system on the cross-sectional variation in international equity returns, we employ a two-stage estimation procedure that control for the effects of world market movements and global risk factors on the cross-country variation in equity returns. In the first stage, we estimate a time-series regression of each country's stock market excess return on the excess return of the world market index and

global risk factors using seven-year monthly time-series data from January 2000-December 2008. The time-series regression specification is shown in the following Equation [1].

$$R_{it} - R_t^{RF} = \alpha_i + \beta_i^{WORLD}(R_t^{W} - R_t^{RF}) + \sum_{j=1}^{J} \beta_{ij} F_{jt} + \mu_{it}$$

$$t = 1,...,T; \; i = 1,...,N \qquad [1]$$

where R_{it} is the return of country i's MSCI stock index for month t; R_t^{RF} is the US 1-month T-bill rate; R_t^{W} is the return on MSCI USD value-weighted world index for the month t; α_i is the risk-adjusted stock return of country i; F_{jt} is j global risk factors for month t and J refers to the number of risk factors; β_{ij} is the beta coefficient of risk factor j for country i and it captures the sensitivity of country i's stock return to j risk factor in month t; μ_{it} is the error term of country i for the month t and it captures the remaining country-specific disturbances that are not explained by the model. The four global risk factors included in the model are G7 monthly inflation rate (CPI), changes in the G10 exchange rate index (FOREX), crude oil spot price changes (OIL), and G7 industrial production changes (IPROD) (see Hooper et al. (2009); Hail and Leuz (2006); Ferson and Harvey (1993); Dumas and Solnik (1995); and Mateus (2004)).

In the second-stage estimation procedure, we employ a cross-sectional regression model to examine the link between quality of governance system and stock market returns. We regress measures of stock market performance on governance indicators and beta coefficients estimated from the first-stage time-series regression model of Equation [1]. The second-stage regression specification is shown by equation [2].

$$\Upsilon_i = \psi_0 + \psi_1(\beta_i^{WORLD}) + \psi_2(\beta_i^{CPI}) + \psi_3(\beta_i^{FOREX}) + \psi_4(\beta_i^{OIL}) + \psi_5(\beta_i^{IPROD}) + \psi_6(G_i) + \varepsilon_i$$

$$i = 1,...,N \qquad [2]$$

where Υ_i represents stock market performance of country *i*. We employ four return-based performance measures as the dependent variable. The first measure is Alpha of country *i*, α_i, the risk-adjusted return estimated from the first-stage time series regression. The second performance measure is the average monthly return on a country's MSCI index in excess of the US 1-monthT-bill rate over the seven-year period ($\hat{r}_i - \hat{r}^{rf}$). The third measure is similar to the second and is calculated as the average monthly return on a country's MSCI index in excess of the average monthly return on the MSCI world index ($\hat{r}_i - \hat{r}^{world}$). The fourth return measure is the Sharpe ratio, calculated over a seven-year period as the average monthly excess equity return as a proportion to the variation in the MSCI country index, measured by the monthly standard deviation of returns ($\hat{r}_i - \hat{r}^{rf}$)/σ_i. The Sharpe ratio makes adjustment for the total risk in each country. With the exception of Alpha, the remaining three performance measures are similar to those employed by Hooper et al. (2009). The vector of betas in Equation 2 were estimated from the first-stage time series regression and they captures the sensitivity of country *i*'s stock return to the return on MSCI world index and global risk factors as described previously. The vector of betas are included in the regressions as control variables to remove the effects of global risk factors known to affect international equity returns. The governance indicator, G_i represents governance dummy variable for each of the six country-level governance indicator. Given the potential of high correlation among the six governance indicators, we employ separate regression model for each governance indicator. We define G_i as dummy variable equals 1 if a country has weak governance system or 0 otherwise. We divide the sample of countries into groups of high and low governance scores based on each of the six governance indicators. Countries with weak governance structure belong to the low score group and it consists of countries in which the average score of governance indicator *i* is lower than the median of all countries' equally weighted average score of *i* indicator. Conversely, group with high governance score comprises countries with

strong governance framework in which the average governance score for each indicator is higher than the median. The six governance dimensions are Voice and Accountability (G1), Political Stability and Absence of Violence/Terrorism (G2), Government Effectiveness (G3), Regulatory Quality (G4), Rule of Law (G5), and Control of Corruption (G6).

4. Empirical Findings and Discussion

Table 1 reports summary statistics of monthly stock returns data by country from January 2002 through December 2008. Table 2 presents descriptive statistics of stock return measures, governance indicators, and global risk factors over the sample period. On government indicators, Government Effectiveness (G3) has the highest positive average score, followed by Regulatory Quality (G4), Rule of Law (G5), Voice and Accountability (G1), and Control of Corruption (G6). Given that higher score corresponds to better outcomes, the negative average score of Political Stability and Absence of Violence (G2) points toward the increasing likelihood of politically-motivated instability in a country. In addition, G2 score has the highest standard deviation, indicating that political stability varies substantially across countries. On stock returns, the two risk-adjusted return measures, Alpha and Sharpe ratio have mean values of 0.0569 and 0.6884 respectively. The remaining two return measures, i.e., MSCI country return in excess of US 1-month T-bill rate ($\hat{r}_i - \hat{r}^{rf}$) and MSCI country return in excess of the return of MSCI World index ($\hat{r}_i - \hat{r}^{world}$) have mean values of 0.0532 and 0.0620 respectively. Both of these return measures do not control for individual local market risk. On global risk factors, negative mean values of -0.8059 and -0.9286 are observed for both inflation rate and exchange rate risk factors.

Table 3 shows the pair-wise correlations for variables employed in the study. The four return measures have very high positive correlations with each other with values ranging from 0.90 to 0.99. This suggests that the stock return measures can serve as substitute for one

another. On global risk factors, the exchange rate risk factor, β^{FOREX} is significantly and negatively correlated with all the four return measures with correlation coefficients ranging from -0.49 to -0.42. The sensitivity of a country's stock market return to the return on the world market index, β^{WORLD} has significant positive correlations with all of the four return measures. The observed correlation coefficients range from 0.54 to 0.59 and Alpha is shown to have the highest correlation with world beta. In addition, the crude oil price and industrial production risk factors, β^{OIL} and β^{IPROD} respectively are shown to be positively correlated with the four return measures. Collectively, most of the governance indicators are shown to be significantly and negatively correlated with return measures. Political Stability and Absence of Violence (G2) has the highest negative significant correlation of 0.64 with Alpha. This suggests that countries characterized by high political instability (low score on G2) have high stock market return. Such correlation structures imply that investors of countries with poor governance quality receive high stock returns as compensations for bearing governance related risks. The six governance indicators have very high positive correlations with each other, indicating potential problem of multicollinearity if all of the governance indicators are included in one regression model. The correlation coefficients range from 0.58 to 0.92 with Rule of Law (G5) and Control of Corruption (G6) having the highest correlation coefficient of 0.92. The lowest correlation coefficient of 0.58 is observed between Voice and Accountability (G1) and Political Stability and Absence of Violence (G2).

In Table 4, we present comparison of mean differences in stock market returns of countries with high and low governance scores for each of the six governance indicators. As shown, stock market returns differ significantly across the high and low governance groups for all the six governance indicators. The average stock returns for high governance group is lower than that of low governance group. That is, for all the six governance indicators, countries with weak governance structures have higher stock returns than those with strong

governance frameworks. This evidence is consistent with the correlation results between governance indicators and stock return measures. Among the six governance indicators, Political Stability and Absence of Violence (G2) shows the largest negative differences in mean returns between the high and low governance groups. For example, on average, the abnormal return as measured by Alpha is 10.05 percent for countries with low scores on G2 while the corresponding figure is 1.33 percent for countries with high G2 scores.

Table 5 through Table 8 report the findings of the relationships between governance quality and stock market performance using four stock market return measures as dependent variables. The six models (Models 1-6) in each of the Table represent the six governance indicators that are introduced separately into the regression model. The baseline regression represented by model 0 reports the results of the international pricing model. In all regression models, the reported *t*-statistics are based on White (1980)'s heteroskedasticity-consistent standard errors and covariance.

In Table 5, the dependent variable employed is Alpha of each country's stock market representing a risk-adjusted measure of excess return on equity on a country's stock market index. The baseline regression model is significant and has adjusted R-squared of 0.58. The results show that the coefficients of the world beta and industrial production are positive and significantly related to Alpha. This evidence suggests that countries with higher exposures to world market movements and global risk factor as proxied by changes in industrial production record higher average risk-adjusted equity returns. The coefficient of inflation rate is negative and significant, indicating that increasing inflation rate contributes to lowering stock returns. As shown, models 1-6 are significant and have adjusted R-squared that range from 0.592 to 0.645. The coefficient of β^{WORLD} is consistently positive and highly significant across the six models, indicating that a country's high exposure to the world market movements is associated with high stock market performance. As shown in model 1,

the coefficient of governance dummy for Voice and Accountability (G1) is not significantly different from zero. This implies that variation in equity returns is not affected by media independence and the extent to which a country's citizens have a say in selecting governments and holding those in power responsible for their actions. Model 2 shows the highest R-squared of 0.645 suggesting that among the six governance indicators, Political Stability and Absence of Violence (G2) has the most explanatory power in explaining international stock returns. The coefficient of governance dummy for Political Stability and Absence of Violence (G2) is positive and highly significant. This suggests that the average risk-adjusted stock returns are higher in countries with low scores on this governance indicator measuring various aspects of the political process of a country. For example, countries that are constantly struggling with the issues of selecting and replacing governments have high likelihood of political instability induced by politically-motivated hostility and violence. Accordingly, countries characterized by low governance scores have higher risk and thus investors are compensated in the form of higher stock returns. In model 3, the coefficients of world beta, crude oil price, and governance dummy of Government Effectiveness (G3) are positive and significant at the 0.05 level or less. Countries rated lowly on government effectiveness indicator are generally countries with low quality of public services, poor policy planning and implementation, and are subjected to high political pressures in delivering public services. The results suggest that ineffective government increases a country's equity returns after controlling for its exposures to world market movements and global risk factor as measured by changes in world oil price. As shown in models 4, 5, and 6, the coefficients of dummy governance for Regulatory Quality (G4), Rule of Law (G5), and Control of Corruption (G6) are all positively and significantly related to Alpha, suggesting that countries with weak governance scores on these indicators are associated with high equity returns after controlling for exposures to world market movement

and global risk factors such as inflation rate, world oil price, and industrial production. While the coefficient of inflation risk factor is negative and significant, the coefficients of world beta, oil price, and industrial production risk factors are positive and significantly related to stock returns. The positive and significant dummy coefficient of Regulatory Quality (G4) captures the effects of poor regulatory framework on equity returns across countries. Generally, countries with low regulatory quality have more regulatory restraints in the financial markets, labor market, and in the overall business environment. Thus, a country with high score on Regulatory Quality provides more incentives and better investment climate for private sector development than a country with low score. That said, poor governance environment associated with weak regulatory structure increases a country's risk exposure which is ultimately reflected in higher risk-adjusted equity returns. Similarly, in model 5, countries that have low scores on Rule of Law (G5) are associated with high stock market returns. As this governance indicator measures the quality of investor protection arising from legal enforcement of contracts, judicial independence, and protection of property rights, countries rated low on this indicator generally means that investors' interest are not well protected. Accordingly, investors in countries with weak investor protection would perceive their investments to be more risky and thus demand to be compensated with higher rate of returns. On the sixth governance indicator, Control of Corruption (G6) in model 6, the coefficient of the dummy governance is also positively and significantly related to Alpha, suggesting that lack of control for corruption is shown to increase a country's risk-adjusted stock returns. The presence of corruption reduces investors' confidence in the rules that govern their transactions, and thus increases investors' risk of dealings in such financial market. Undoubtedly, a country's higher risk exposure related to lack of control for corruption leads to higher risk-adjusted equity returns. Taken as a whole, the results of Table 5 indicate that with the exception of the governance indicator representing Voice and

Accountability (G1), the remaining five governance indicators (G2-G6) are important in explaining equity returns after controlling for global risk factors.

In Table 6, the dependent variable employed is the average monthly return on MSCI country index in excess of the US 1-monthT-bill rate over the 7-year period ($\hat{r}_i - \hat{r}^{rf}$). The baseline regression model is significant with adjusted R-squared of 0.521 and the coefficients of world beta and industrial production are shown to be positively and significantly related to excess returns. Regression models 1-6 where the six governance indicators are entered into the model separately, are significant and show values of adjusted R-squared that range from 0.534 to 0.594. Consistent with the results reported in Table 5, the coefficient of world beta is positively and significantly related to equity returns across the six models. This evidence implies that higher exposure to world market movements leads to higher average excess stock market returns. In Table 6, the three governance indicators that are shown to have positive effects on a country's excess stock market returns are Political Stability and Absence of Violence (G2); Government Effectiveness (G3); and Rule of Law (G5). That is, investors perceive their investments to be risky in countries that are run by ineffective governments, are constantly in political turmoil, and have poor investor protection. That said, investors would require to be compensated in the form of higher equity returns. The governance dummy coefficients of Voice and Accountability (G1) in model 1, Regulatory Quality (G4) in model 4, and Control of Corruption (G6) in model 6, are all not significantly different from zero. This suggests that excess equity returns are not affected by the quality of governance as measured by voice and accountability, regulatory quality, and control of corruption.

Table 7 reports results using the average monthly return on a country's stock index in excess of the average monthly return on the MSCI world index ($\hat{r}_i - \hat{r}^{world}$) as the dependent variable. The baseline regression model is significant with adjusted R-squared of 0.546 and the coefficients of world beta and world oil price are both positively and significantly related

to excess equity returns. The results of models 1-6 in Table 7 are similar to those reported in Table 6. Governance indicators that are shown to have important influences on international equity returns are Political Stability and Absence of Violence (G2); Government Effectiveness (G3); and Rule of Law (G5). That is, poorly governed countries in these three dimensions are associated with higher average monthly excess returns. As reported, all models are significant and have adjusted R-squared that range from 0.558 to 0.617. The coefficient of the world beta is consistently positive and highly significant across the six models, suggesting that higher exposure to world market movements is associated with higher stock market return. The overall results indicate that countries with weak governance structures have relatively higher risks and consequently higher equity returns, reflecting the positive trade-off between risk and return.

The results in Table 8 are based on regression analyses using the Sharpe ratio of each country as the dependent variable. The baseline model is significant with adjusted R-square of 0.407 and a significant positive coefficient of world beta. Similar to the results reported in previous tables, models 1-6 are significant and have adjusted R-squared values ranging from 0.413 to 0.476. In all the six models, a country's exposure to world market movements is positively associated with risk-adjusted return as shown by a significant positive coefficient of world beta. The only one governance indicator that is found to be positively related to the Sharpe ratio is Political Stability and Absence of Violence (G2). Poor governance setting characterized by low scores on this governance indicator is indicative of instable political environment with power struggles and politically motivated violence. Thus, investors in countries with high political risk are rewarded with higher equity returns for bearing higher level of risk.

In all regression specifications that employ four different return-based performance measures as reported in Tables 5-8, the coefficient of the dummy governance for Political

Stability and Absence of Violence (G2) is consistently positive and significant across the six models, after controlling for global risk factors known to influence international stock returns. Additionally, as shown in Tables 5-8, when G2 is introduced into the regression model, it always yield the highest R-squared value regardless of the return measure employed. Our findings suggest that the quality of governance as measured by political stability is important in explaining the variation in international equity returns. This implies that political framework of a country is key governance dimension that importantly influences stock market returns. Undeniably, political stability is essential and is a necessary condition for various aspects of a country's development, including capital market development. That said, it must be emphasized that when political structure of a country is weak, policy reforms in other areas will only have limited impact. The findings of this study imply that countries with weak political structures should rank political reform high on their development agenda so that policy outcomes in other areas would not be comprised unnecessarily.

5. Conclusion

This paper employs international asset pricing framework to investigate the relationship between country-level governance and the performance of global stock markets over the period January 2002 through December 2008. Specifically, we examine whether or not country-level differences in governance frameworks matter for stock market performance for a sample of forty-eight countries with complete relevant data over the study period. We employ a two-stage estimation procedure that requires the estimations of time-series and cross-sectional regressions. The four return-based performance measures used as dependent variable are alpha, the risk-adjusted return; the average monthly return on a country's MSCI index in excess of the US 1-monthT-bill rate; the average monthly return on a country's

MSCI index in excess of the average monthly return on the MSCI world index; and the Sharpe ratio. Overall, we find that countries with low governance scores, on average, have higher equity returns than those with high governance scores after controlling for the effects of global risk factors. Specifically, countries with weak governance settings characterized by low scores on the following governance indicators representing political stability and absence of violence; government effectiveness; regulatory quality; rule of law; and control of corruption, on average, have higher equity returns than countries with strong governance settings. Interestingly, our findings show that variation in international equity returns is not affected by governance indicator representing voice and accountability. The negative association between governance quality as measured by the scores of governance indicators and equity returns suggests that, poor governance framework increases the risk premium demanded by investors, leading to higher equity returns. Of the six governance indicators, the indicator representing political stability and absence of violence is the only governance dimension that consistently has significant effect on equity returns using all four measures of stock market performance. Such evidence suggests that political environment of a country has important impact on equity market. Political stability is evidently an essential element and is a necessary condition for a well-functioning financial system. In countries where political structures are weak, unless there are improvements in the political frameworks, reforms in other policy areas will only have limited impact. The findings of this study highlight the importance of political dimension and thus imply that political reform deserves urgent policy attention in countries with weak political structures.

Appendix A

Definitions of six dimensions of governance indicators
1. Voice and Accountability - capturing 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. 2. Political Stability and Absence of Violence - capturing perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism. 3. Government Effectiveness - capturing 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. 4. Regulatory Quality - capturing perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. 5. Rule of Law - capturing 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. 6. Control of Corruption - capturing 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.

Adapted from Kaufmann et al. (2009)

Table 1
Summary statistics of stock returns from January 2002 through December 2008

Country	Mean	Standard deviation	Median	Minimum	Maximum
Argentina	0.0311	0.1302	0.0202	-0.3398	0.5989
Australia	0.0057	0.0398	0.0177	-0.1221	0.0735
Austria	0.0044	0.0713	0.0181	-0.2786	0.1218
Belgium	-0.0043	0.0695	0.0125	-0.2927	0.1458
Brazil	0.0174	0.0730	0.0279	-0.2312	0.1740
Canada	0.0047	0.0440	0.0130	-0.1667	0.0646
Chile	0.0108	0.0456	0.0095	-0.1028	0.1567
China	0.0155	0.0830	0.0192	-0.2058	0.1916
Colombia	0.0305	0.0753	0.0368	-0.2145	0.1926
Czech Republic	0.0195	0.0652	0.0287	-0.2438	0.1387
Denmark	0.0048	0.0562	0.0164	-0.1696	0.1317
Egypt	0.0333	0.1013	0.0269	-0.2520	0.3425
Finland	-0.0015	0.0839	-0.0004	-0.2041	0.1907
France	-0.0008	0.0527	0.0102	-0.1687	0.1221
Germany	0.0007	0.0657	0.0064	-0.2036	0.1981
Hong Kong	0.0058	0.0594	0.0059	-0.1853	0.1491
Hungary	0.0092	0.0770	0.0227	-0.3207	0.2308
India	0.0153	0.0811	0.0268	-0.2193	0.1448
Indonesia	0.0231	0.0821	0.0275	-0.2514	0.2269
Ireland	-0.0088	0.0714	0.0085	-0.2321	0.1221
Israel	0.0065	0.0541	0.0120	-0.1128	0.1224
Italy	-0.0009	0.0502	0.0054	-0.1503	0.1022
Japan	-0.0002	0.0536	0.0045	-0.2217	0.1183
Jordan	0.0138	0.0685	0.0139	-0.1927	0.1935
Korea	0.0104	0.0695	0.0184	-0.1967	0.1443
Malaysia	0.0070	0.0438	0.0080	-0.1074	0.1205
Mexico	0.0156	0.0556	0.0277	-0.1962	0.1213
Morocco	0.0147	0.0533	0.0096	-0.1228	0.2469
Netherlands	-0.0021	0.0633	0.0080	-0.2204	0.0905
New Zealand	0.0030	0.0422	-0.0013	-0.1569	0.0955
Norway	0.0069	0.0778	0.0160	-0.2494	0.1314
Pakistan	0.0257	0.0880	0.0166	-0.2005	0.2959
Peru	0.0238	0.0875	0.0369	-0.3084	0.2125
Philippines	0.0089	0.0666	0.0094	-0.1818	0.1877
Poland	0.0082	0.0770	0.0195	-0.2507	0.2121
Portugal	0.0004	0.0573	0.0068	-0.1963	0.1249
Russia	0.0143	0.0996	0.0197	-0.3196	0.2104
Singapore	0.0055	0.0554	0.0109	-0.2180	0.1123
South Africa	0.0122	0.0560	0.0153	-0.1516	0.1538
Spain	0.0043	0.0581	0.0083	-0.1768	0.1585
Sri Lanka	0.0157	0.0928	0.0083	-0.2309	0.4159
Sweden	0.0012	0.0659	0.0058	-0.1668	0.1654
Switzerland	0.0014	0.0457	0.0103	-0.1402	0.1086
Taiwan	0.0020	0.0674	0.0009	-0.1493	0.1797
Thailand	0.0104	0.0735	0.0105	-0.2321	0.3004
Turkey	0.0156	0.1070	0.0134	-0.2265	0.3018
United Kingdom	0.0007	0.0414	0.0122	-0.1371	0.0688
United States	-0.0014	0.0425	0.0069	-0.1692	0.0703

Table 2
Descriptive statistics from January 2002 through December 2008

The stock market return measures are: Alpha of country *i*, $\hat{r}_i$, the risk-adjusted return estimated from the first-stage time series regression; the average monthly return on a country's MSCI index in excess of the US 1-monthT-bill rate, ($\hat{r}_i - \hat{r}^{rf}$); the average monthly return on a country's MSCI index in excess of the average monthly return on the MSCI world index, ($\hat{r}_i - \hat{r}^{world}$); and the Sharpe ratio of country *i*, calculated as the average monthly excess equity return as a proportion to the variation in the MSCI country index. The vector of betas, β^{WORLD}, β^{CPI}, β^{FOREX}, β^{OIL}, and β^{IPROD} were estimated from the first-stage time series regression. β^{WORLD} captures the sensitivity of country *i*'s stock return to the return on MSCI world index; β^{CPI}, β^{FOREX}, β^{OIL}, and β^{IPROD} capture the sensitivity of country *i*'s stock return to the changes in the following global risk factors, inflation rate, foreign exchange rate, crude oil spot price, and industrial production respectively. G1 through G6 are the six governance indicators measuring various dimensions of country-level governance.

Variables	Mean	Standard deviation	Median	Minimum	Maximum
Stock return measures					
Alpha	0.0569	0.0683	0.0185	-0.0132	0.2040
($\hat{r}_i - \hat{r}^{rf}$)	0.0532	0.0639	0.0335	-0.0108	0.2053
($\hat{r}_i - \hat{r}^{world}$)	0.0620	0.0691	0.0472	-0.0088	0.2181
Sharpe ratio	0.6884	0.7755	0.6022	-0.1511	2.6524
Global risk factors					
β^{WORLD}	3.7800	3.1456	1.9498	0.5945	10.4061
β^{CPI}	-0.8059	16.8980	1.0048	-48.4383	36.9814
β^{FOREX}	-0.9286	2.4897	-0.1028	-9.3605	2.7832
β^{OIL}	0.0043	0.0126	-0.0003	-0.0175	0.0407
β^{IPROD}	2.6052	7.4778	0.3642	-19.6695	21.4291
Governance indicators					
Voice and Accountability (G1)	0.8076	3.9869	1.3762	-12.0326	9.1151
Political Stability and Absence of Violence (G2)	-1.1190	4.7197	0.7325	-12.8605	6.9737
Government Effectiveness (G3)	1.7932	3.1189	1.6857	-3.9128	8.5116
Regulatory Quality (G4)	1.6353	3.2228	1.5776	-5.2069	10.1605
Rule of Law (G5)	0.8276	3.4271	1.4875	-7.3714	8.4223
Control of Corruption (G6)	0.6901	3.2015	1.6021	-6.8133	9.4167

Table 3

Pearson correlation coefficients of regression variables from January 2002 through December 2008

This table shows pairwise correlation coefficients for stock market return measures, global risk factors, and governance indicators. The stock market return measures are: Alpha of country *i*, $\hat{r}_i$, the risk-adjusted return estimated from the first-stage time series regression; the average monthly return on a country's MSCI index in excess of the US 1-monthT-bill rate, ($\hat{r}_i - \hat{r}^{rf}$); the average monthly return on a country's MSCI index in excess of the average monthly return on the MSCI world index, ($\hat{r}_i - \hat{r}^{world}$); and the Sharpe ratio of country *i*, calculated as the average monthly excess equity return as a proportion to the variation in the MSCI country index. The vector of betas, β^{WORLD}, β^{CPI}, β^{FOREX}, β^{OIL}, and β^{IPROD} were estimated from the first-stage time series regression. β^{WORLD} captures the sensitivity of country *i*'s stock return to the return on MSCI world index; β^{CPI}, β^{FOREX}, β^{OIL}, and β^{IPROD} capture the sensitivity of country *i*'s stock return to the changes in the following global risk factors, inflation rate, foreign exchange rate, crude oil spot price, and industrial production respectively. G1 through G6 are the six governance indicators measuring various dimensions of country-level governance. G1 is Voice and Accountability; G2 is Political Stability and Absence of Violence; G3 is Government Effectiveness; G4 is Regulatory Quality; G5 is Rule of Law; and G6 is Control of Corruption.

	Alpha	($\hat{r}_i - \hat{r}^{rf}$)	($\hat{r}_i - \hat{r}^{world}$)	Sharpe ratio	β^{WORLD}	β^{CPI}	β^{FOREX}	β^{OIL}	β^{IPROD}	G1	G2	G3	G4	G5	G6
Alpha	1														
R_i-R_f	0.93**	1													
R_i-R_m^w	0.92**	0.99**	1												
Sharpe ratio	0.90**	0.95**	0.96**	1											
β^{WORLD}	0.59**	0.54**	0.57**	0.55**	1										
β^{CPI}	-0.43**	-0.10	-0.09	-0.10	-0.11	1									
β^{FOREX}	-0.47**	-0.49**	-0.49**	-0.42**	-0.20	0.42**	1								
β^{OIL}	0.55**	0.50**	0.49**	0.41**	0.26	-0.48**	-0.68**	1							
β^{IPROD}	0.25	0.37*	0.38**	0.29*	0.08	0.13	-0.25	-0.04	1						
G1	-0.37**	-0.32*	-0.31*	-0.24	0.13	0.40**	0.46**	-0.33*	-0.26	1					
G2	-0.64**	-0.57**	-0.57**	-0.51**	-0.13	0.41**	0.42**	-0.23	-0.45**	0.58**	1				
G3	-0.38**	-0.39**	-0.36*	-0.24	0.15	0.27	0.50**	-0.28	-0.40**	0.67**	0.68**	1			
G4	-0.36*	-0.35*	-0.33*	-0.17	0.16	0.29*	0.39**	-0.37*	-0.32*	0.75**	0.64**	0.90**	1		
G5	-0.50**	-0.53**	-0.52**	-0.42**	-0.09	0.23	0.59**	-0.38**	-0.28	0.64**	0.73**	0.87**	0.84**	1	
G6	-0.55**	-0.58**	-0.57**	-0.46**	-0.21	0.19	0.53**	-0.35*	-0.47**	0.69**	0.72**	0.85**	0.86**	0.92**	1

** and * denote statistical significance at the 0.01 and 0.05 levels respectively.

Table 4

Comparison of mean values between high governance score and low governance score for governance indicators

High governance score group comprises countries with strong governance framework in which the average score of governance indicator *i* is higher than the median of all countries' equally weighted score of *i* indicator. The group with low governance score consists of countries with weak governance structure in which the average governance score for the *i* governance indicator is lower than the median. The stock market return measures are: Alpha of country *i*, $\hat{r}_i$, the risk-adjusted return estimated from the first-stage time series regression; the average monthly return on a country's MSCI index in excess of the US 1-monthT-bill rate, $(\hat{r}_i - \hat{r}^{rf})$; the average monthly return on a country's MSCI index in excess of the average monthly return on the MSCI world index, $(\hat{r}_i - \hat{r}^{world})$; and the Sharpe ratio of country *i*, calculated as the average monthly excess equity return as a proportion to the variation in the MSCI country index.

Governance indicators	Alpha	$(\hat{r}_i - \hat{r}^{rf})$	$(\hat{r}_i - \hat{r}^{world})$	Sharpe ratio
Voice and Accountability (G1)				
High G1 Score	0.0377	0.0366	0.0443	0.495
Low G1 Score	0.0761	0.0697	0.0797	0.8817
Mean difference	-0.0385	-0.0331	-0.0354	-0.3867
t-statistic	-2.01*	-1.84	-1.82	-1.77
Political Stability and Absence of Violence (G2)				
High G2 Score	0.0133	0.017	0.0227	0.2795
Low G2 Score	0.1005	0.0894	0.1013	1.0972
Mean difference	-0.0872	-0.0724	-0.0785	-0.8177
t-statistic	5.13**	-4.74**	-4.75**	-4.27**
Government Effectiveness (G3)				
High G3 Score	0.0232	0.0242	0.0315	0.3954
Low G3 Score	0.0906	0.0821	0.0926	0.9813
Mean difference	-0.0674	-0.0579	-0.0611	-0.5859
t-statistic	-3.90**	-3.50**	-3.38**	-2.80**
Regulatory Quality (G4)				
High G4 Score	0.0297	0.0301	0.0381	0.4802
Low G4 Score	0.0821	0.075	0.0844	0.8606
Mean difference	-0.0524	-0.0449	-0.0463	-0.3804
t-statistic	-2.83**	-2.55*	-2.41*	-1.71
Rule of Law (G5)				
High G5 Score	0.0208	0.0217	0.0283	0.3508
Low G5 Score	0.0929	0.0847	0.0957	1.0259
Mean difference	-0.0721	-0.0631	-0.0673	-0.675
t-statistic	-4.28**	-3.90**	-3.83**	-3.32**
Control of Corruption (G6)				
High G6 Score	0.0259	0.0255	0.0327	0.4178
Low G6 Score	0.0879	0.0809	0.0914	0.9589
Mean difference	-0.0619	-0.0554	-0.0587	-0.5412
t-statistic	-3.50**	-3.31**	-3.22**	-2.56*

** and * denote statistical significance at the 0.01 and 0.05 levels respectively.

Table 5
Cross-sectional regression of governance and stock market return
Dependent variable is Alpha

This table reports results of the second-stage regression as specified by Equation [2]. The dependent variable in all regressions is Alpha of country *i*, $\hat{r}_i$, the risk-adjusted return estimated from the first-stage time series regression. Model 0 shows result of the baseline regression and models 1 through 6 present results when each of the governance indicator *i* is introduced individually into the baseline model. The G_i dummy represents governance dummy variable for each of the six governance indicator. G_i is dummy variable equals 1 if a country has weak governance framework, 0 otherwise. G1 through G6 represent the six governance indicators measuring various dimensions of country-level governance. G1 is Voice and Accountability; G2 is Political Stability and Absence of Violence; G3 is Government Effectiveness; G4 is Regulatory Quality; G5 is Rule of Law; and G6 is Control of Corruption. The vector of betas, β^{WORLD}, β^{CPI}, β^{FOREX}, β^{OIL}, and β^{IPROD} were estimated from the first-stage time series regression. β^{WORLD} captures the sensitivity of country *i*'s stock return to the return on MSCI world index; β^{CPI}, β^{FOREX}, β^{OIL}, and β^{IPROD} capture the sensitivity of country *i*'s stock return to the changes in the following global risk factors, inflation rate, foreign exchange rate, crude oil spot price, and industrial production respectively.

	Model 0	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	0.0046 (0.6581)	-0.0059 (-0.6798)	-0.0078 (-1.4684)	-0.0090 (-0.8270)	-0.0079 (-0.6768)	-0.0062 (-0.5849)	-0.0052 (-0.4729)
β^{WORLD}	0.0101** (5.1014)	0.0105** (5.2245)	0.0089** (4.9050)	0.0099** (4.9496)	0.0102** (4.8847)	0.0093** (4.5619)	0.0097** (4.6797)
β^{CPI}	-0.0011* (-2.1367)	-0.0009 (-1.7050)	-0.0007 (-1.3795)	-0.0008 (-1.9458)	-0.0009* (-2.0715)	-0.0009* (-2.0955)	-0.0009* (-2.1491)
β^{FOREX}	0.00030 (0.0628)	0.0014 (0.3063)	0.0008 (0.2026)	0.0006 (0.1523)	0.0003 (0.0714)	0.0014 (0.3759)	0.0016 (0.4099)
β^{OIL}	1.6964 (1.5421)	1.8106 (1.6522)	1.3492 (1.4202)	1.4992* (2.0902)	1.5458* (2.0706)	1.5887* (2.2028)	1.7053* (2.3194)
β^{IPROD}	0.0024* (2.0849)	0.0020 (1.5224)	0.0016 (1.3519)	0.0017 (1.8429)	0.0020* (2.1037)	0.0019* (2.0880)	0.0019* (2.0137)
G1 dummy		0.0215 (1.4696)					
G2 dummy			0.0426* (2.3906)				
G3 dummy				0.0349** (2.6016)			
G4 dummy					0.0268* (1.9913)		
G5 dummy						0.0333* (2.4271)	
G6 dummy							0.0278* (1.9883)
F-value	14.0294**	12.3792**	15.2083**	14.4249**	12.9344**	14.0345**	13.1722**
Prob> F-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Adjusted R-squared	0.5809	0.5923	0.6446	0.6315	0.6089	0.6246	0.6084

Notes:
1. *t*-statistics are in parentheses and are calculated using White (1980)'s heteroskedasticity-consistent standard errors and covariance method.
2. ** and * denote statistical significance at the 0.01, and 0.05 levels respectively.

Table 6

Cross-sectional regression of governance and stock market return
Dependent variable is ($\hat{r}_i - \hat{r}^{rf}$)

This table reports results of the second-stage regression as specified by Equation [2]. The dependent variable in all regressions is the average monthly return on a country's MSCI index in excess of the US 1-monthT-bill rate, ($\hat{r}_i - \hat{r}^{rf}$). Model 0 shows result of the baseline regression and models 1 through 6 present results when each of the governance indicator *i* is introduced individually into the baseline model. The G_i dummy represents governance dummy variable for each of the six governance indicator. G_i is dummy variable equals 1 if a country has weak governance framework, 0 otherwise. G1 through G6 represent the six governance indicators measuring various dimensions of country-level governance. G1 is Voice and Accountability; G2 is Political Stability and Absence of Violence; G3 is Government Effectiveness; G4 is Regulatory Quality; G5 is Rule of Law; and G6 is Control of Corruption. The vector of betas, β^{WORLD}, β^{CPI}, β^{FOREX}, β^{OIL}, and β^{IPROD} were estimated from the first-stage time series regression. β^{WORLD} captures the sensitivity of country *i*'s stock return to the return on MSCI world index; β^{CPI}, β^{FOREX}, β^{OIL}, and β^{IPROD} capture the sensitivity of country *i*'s stock return to the changes in the following global risk factors, inflation rate, foreign exchange rate, crude oil spot price, and industrial production respectively.

	Model 0	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	0.0046 (0.6581)	-0.0059 (-0.6798)	-0.0078 (-1.4684)	-0.0090 (-1.3953)	-0.0079 (-1.0872)	-0.0062 (-1.0670)	-0.0052 (-0.8490)
β^{WORLD}	0.0081** (4.1127)	0.0086** (4.2538)	0.0069** (3.8246)	0.0079** (4.4471)	0.0082** (4.3445)	0.0074** (4.1103)	0.0077** (4.2908)
β^{CPI}	0.0006 (1.1460)	0.0007 (1.3657)	0.0010 (1.8670)	0.0008 (1.6459)	0.0008 (1.4461)	0.0008 (1.5676)	0.0007 (1.4983)
β^{FOREX}	-0.0033 (-0.6862)	-0.0022 (-0.4686)	-0.0029 (-0.7377)	-0.0031 (-0.7660)	-0.0034 (-0.7793)	-0.0022 (-0.5470)	-0.0021 (-0.4794)
β^{OIL}	2.0186 (1.8349)	2.1328 (1.9461)	1.6713 (1.7593)	1.8213 (1.8903)	1.8680 (1.8162)	1.9109* (1.9883)	2.0274* (2.0916)
β^{IPROD}	0.0025* (2.1761)	0.0021 (1.6050)	0.0017 (1.4399)	0.0018 (1.5198)	0.0021 (1.7916)	0.0020 (1.7571)	0.0020 (1.6713)
G1 dummy		0.0215 (1.4696)					
G2 dummy			0.0426* (2.3906)				
G3 dummy				0.0349* (2.3449)			
G4 dummy					0.0268 (1.8915)		
G5 dummy						0.0333* (2.3004)	
G6 dummy							0.0278 (1.9571)
F-value	11.2166**	9.9698**	12.4441**	11.7590**	10.5069**	11.4175**	10.6633**
Prob> F-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Adjusted R-squared	0.5208	0.5338	0.5937	0.5787	0.5536	0.5708	0.5523

Notes:

1. *t*-statistics are in parentheses and are calculated using White (1980)'s heteroskedasticity-consistent standard errors and covariance method.
2. ** and * denote statistical significance at the 0.01, and 0.05 levels respectively.

Table 7
Cross-sectional regression of governance and stock market return
Dependent variable is ($\hat{r}_i - \hat{r}^{world}$)

This table reports results of the second-stage regression as specified by Equation [2]. The dependent variable in all regressions is the average monthly return on a country's MSCI index in excess of the average monthly return on the MSCI world index, ($\hat{r}_i - \hat{r}^{world}$). Model 0 shows result of the baseline regression and models 1 through 6 present results when each of the governance indicator *i* is introduced individually into the baseline model. The G_i dummy represents governance dummy variable for each of the six governance indicator. G_i is dummy variable equals 1 if a country has weak governance framework, 0 otherwise. G1 through G6 represent the six governance indicators measuring various dimensions of country-level governance. G1 is Voice and Accountability; G2 is Political Stability and Absence of Violence; G3 is Government Effectiveness; G4 is Regulatory Quality; G5 is Rule of Law; and G6 is Control of Corruption. The vector of betas, β^{WORLD}, β^{CPI}, β^{FOREX}, β^{OIL}, and β^{IPROD} were estimated from the first-stage time series regression. β^{WORLD} captures the sensitivity of country *i*'s stock return to the return on MSCI world index; β^{CPI}, β^{FOREX}, β^{OIL}, and β^{IPROD} capture the sensitivity of country *i*'s stock return to the changes in the following global risk factors, inflation rate, foreign exchange rate, crude oil spot price, and industrial production respectively.

	Model 0	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	0.0069 (0.8925)	-0.0042 (-0.4583)	-0.0064 (-1.1258)	-0.0070 (-1.0152)	-0.0057 (-0.7249)	-0.0042 (-0.6603)	-0.0029 (-0.4342)
β^{WORLD}	0.0096** (4.6192)	0.0100** (4.7812)	0.0083** (4.2990)	0.0094** (4.9763)	0.0096** (4.8413)	0.0088** (4.6117)	0.0092** (4.7995)
β^{CPI}	0.0006 (1.1790)	0.0008 (1.3994)	0.0010 (1.9098)	0.0009 (1.6491)	0.0008 (1.4513)	0.0008 (1.5764)	0.0008 (1.5017)
β^{FOREX}	-0.0038 (-0.7047)	-0.0026 (-0.4930)	-0.0032 (-0.7628)	-0.0035 (-0.7779)	-0.0038 (-0.7882)	-0.0026 (-0.5802)	-0.0025 (-0.5202)
β^{OIL}	2.0457 (1.7358)	2.1671 (1.8433)	1.6737 (1.6383)	1.8443 (1.7627)	1.8984 (1.6998)	1.9351 (1.8536)	2.0546 (1.9462)
β^{IPROD}	0.0028* (2.3279)	0.0023 (1.7404)	0.0019 (1.5712)	0.0021 (1.6774)	0.0024 (1.9517)	0.0023 (1.9094)	0.0023 (1.8251)
G1 dummy		0.0228 (1.5049)					
G2 dummy			0.0457* (2.4055)				
G3 dummy				0.0357* (2.2666)			
G4 dummy					0.0267 (1.7748)		
G5 dummy						0.0342* (2.2177)	
G6 dummy							0.0278 (1.8538)
F-value	12.2874**	10.9044**	13.6396**	12.5778**	11.2818**	12.2757**	11.4414**
Prob> F-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Adjusted R-squared	0.5456	0.5584	0.6174	0.5965	0.5729	0.5901	0.5714

Notes:
1. *t*-statistics are in parentheses and are calculated using White (1980)'s heteroskedasticity-consistent standard errors and covariance method.
2. ** and * denote statistical significance at the 0.01, and 0.05 levels respectively.

Table 8
Cross-sectional regression of governance and stock market return
Dependent variable is Sharpe ratio

This table reports results of the second-stage regression as specified by Equation [2]. The dependent variable in all regressions is the Sharpe ratio of country *i*, calculated as the average monthly excess equity return as a proportion to the variation in the MSCI country index. Model 0 shows result of the baseline regression and models 1 through 6 present results when each of the governance indicator *i* is introduced individually into the baseline model. The G_i dummy represents governance dummy variable for each of the six governance indicator. G_i is dummy variable equals 1 if a country has weak governance framework, 0 otherwise. G1 through G6 represent the six governance indicators measuring various dimensions of country-level governance. G1 is Voice and Accountability; G2 is Political Stability and Absence of Violence; G3 is Government Effectiveness; G4 is Regulatory Quality; G5 is Rule of Law; and G6 is Control of Corruption. The vector of betas, β^{WORLD}, β^{CPI}, β^{FOREX}, β^{OIL}, and β^{IPROD} were estimated from the first-stage time series regression. β^{WORLD} captures the sensitivity of country *i*'s stock return to the return on MSCI world index; β^{CPI}, β^{FOREX}, β^{OIL}, and β^{IPROD} capture the sensitivity of country *i*'s stock return to the changes in the following global risk factors, inflation rate, foreign exchange rate, crude oil spot price, and industrial production respectively.

	Model 0	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	0.1026 (1.0347)	-0.0458 (-0.3930)	-0.0475 (-0.5830)	-0.0323 (-0.3418)	0.0015 (0.0150)	-0.0111 (-0.1212)	0.0208 (0.2228)
β^{WORLD}	0.1117** (4.0607)	0.1178** (4.2164)	0.0970** (3.7626)	0.1097** (4.2295)	0.1110** (4.0682)	0.1035** (3.9701)	0.1083** (4.0829)
β^{CPI}	0.0049 (0.7314)	0.0072 (0.9840)	0.0095 (1.3114)	0.0074 (1.0260)	0.0065 (0.9102)	0.0069 (0.9734)	0.0061 (0.8771)
β^{FOREX}	-0.0462 (-0.8035)	-0.0301 (-0.5421)	-0.0404 (-0.8767)	-0.0438 (-0.8694)	-0.0476 (-0.8624)	-0.0348 (-0.6907)	-0.0358 (-0.6677)
β^{OIL}	15.7517 (1.3021)	17.3724 (1.4869)	11.5582 (1.0152)	13.7988 (1.1663)	14.9695 (1.1902)	14.6204 (1.2414)	15.8257 (1.3323)
β^{IPROD}	0.0221 (1.6353)	0.0154 (0.9939)	0.0125 (0.8574)	0.0151 (1.0259)	0.0196 (1.3444)	0.0169 (1.1880)	0.0179 (1.1948)
G1 dummy		0.3045 (1.4627)					
G2 dummy			0.5148* (2.0475)				
G3 dummy				0.3458 (1.6589)			
G4 dummy					0.1917 (0.9709)		
G5 dummy						0.3499 (1.6494)	
G6 dummy							0.2316 (1.1092)
F-value	7.4454**	6.8149**	8.1140**	7.1187**	6.5143**	7.1164**	6.5029**
Prob> F-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Adjusted R-squared	0.4068	0.4261	0.4759	0.4386	0.4184	0.4385	0.4126

Notes:
1. *t*-statistics are in parentheses and are calculated using White (1980)'s heteroskedasticity-consistent standard errors and covariance method.
2. ** and * denote statistical significance at the 0.01, and 0.05 levels respectively.

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