Governance and Performance in Emerging Markets

Empirical Study on the Link Between Performance and Corporate Governance of IFC Investment Clients

IFC International Finance Corporation
WORLD BANK GROUP
Creating Markets, Creating Opportunities

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Table of Contents

Appendixes

List of Boxes

List of Figures

List of Tables

All tables and figures were created by the assessment team.

Acknowledgments

This report was written under the supervision on an IFC team led by David Karapetyan, Regional Corporate Governance Lead, Latin America and the Caribbean, and supported by Nazeem Wasti and Alexey Volynets, Corporate Governance Group. The principal author of the report was Alexandre Di Miceli da Silveira, founder of Direzione Management Consulting and professor of corporate governance at Alvares Penteado School of Business, Sao Paolo, Brazil, and a short-term consultant with IFC.

We thank Raphael Bruce for research assistance on the econometric tests; Kalyani Santoshkumar, Anatoliy Yefymenko, Yovel David Crispin Davila, Sheela Rahman, Jacqueline A. Williams, Tsion A. Beyene, Florence Hope-Wudu, and Omosalewa T. Fajobi for corporate governance data collection through surveys and assistance with interviews of companies participating in the study; Katherine Downs, Carlos Mayorga, Haruko Koide, John Mantzavinatos, Stephen Chow, and colleagues in Financial Institutions Group (FIG), Manufacturing, Agriculture, and Services (MAS), Infrastructure and Natural Resources (INR), and Telecom, Media, Technology, and Venture Investing (CTT) in the regions, who introduced corporate governance to clients and helped review corporate governance (CG) questionnaire responses; and Saurabh Garg, Anna Ostrovskaya, Carlos Mayorga, Lei Liu, Joseph Matthews for providing financial and other company-level data from IFC management information systems, and Shannon Roe for the editing.

In preparing this paper, we asked many professionals, with diverse experience and backgrounds, to peer review the research methodology as well as the interpretation and presentation of the results. Their thoughtful comments were invaluable in strengthening the content and overall composition of the report. Great appreciation goes to those experts and peer reviewers, who come from three broad areas of endeavor (in alphabetical order within each group). From academia, including prominent corporate governance researchers: Guillermo Boitano, Maria Andrea Trujillo Davila, Patricia Gabaldon, Christopher Jones, Aurelio Gurrea Martínez, Rosendo Ramirez, Francisco Reyes, Eduardo Schiehll, Marc VanEssen, Alexander Guzmán Vasquez, and Alessandro Zattoni. From the private sector experts, including Institutes of Directors, investment funds, stock exchanges, consulting companies, and members of IFC's Private Sector Advisory Group: Adriane Almeida, Paulina Beato, Heloisa Bedicks, Bistra Boeva, Valéria Café, Tobias Coutinho, Richard Frederick, Ola Peter Krohn Gjessing, Mike Lubrano, Luiz Fernando da Costa Dalla Martha, Andres Oneto, Miguel Puga, Francis Stenning, John D. Sullivan, and Marco Antonio Zaldívar. From the World Bank and IFC, representing expertise in economics, corporate governance, investment operations, portfolio management, strategy development, environmental and social risk management, and results measurement: Henning Amelung, Deniz Baharoglu, Peter Cashion, Stephen Chow, Katherine Downs, Flavio B. Guimaraes, Natalia Lavrova, Chaoying Liu, John Mantzavinatos, Edmond Mjekiqi, Temel Oktem, Oliver Orton, Nilesh Shrivastava, Elizabeth M. White, and L. Colin Xu. Special thanks also go to Alexander S. Berg, Neil Gregory, Merima Zupcevic, Roman Zyla, Khawar Ansari, Charles Canfield, James Christopher Razook, Vladislava Ryabota, Ghita Alderman, and Darrin Hartzler.

The CG Group is grateful to the many investment and portfolio colleagues who helped with the design, data collection, and validation for this study. We also want to thank Shannon Roe for editing, and Cristina Iglesias Espinosa for helping with the production of the report.

Foreword

A growing body of academic literature seeks to demonstrate the relationship between a firm's environmental, social and governance performance and its financial performance. While many such studies show a positive correlation, most are based on data of listed equities in developed countries and few consider this relationship in the emerging market context.

IFC, the private sector arm of the World Bank Group, seeks to demonstrate and promote the role of the private sector to support economic development in emerging markets. Operating as a triple-bottom line investor, it invests mainly in private debt and equity with the goal of delivering financial returns, development outcomes and sound environmental, social and governance performance.

Regarding corporate governance, IFC has now been consistently incorporating the consideration of investee corporate governance practices into its due diligence assessments for over a decade and provides advice on good corporate governance practices to clients with need. The performance of IFC's portfolio therefore provides a unique data set that can provide insight on the relationship between corporate governance, financial performance, development outcomes and environmental and social performance of firms in emerging markets.

By creating a novel index of corporate governance performance, this important empirical study demonstrates a clear correlation between the quality of corporate governance in IFC's portfolio companies and the financial, economic and environmental and social performance of IFC's investment. A more focused corporate governance index based on the indicators that IFC's corporate governance team believe to be the most important, reveals that the materiality of corporate governance issues considered serves to enhance this correlation. These results offer IFC food for thought on how we more effectively incorporate corporate governance into our investment due diligence and how we provide corporate governance advice to our investees to improve their (and our) returns.

The findings of this study go beyond IFC's interests as a development finance provider. They show the importance of corporate governance to financial performance in emerging markets investment and encourage any prudent investor or lending institutions to develop approaches for assessing corporate governance risk factors in addition to the traditional credit and financial risk factors. I encourage investment professionals, company owners and executives alike to review this study to recognize and reinforce the win-win proposition of good corporate governance practices.

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Key Terms and Acronyms

CG	corporate governance
COE	cost of equity
Core CG Index	Index based on 26 key CG indicators of 84 CG questions
CRR	credit risk rating
CSO	The Department of Special Operations
DARP	Distressed Asset Recovery Program
DOTS	Development Outcome Tracking System
E&S	environmental and social
ESG	environment, social, and governance
ERR	economic rate of return
ESRR	environment and social review rating
EROE	economic return on equity
EROIC	economic return on invested capital
FRR	financial rate of return
Full CG Index	Index based on 84 CG questions
GMM	generalized method of moments
IRR	internal rate of return
KPI	key performance indicator
ODO	overall development outcome rating
P/BV	price to book value

P/E	price to earnings ratio
PSD	private sector development
ROA	return on assets
ROE	return on equity
ROIC	return on invested capital
SOE	state-owned enterprise
SPV	special purpose vehicle
WACC	weighted average cost of capital

Executive Summary

In 2016, IFC's Corporate Governance Group launched an empirical study to explore the link between the quality of IFC portfolio clients' corporate governance (CG) and their financial and economic performance over a four-to-five-year period. Using client surveys and portfolio financial, economic, and development outcome data, IFC tested the hypothesis that better corporate governance is associated with better performance over a defined period.

The analysis of collected data showed that investing in companies with better CG at the time of disbursement of IFC's investment is associated with a better average credit risk rating (CRR) by almost 1.50 points throughout the IFC investment period. Specifically, on a constructed index of CG performance, the top quartile of IFC portfolio companies had an average CRR of 4.62 on an 11-point scale, compared with an average CRR of 6.08 of those in the bottom 25 percent. This suggests that selecting companies with better CG policies and practices at the time of investment is correlated with a lower credit risk for IFC.

The study also found that companies that improved CG during the investment period achieved about 20 percent higher performance as shown by ICF's Development Outcome Tracking System (DOTS) financial indicator, which includes return on equity and return on invested capital (ROE/ROIC), and by the DOTS economic indicator (DOTS Econ), which includes economic return on equity and economic return on invested capital (EROE/EROIC). On a 1–4 DOTS scale, companies that improved their CG practices by more than 25 percent displayed 3.72 financial indicator points and 3.94 economic indicator points, against 3.09 financial indicator points and 3.30 economic indicator points for the group that did not improve CG at all. These findings demonstrate that investing time and resources in improving a company's CG is positively associated with higher financial and economic returns for IFC and its clients.

Further analysis, using the average CG score throughout the investment period, shows that companies from the top quartile exhibit an average ROE that is about 20 percent higher than that of the bottom CG quartile (13.05 percent versus 10.96 percent).

For this study, IFC created the *Core CG Index*, consisting of the most important CG indicators selected based on consensus of IFC corporate governance specialists prior to undertaking the empirical analysis. Using this index (instead of the full index of over 80 indicators) produced an even stronger result: companies from the top CG quartile exhibit an average ROE that is about three times higher than that of the bottom CG quartile (18.56 percent versus 6.91 percent). These results indicate that the most materials indicators of CG performance demonstrate a stronger correlation with financial performance.

Analyzing the subsets of companies in financial and nonfinancial sectors, companies where IFC invests in debt versus equity, and the size of the investment (as represented by the tier of the transaction) produced results similar to those described above, demonstrating that CG is an equally important factor across sectors and irrespective of the type of investment relationship.

Finally, the study analyzed the relationship between CG and an environmental and social risk rating (ESRR). Specifically, companies from the top CG quartile exhibited an ESRR of 2.01 on a 1–4 scale, versus an ESRR of

2.19 for those in the bottom quartile. This suggests that companies practicing better CG also have better environmental and social (E&S) practices.

Moreover, the study identified specific CG practices that have the highest correlations with financial performance:

- Having a dedicated internal audit function with its own charter or terms of reference;
- Following internationally recognized standards on internal controls;
- Having financial statements audited by a recognized independent auditing firm;
- Having a written code of ethics/conduct;
- Having a board that has an audit committee;
- Having a written policy for the approval of related-party transactions.

These indicators show that the broad spectrum of CG improvement actions available to a firm can be narrowed down to a key set of actions that make value creation a priority for the benefit of investors.

These practical findings support the proposition that CG is associated with better results and is an important factor in the success of IFC's investment and portfolio work. At the same time, it also suggests that IFC's investment and portfolio teams and our clients can clearly benefit from simple efforts to improve a company's CG policies and practices.

The study covered 61 companies selected from different regions (from 45 countries) and industries (49 percent coming from the financial industry and the rest from nonfinancial sectors). While the sample of companies was relatively small for this type of empirical research, it represented more than 20 percent of IFC's new investments during the study period (fiscal years 2011 and 2012) and an aggregate IFC disbursement of about $1.5 billion.

In conclusion, it is important to highlight that the study supports the following propositions:

- CG has statistically significant correlation with firm performance, especially regarding CRR and ROE/EROE.
- IFC is likely to benefit from selecting companies with better CG at the time of disbursement as well as from helping companies improve their CG practices during the investment holding period.
- Some practical actions may add significant value to IFC and its clients, such as 1) defining standard CG key performance indicators (KPIs) to focus on at deal origination; 2) having CG specialists provide input for credit/equity ratings; 3) better monitoring of CG covenant implementation and supporting the client in CG improvements (such as through CG Advisory Services); and 4) prioritizing CG specialists' involvement in projects with high CRRs and ESRRs.
- To the extend IFC broad emerging market portfolio illustrates the wider role of CG to commercial and investment success in emerging markets. This study provides other investors with an empirical basis for increases scrutiny of CG performance.

Introduction

Investors, including IFC and other development finance institutions, increasingly look at governance as an indicator of firm quality and a factor in investment selection. There is a strong business case for linking sound corporate governance practices to better firm performance. This proposition is based on the view that companies adopting governance best practices make better business decisions over time, better manage their risks, enjoy enhanced market reputation, and have improved access to capital. From a macro perspective, CG may also contribute to country-level social and economic development.

> "Sound corporate governance helps businesses attract investment on better terms. Clients are more accountable to investors and responsive to stakeholder concerns. They also operate more efficiently and are able to better manage risks."
>
> —IFC website[1]

Over the past two decades, numerous academic studies worldwide have investigated whether the link between CG quality and firm performance is supported by empirical data.[2] Most research finds a positive relationship between following recommended CG practices and financial performance indicators, especially when using market value ratios such as Tobin's Q, price-to-book value (P/BV), and price-to-earnings (P/E). (See Box 1.1.)

Because most research relies on publicly available information, it is tailored to CG and performance analysis of the largest companies and those that are publicly listed. As a result, there is a possible gap between the findings of CG studies, as they may not be relevant to unlisted, often family-owned, businesses—the ones that IFC typically invests in. Therefore, this study explores the empirical link between CG and performance with data from IFC's investment portfolio, using a research methodology in line with other studies in the field but adapted to IFC's investment environment. Specifically, it investigates the extent to which having good CG policies and practices—as defined by the CG Index specifically developed for this study based on IFC's CG Methodology—is associated with better financial and nonfinancial performance of IFC's portfolio clients during the investment period.[3] It reflects IFC's nature as a development institution, where the success of an investee company is defined not only in financial terms but also by its contributions to a broader set of stakeholders and the economy in general, including environment and social aspects. The study's methodology has been submitted to peer review by internal and external experts

[1] http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+cg/investment+services
[2] One of the most frequent approaches in corporate governance research assigns a "score" to each company based on its adherence to certain practices. Usually this score is based on such governance dimensions as board of directors, shareholderrights, transparency, and so on. Researchers then assess whether the corporate governance score correlates with performance measures.
[3] This is the so-called "research problem." The term "problem" does not mean that something is wrong; it just means there is a gap between the actual state (IFC investments on CG initiatives) and the desired ideal state (to assess whether IFC efforts to promote better CG among its investment clients do pay off). The "scientific method" to solve problems is a step-by-step logical, organized, and rigorous procedure to identify the problem, gather data, analyze the data, and draw conclusions from them.

Box 1.1: Continuing Debate on the Real Impact of CG Practices on Performance

Several studies have concluded that companies with superior governance practices tend to exhibit better operating profitability and are traded at premium prices over their peers. However, an important caveat regarding these findings is this: A positive relationship between CG practices and better performance does not necessarily mean that the superior performance is a consequence of higher CG quality. It is the difference between correlation and causation. Best governance practices, for example, may be positively correlated with better performance due to other factors (such as firm size, market power, and so on) or because it is a consequence instead of a cause of better performance.

This causality issue is very difficult to solve from the econometric point of view due to three so-called endogeneity problems: omitted variables, simultaneity or reverse causality, and measurement error of the regressors (especially the construct validity of CG measures). Researchers are still trying to overcome these problems by resorting to increasingly complex econometric procedures, such as random and fixed effects procedures, instrumental variables based on changes in regulations, dynamic and systemic generalized method of moments (GMM), and so on. Thus the debate about the real impact of CG practices on performance is still not settled in the academic world.

Interestingly, the most robust results have been found using data from emerging markets. Thus it is likely that having sound CG practices is a more important factor for the performance of companies located in countries with the worst investor protection.

Examples of studies referred to above are Klapper and Love (2002), Gompers et al. (2003), Durnev and Kim (2005), Black, Jang, and Kim (2006), Brown and Caylor (2006), Silveira and Barros (2007), Leal and Carvalhal-da-Silva (2007), Chen, Chen, and Wei (2009), Renders, Gaeremynck, and Sercu (2010), Ammann, Oesch, and Schimd (2011), CLSA Group (2012), Black et al. (2013), and Hitz and Lehmann (2013). In addition, Claessens and Yurtoglu (2013) provide a recent review of research on corporate governance with a special focus on emerging markets.

as well as investment professionals, and their feedback was considered.

The study sample comprised companies that IFC invested in during FY11 and FY12 (July 1, 2010, through June 30, 2012). The study period was selected to ensure that no external and extraordinary global events influenced CG or performance indicators on the firm level (for example, when the consequences of the 2007 financial crisis have likely subsided) and to allow for an extended period of five to six years of holding the companies in IFC's portfolio so that the effects of the investment relationship between IFC and the clients could materialize.

CG data were collected directly from IFC's portfolio companies, based on the CG Index questionnaire, which included information as of the date of the original investment and at the end date of the study (June 30, 2016). Performance data, on the other hand, were already available in IFC's internal databases and comprised financial, economic, credit, E&S, and private sector development indicators.

[4] A recent paper by Desai et al. (2017) may be the only academic paper in this line of research carried out with data from IFC operations. The authors investigate the relationship between ESG (environmental, social and governance) ratings and financial performance of some 1,000 IFC projects between 2005 and 2014 in nearly 100 middle- and low-income countries. By using an instrumental variables approach that in their view corrects for endogeneity issues, they find that the relationship between ESG and financial performance is not statistically significant. They also find evidence that both ESG and financial performance can jointly affect broader private sector development. It is important to note that, although authors use the term ESG to describe their main variable of interest, they only use E&S indicators coming from IFC DOTS and do not include governance indicators in their examination. This substantially differentiates the focus of their study from this one, as recognized by the authors in footnote 8 (page 9) of their paper.

The study did not seek to prove causality between CG and performance. Instead, it assessed the degree of the mutual relationship between the two and lessons to be drawn by IFC investment teams as they structure and manage IFC's engagement with investee firms. Future improvements in standardizing CG and performance data collection may make possible significantly more data observations, which in turn may allow for a more robust analysis, including seeking to identify causality from CG to performance. While the study's findings demonstrate statistically significant correlation between CG and performance, the relatively small size of the sample limited the ability to conduct more robust econometric analysis, such as multiple regressions.[4] Also, some other study limitations, often common in similar research studies conducted outside IFC, include 1) reliance on companies as the source of CG information (even though the relevant portfolio officers reviewed and verified information to the best of their knowledge); 2) recall bias of remembering CG policies and practices dating back to 2011; 3) limited heterogeneity of the data sample of IFC clients that have been prescreened and are typically market leaders; and 4) absence of severely underperforming companies (due to financial distress or to lack of a strong relationship with IFC) from the study sample.

Despite these limitations, inherent to most empirical studies worldwide, the key findings of the study can inform IFC's investment operations and its approach to private sector development. First, the study findings based on hard data reinforce the business case for improving governance practices of IFC investees. Integrating CG risk assessment into deal origination, structuring, and portfolio supervision may better enable financial and nonfinancial value to be extracted across a project's lifecycle and, more significantly, for poor CG performance to be corrected before it is manifested in debt default or erosion of equity. Second, by identifying distinct governance factors that are strongly correlated to better performance, the study helps establish a practical framework for prioritizing governance improvements by firms. Third, the findings support IFC's 3.0 strategy of building sustainable markets and providing support, including in the form of advisory services, to further increase the value add to its clients and investment portfolio.

The publication and dissemination of the findings of the study may have an effect that could go beyond IFC's own investment operations and IFC's investee companies and have a broader development impact in better articulating the relationship between CG and performance, both on the risk side and in value addition.

In addition to these internal objectives, this study makes important contributions to the discourse on CG and performance in emerging markets. First, the study adds to a body of academic research by including unlisted companies from emerging markets. Second, IFC can further leverage its strong relationships with other development finance institutions by encouraging them to conduct similar studies. Alternatively, future similar studies may include companies from other institutions and make market-level efforts to disseminate the findings of this study in their regions and priority countries, thus multiplying the effect of this report.

Methodology

The study's overall goal was to determine whether IFC clients' practice of better corporate governance is associated with better performance during the investment period. To accomplish this, the study team designed a research methodology in line with other studies in the field but tailored to IFC's portfolio.

2.1. OBJECTIVES

First, the study aimed to find out whether *better CG practices of IFC clients at the disbursement date are associated with better performance during the investment period*. Second, it analyzed data to check whether *companies with greater improvement of their CG practices from IFC's disbursement date until the end of the study period performed better throughout this period*. And finally, the study tested whether *the average level of CG in IFC clients is associated with better firm performance*.

This last objective was included in the study based on consideration that CG practices tend to be relatively stable over time (as demonstrated by the fact that about one-quarter of the sample did not report any variation of CG practices during the five years under analysis), and it allows for increasing of the number of firm-year observations of the sample. This methodological technique is widely accepted in the academic field for similar empirical studies.

These objectives are related to perspectives that are gaining general acceptance among CG as well as environmental, social, and governance (ESG) practitioners. If the first objective is supported by empirical data, then the results would reinforce the need for IFC and other similar investors to screen and select companies with high-quality CG practices at the disbursement date. If the second objective is supported by the analysis, then the findings would reinforce the case for IFC and the client companies to focus on improving their CG practices to maximize value creation. If the third objective is empirically supported, the findings would demonstrate that attention to CG should be continuous rather than a one-time exercise.

2.2. FIRM-LEVEL PERFORMANCE VARIABLES

It is important to recognize that not all aspects of performance are interrelated; there are many ways to measure firm performance. Most external research on CG measures financial indicators from the perspective of shareholders via measures such as the ROE or market value ratios, such as Tobin's Q, P/E, P/BV, and so on. Firm performance can also be understood from a broader perspective that includes outcomes to other relevant stakeholders, such as employees, customers, communities, and society.

A challenge in this study was to include relevant measurement parameters, which IFC actively and reliably tracked for the study period from July 1, 2010, to June 30, 2016. Accordingly, the study considers four well-established indicators that IFC tracked across its portfolio:

- ***Return on Equity/Return on Invested Capital:*** ROE and ROIC are measures of financial performance that reflect the returns to financiers. Annual ROE is calculated as net income for the most recent year, divided by average equity (average between the most recent year and the previous year). ROIC is computed as the ratio of net operating profits, less adjusted

taxes (NOPLAT) to total invested capital. (NOPLAT reflects only profits from core operations, less related income taxes.)

- ***Economic Return on Equity/Economic Return on Invested Capital:*** EROE and EROIC are measures of economic performance that take into consideration returns not just to financiers but also to society as a whole. Annual EROE is calculated as net income for the most recent year, adjusted for costs and benefits to society (such as taxes paid, subsidies, interest caps, and free or not fully priced advisory services), divided by average equity (average between the most recent year and the previous year). Annual EROIC is computed as net operating profits, less NOPLAT, adjusted for costs and benefits to society, divided by invested capital.
- ***Credit Risk Ratings:*** IFC's in-house CRRs used in this study range from 1 to 7, where 1 indicates the lowest risk, and 7 the highest risk level (commensurate with default). Additional modifiers (A and B) add further granularity in the CRR for categories 2 to 5, where A defines a higher credit quality than B within the category. The CRR categories are very good (1), good (2), average (3), watch (4), substandard (5), doubtful (6), and loss (7). For the purposes of this study, the team computed the CRRs converted into two different scales: from 1 to 7 (just removing the letters A or B from the credit risk assigned) or from 1 to 11 (by converting letters A and B into numbers). The study relied on CRR ratings per the methodology in 2011 and 2012, although this has since been replaced by the IRP (Investment Risk Platform) methodology, which adheres to a different scale.[5]
- ***Development Outcome Tracking System and Overall Development Outcome (ODO) Ratings:*** IFC's proprietary DOTS measures and monitors projects' development impacts by assigning ratings to four performance areas, described below, with ratings on a 1–4 scale (excellent, satisfactory, partly satisfactory, and unsatisfactory). The ratings rely on a baseline, target, and actual results assessment and define qualitative and quantitative benchmarks to assess projects and thus complement analysis of raw financial or nonfinancial performance data (also analyzed separately in this study). DOTS also provides an aggregate synthesis rating, the ODO, on a 1–6 scale (highly unsuccessful, unsuccessful, mostly unsuccessful, mostly successful, successful, and highly successful). DOTS considers the following four dimensions of a project, with specific measurement metrics for Financial Markets and for nonfinancial sectors—Manufacturing, Agribusiness, and Services (MAS) and Infrastructure and Natural Resources (INR) firms, as relevant:
  - ***Financial performance (DOTS Fin)*** tracks project returns to determine whether they are sufficient to compensate financiers for risks taken. It uses ROE for Financial Markets and ROIC or financial rate of return (FRR) for nonfinancial sector projects.[6]
  - ***Economic performance (DOTS Econ)*** tracks the benefits accrued not only to financiers but also to stakeholders most directly affected by projects: customers, employees, suppliers, taxpayers, and government. ROE and EROE are compared with cost of equity (COE) for Financial Markets firms, and ERR or EROIC are reviewed for nonfinancial sector firms.[7]

[5] For equity operations, the team computed the equity risk rating instead of the credit risk rating—and used the CRRs for analyses when the client had both credit and equity ratings assigned. CRRs are based on general and (loan or equity) specific risk factors, which are rated and aggregated to provide a numeric score. Some of the risk factors are inputs based on quantitative data; others are based on qualitative data and thus require judgment from the IFC investment team. For financial institutions, general risk factors include country situation, regulatory environment, sector structure, internal organization, management quality, corporate governance, and earnings. Loan factors include capital, loan assets, investment in securities, liquidity, and foreign exchange open exposure. Equity factors include equity value and liquidity. For nonfinancial institutions, CRRs rate risks differently, where general risk factors considered are country situation, market situation, management quality, and profit margin. Loan factors are debt service and arrears record, debt service strength, security arrangements, and profit trends. Equity factors include value versus original cost, dividend record, future earnings growth, and exit mechanism. Although CG was one of the qualitative factors used in defining the CRR, the CG Index score used in the study is significantly broader and thus does not create circularity of having CG as both an element of CRR rating and an indicator compared with CRR.

[6] DOTS Fin has two mandatory financial return indicators: ROE for Financial Markets projects, and annual ROIC for the MAS and INR industry groups. Ratings are assigned based on comparing the FRR to the cost of capital: FRR/ROIC compared with weighted average cost of capital (WACC) and ROE to cost of equity (COE). Also, DOTS Fin ratings are supplemented by an assessment of the main drivers of financial return, such as net income, sales, margins, capacity use, project cost, and so forth.

- ***Environmental and Social (DOTS E&S)*** performance assesses the benefits that accrue to the environment in which the project takes place. DOTS E&S also measures the extent to which IFC clients satisfy the environmental, social, and health and safety standards set forth in IFC's sustainability policy and performance guidelines.[8]
- ***Private Sector Development (PSD) impact*** captures the benefits accrued to actors beyond the IFC client that are influenced by the company project, such as its supply chain, industry, or country location.[9]
- ***Environmental & Social Review Rating:*** ESSR indicates a company's capability and/or management of E&S issues in accordance with IFC's Sustainability Framework: excellent (1), satisfactory (2), partly unsatisfactory (3), unsatisfactory (4)—taking into account the sector-specific and project-specific risks identified by IFC at the time of investment and implantation of E&S action plans agreed with the company.

These indicators were extracted from IFC internal systems or directly from the clients' financial statements and annual reports.

2.3. CORPORATE GOVERNANCE SCORE

Evaluating corporate governance is inherently a subjective and complex process. Most research measures CG through indices that focus on a company's application of recommended best practices.[10]

It is important to note that indices vary substantially across studies and there is no universally accepted instrument in the literature or among practitioners. Some practitioners argue that measuring CG quality via indices and scores may be potentially misleading.

One issue is the construct validity and whether CG indices are indeed able to segregate genuinely well-governed companies from those with poor governance. For instance, some firms, to please their external stakeholders, might create the perception of adopting good practices while their day-to-day practices do not truly reflect the standards presented. Moreover, there is no ideal CG model that can be implemented by all companies. Because firms differ in size, sector, life-stage, ownership structure, strategy, country of origin, and so on, it would not be practical to apply the same CG instrument to all firms.[11] Indices are often unable to capture the country factor, because companies differ not only in their own practices but also in the requirements of the legal and regulatory frameworks of their home jurisdictions.

While acknowledging these limitations, much of the academic literature considers CG indices to be at least reasonable proxies of the firm's corporate governance quality. Usually, these papers create indices composed of questions that are binary (yes or no), objective (based on a clear criterion), and based on publicly available information. This standard reduces the subjectivity of the instrument and facilitates replicability by third parties.

For this research, the study team constructed the CG Index and tailored it for use as the primary instrument for evaluating CG against performance indicators. The Index drew from the experience of previous research studies

[7] Since not all economic costs and benefits can be quantified, the rating of economic performance also considers qualitative aspects, including to what extent a project has contributed to IFC's mission of helping reduce poverty and improve people's lives.
[8] DOTS E&S ratings offer an assessment of the environmental and social benefits that accrue from the project's operations. While DOTS E&S ratings incorporate ESRR ratings, the two can differ based on factors other than compliance with the ESAP (Environmental and Social Action Plan) and Performance Standards.
[9] Because of its indirect link to the project, the private sector development impact is more difficult to assess, as quantitative data are less readily available. For this reason, DOTS PSD ratings review the project's original objective and quantify or explain the benefits accrued to the private sector, such as improvement in the enabling environment, contribution to market efficiency, and so on.
[10] Examples of academic papers that use corporate governance indices are Klapper and Love (2002), Gompers et al. (2003), Durnev and Kim (2005), Black et al. (2006), Brown and Caylor (2006), Silveira and Barros (2007), Leal and Carvalhal-da-Silva (2007), Chen, Chen, and Wei (2009), Renders et al. (2010), Ammann et al. (2011), CLSA Group (2012), Black et al. (2014), and Hitz and Lehmann (2013). An alternative approach to measuring the real value of corporate governance is based on event studies, which observe the stock price reactions to news related to corporate governance. Nguyen and Nielsen (2010) and Silveira and Dias Junior (2010) are examples of studies using this approach.
[11] Bhagat et al. (2008) and Bozec and Bozec (2012) provide critiques on the use of corporate governance indices.

and G20/OECD Principles of Corporate Governance, and it relied heavily on IFC's own CG Methodology and its five dimensions: 1) *firms' commitment to CG*, 2) *structure and functioning of the board of directors,* 3) *control environment and processes,* 4) *transparency and disclosure*, and 5) *shareholders' rights*. Incorporating these five dimensions aligns the CG Index with IFC's existing approach for CG analysis in the investment process.[12] Because the number of questions for each CG dimension and category differs, the scores obtained were standardized as a percentage to ensure that all dimensions have the same weight in the aggregate CG score.[13] Table 2.1 and Figure 2.1 illustrate the output of the CG Index divided into its five dimensions. Box 2.1 describes an advantage of this approach.

The correlation analysis also used a reduced *Core CG Index* composed of 26 core questions (shortlisted from the total 84 questions in the Full CG Index). IFC corporate governance specialists selected the most important indicators from the Full CG Index to narrow the focus of CG on key indicators prior to undertaking the empirical analysis, to ensure that the results are not biased.[14] The construction of the Core CG Index is important, because it may be easier to replicate it for subsequent studies with a larger sample of companies and for it to become part of a routine CG assessment for all new IFC clients.

2.4. COMPANY SAMPLE AND CG DATA COLLECTION

The study identified an initial sample of about 330 portfolio companies with investments disbursed between July 1, 2010, and June 30, 2012, and where it was possible for IFC to review and oversee CG commitments of the company.[15] The study period was selected to ensure that no external and extraordinary global events influenced the CG or performance indicators on the firm level (such as when the consequences of the 2007 financial crisis had likely subsided) and to allow for an extended period of five to six years of holding the companies in IFC's portfolio so that the effects of the investment relationship between IFC and the clients could materialize.

All companies from the sample received invitations to complete the CG questionnaire, and 61 companies provided completed CG questionnaires with data on their CG practices at both the initial year of the disbursement (2011 or 2012) and the end of the study period (June 30, 2016). Tables 2.2 and 2.3 show the industry and region distribution.

Surveyed companies represent all regions and industries, but there is an industry concentration on financial institutions (49 percent of the sample).[16] There also is a regional concentration in Latin America and the

[12] Some companies may fit into more than one category. For example, financial institutions may also be classified as listed and/or family-owned. In such a case, the study applies all questions from every category that the firm fits into.
[13] Most corporate governance indices constructed in the literature adopt equally weighted questions (each one adding one point to the overall score), because it is easier to reproduce. However, this study is designed to also be able to assign a greater weight to some governance practices perceived as more relevant.
[14] The CG questions that are part of the Core CG Index are the following: 2, 4, 6, 10, 14, 15, 16, 19, 21, 24, 30, 31, 33, 38, 39, 42, 45, 48, 54, 56, 59, 62, 69, 72, 75, and 81. Appendix C provides a full description of each question.
[15] Of 440 equity and debt investment projects disbursed between July 1, 2010, and June 30, 2012, clients where CG is not a key factor and with whom IFC had very limited oversight or engagement on CG were excluded. These included projects with the following characteristics: 1) investments in funds, because the governance structures and processes of funds are significantly different from those of corporations; 2) rights issues, because these are repeat deals where IFC simply exercises anti-dilution right with no action taken on CG; 3) where the only investment product is risk management, hedging, or currency-swap arrangements; 4) projects in related companies done in the same country at the same time, or special purpose vehicles; 5) Distressed Asset Recovery Program projects, because these are investments in companies managing distressed assets of financial institutions on a contractual basis; 6) investments in state-owned enterprises and municipal enterprises; 7) inactive clients, recent prepayments, or equity exits in process with whom IFC had no active relationship; 8) clients excluded at the request of the IFC investment officer due to a poor relationship or a situation of financial distress, bankruptcy, or liquidation; and 9) repeated operations for a company, because one project per company/partner was selected for the study.
[16] Although it is recognized that CG standards and practices often are different in financial and nonfinancial sectors, in listed and unlisted companies, and IFC's ability to influence CG and performance of the client companies varies depending on the nature of the investment relationship (debt versus equity), the small overall sample size of this study did not allow for conducting a separate analysis for each of these subgroups. However, the study results within each subgroup were similar to those for the total sample, as shown in section 3.2.6.

Table 2.1: An Indicative Output of the CG Index

Topic	Dimension	# Questions	Client Score	% Adherence per Dimension	Weight Dimension	Contribution of each Dimension to Final Score
1	Commitment to Corporate Governance	7	5	71%	20%	14%
2	Structure & Functioning of the Board	38	29	76%	20%	15%
3	Control Environment & Processes	25	13	52%	20%	10%
4	Transparency & Disclosure	18	15	83%	20%	17%
5	Shareholders Rights	12	4	33%	20%	7%
	SUM	84	66			
				Overall % of CG Adherence 0–100%		63%

Figure 2.1: Indicative CG Index Output

Caribbean companies (36 percent of the sample) due to the higher response rate. The total 61 respondents represent an aggregate disbursement of about $1.5 billion in debt and equity investment from IFC. Of the 61 respondents, 18 are listed entities, of which 13 are nonfinancial sector entities and 5 are financial institutions. Regarding classification, 5 respondents are Tier i, 42 are Tier ii, and 8 are Tier iii.[17] Regarding the type of financing, 25 operations are only equity deals, 33 are only debt operations, and 3 are both equity and debt clients.

[17] Tiering of IFC investment transactions is defined as a combination of the credit risk rating and the size of the investment, with Tier iii transactions, on average, being the most risky and largest in size.

Box 2.1: Advantage of a Broad CG Index

An advantage of constructing the CG Index with dozens of questions—resulting in a 0–100 percent score—is that it increases variance across the sample firms and the chances of finding statistically significant correlations. This is important for this study, given its relatively small sample of companies and short time span.

Further, grouping questions into five distinct dimensions in the CG Index allows a more nuanced analysis of the impact on firm performance of the overall dimension, as well as of specific practices within each dimension (such as the presence of an audit committee within the Control Environment and Processes).

As a hypothetical counterexample, a concise corporate governance indicator composed of just four levels (in which most companies would probably be placed in the same group) probably would not provide the variability of the CG quality indicator that allows for statistically significant results.

2.5. STUDY LIMITATIONS AND THE CAUSALITY ISSUE

This study seeks to investigate the *link* between CG and the performance of IFC clients; it does not seek to prove a *causal* relationship—from CG practices to performance. Given the small number of firms in the study sample as well as data from a relatively short time span of four to five years, the research provided a small number of firm-year observations. This in turn limited the ability to employ multiple regressions based on sophisticated econometric procedures—such as the GMM techniques—that are supposed to at least mitigate endogeneity issues. Thus the study cannot claim any causality running from CG to firm-level performance. It should be seen, therefore, as a *correlational* study instead of a causal one, from a methodological perspective.[18]

This caveat derives from the observational characteristic of the data[19] as well as from important limitations related to the sample and statistical methods used in this research.

First, the study analyzes a small sample of 61 companies that responded to the CG questionnaire and may be potentially biased toward better firms (for example, companies in financial distress were excluded, and firms with better relationships with IFC were more likely to participate). Box 2.2 provides further discussion of sampling bias.

Second, given that there has been no collection of the CG data in the past, the assessment of CG practices of IFC clients at the time of the disbursement in 2011 or 2012 was done by asking clients about it at the end of 2016. The accuracy of data is potentially compromised by recall bias and by the possibility that clients would tend to give the same response for both periods. However, the collected data were screened by the portfolio officers with knowledge of the company to verify, to the best of their knowledge, the accuracy of the information provided. Nevertheless, some conclusions may have been impaired.

The third limitation is that the sample is composed of companies from different industries and regions around the world. This introduces wide variations in stages of maturity in regulation, financial practices, investment climate, political risk, and so on. Influence of both the industry and country factors on CG can be multifaceted and inadequately considered in the study.

[18] A correlational study is conducted in the natural environment of the organization, with minimal or no interference by the researcher with the normal flow of work. In a causal study, on the other hand, the researcher tries to manipulate certain variables to study the effects of such manipulation on the dependent variables.

[19] The data in this study are observational in the sense that the researchers are not able to manipulate their variable of interest (the adherence to CG practices) to analyze its effect on the dependent variable (firm-level performance).

Table 2.2: Industry Breakdown of the Sample

Industry	Number of Companies	% of Sample
Telecommunications, Media, and Tech & Venture Investing (TMT)	3	5%
Financial Institutions Group (FIG)	30	49%
Infrastructure and Natural Resources (INR)	11	18%
Manufacturing, Agribusiness & Services (MAS)	17	28%
Total	61	100%

Table 2.3: Regional Breakdown of the Sample

Region	Number of Companies	% of Sample
Latin America and the Caribbean (LAC)	22	36%
Europe and Central Asia (ECA)	10	16%
East Asia and the Pacific (EAP)	7	11%
Sub-Saharan Africa (CAF)	9	15%
South Asia (SA)	8	13%
Middle East and North Africa (MENA)	5	8%
Total	61	100%

However, this last point is less of a concern for the financial indicators, which (via CRR and DOTS rating methodology) do incorporate country credit evaluation in the ranking assigned by IFC. For instance, the country credit rating is a factor in the IFC CRR rating assigned on an annual basis. But it is likely that data available to create variables may not be uniformly constructed for all companies. For example, DOTS applies different performance indicators to firms belonging to different industries. While financial institutions are assessed by indicators such as new loans to SMEs, manufacturing companies are assessed by indicators such as the gross value added.

Box 2.2: Sampling Bias

A sampling bias occurs when a sample is collected in such a way that some members of the intended population are less likely to be included than others. This is the case with this study. For instance, it excluded companies in financial distress, and the exclusion of extreme bad performers results in a biased sample.

The study also may have incurred into a selection bias, which is the selection of individuals, groups, or data for analysis in a way that precludes achievement of proper randomization, and the sample obtained is not representative of the population intended to be analyzed.

Consequently, our results are not generalizable to the whole population of IFC operations. In addition, there are two particular issues related to selection bias that tend to impair the ability to generalize the study results to the market. The first derives from the fact that IFC does not randomly select its client companies (IFC may, for instance, already select companies that are more profitable and with low risk). The second is that IFC requires companies to adopt some corporate governance practices to be eligible to receive its investment. As a result, the sample is probably more homogeneous in CG practices than firms from the market that are not part of the IFC portfolio.

Findings

The database of CG and performance indicators constructed for the study facilitated two principal avenues for investigation:

- ***Subgroup comparisons*—to test whether there is a significant difference of means between at least two subgroups (for example, companies belonging to the top 25 percent in improvement of CG practices versus the bottom 25 percent) on a performance variable of interest, such as ROE, by running two-sample difference of means tests.**
- ***Data reduction analysis*—to identify the most relevant CG questions, and to identify which specific CG questions are stronger predictors of performance indicators.**

3.1. CG SCORE ANALYSIS

The review of CG scores of the companies from the study sample at the time of IFC's original disbursement shows some interesting findings:[20]

On average, companies in the sample followed 60 percent of recommended CG practices at the time of IFC's original disbursement. This shows that companies usually adopt more than half of the corporate governance practices assessed by the study instrument at inception of their relationship with IFC.

In the analysis of each CG dimension, the highest score is in the area of Transparency and Disclosure (73.4 percent) followed closely by Control Environment (71.1 percent), while the area with the lowest score is Shareholder Rights (58.9 percent) followed by Commitment to CG (62.6 percent).

- If reviewed through the industry lens, the CG scores of financial institutions overall are 14 percent better than those of real sector companies (67 percent against 53 percent). The largest differences are in the areas of Control Environment (26 percent) and Commitment to CG (25 percent), while in the area of Shareholder Rights the real sector companies displayed better CG practices by 4 percent than financial institutions. The outperformance of financial institutions in two dimensions could be due to higher regulatory requirements for the financial industry and because such companies are generally more mature in their life stage.
- Interestingly, CG scores of companies where IFC invested in equity or debt instruments are essentially the same. Moreover, while board practices are generally better in equity clients, debt clients outperform in the area of Shareholder Rights.
- Listed companies in the sample have on average 6 percent higher CG scores than those not listed on stock exchanges, with Transparency and Disclosure and Control Environment displaying the largest difference between the scores of the two groups. However, unlisted companies reported on average 16 percent better practices in the area of Shareholder Rights. Possibly, this is explained by simplicity of shareholder protections in unlisted companies where

[20] For more details on CG scores at disbursement and end of study, and the variation of the scores of different subgroups,see Appendix A.

existing shareholders rely on private shareholder agreements to protect their interests.

- Finally, the size of IFC investments (Tier iii versus Tiers ii and i) did not appear to be associated with the CG scores of the companies.

The study then analyzed the CG performance of investee companies during the portfolio holding period. The analysis produced the following observations:

- On average, companies in the study sample improved their CG score by more than 7.0 percent from the time of IFC's disbursement until the end of study period (June 2016). Largest improvements were in the dimensions of Commitment to CG (11.3 percent) and Board Practices (8.0 percent), while the least improvements were in Shareholder Rights (1.0 percent).
- Although real sector companies generally displayed lower CG scores at the time of disbursement compared with financial institutions, the improvements of the CG performance in these two groups were essentially the same overall. Financial institutions appeared to focus more on improvements in Commitment to CG by improving their CG policies as well as prioritizing improvements in their Control Environment. The real sector companies also improved their formal CG policies while also making relevant strides in Transparency and Disclosure.
- Companies with both equity and debt investments also improved their CG scores on average by the same 8 percent. The difference between variation of CG scores of listed and unlisted companies (6 percent versus 7) is negligible.
- Interestingly, although companies with large or small investments from IFC had similar CG scores at disbursement, companies with smaller investments improved more (8 percent versus 2 percent for larger investments).

The above description of CG scores at disbursement and CG improvements throughout the study period for different subgroups shows that the most striking differences are among the financial institutions and real sector companies, especially in the areas of Commitment to CG and Control Environment. In other aspects, such as type of investment product, size of investment, and companies' listing on stock exchanges, material differences were not observed, thus making the results from the total sample applicable to each subgroup as well.

3.2. SUBGROUP COMPARISONS

Against the backdrop of baseline CG information of the companies in the study sample, the subgroup analysis was conducted by segregating firms into four quartiles based on the following:

- The companies' level of application of CG practices in 2011—to test the first objective of the study (to find out whether better CG practices of IFC clients at the disbursement date are associated with better performance during the investment period);
- CG improvement over time—to test the second objective (to discover whether companies with greater improvement of their CG practices from IFC's disbursement date until the end of the study period perform better throughout this period); and
- The average level of following recommended CG practices from 2011 to 2016—to test the third objective (to learn whether the average level of CG in IFC clients is associated with better firm performance).

After segregating companies into four groups, the study compared the performance of the top versus the bottom quartile through difference of means tests. Results of this procedure for each study hypothesis are presented below. But first, note in Table 3.1 the correlation coefficients between the two main CG variables (Full CG Index and Core CG Index) and the performance variables.

Table 3.1 presents statistically significant correlations between the two CG indicators and performance variables. The correlations are even stronger for the Core CG Index than for the Full CG Index. Specifically, the study team observed that all correlations between the Core CG Index and all performance variables are statistically significant at the 1 percent level.

Table 3.1: Correlations Between Selected Variables

	Full CG Index	Core CG Index
ODO 1–6 SCORE	0.2288***	0.3408***
DOTS FIN	0.1012*	0.2596***
DOTS ECON	0.1768***	0.2346***
ROE/ROIC	0.1067**	0.3105***
EROE/EROIC	0.0689	0.3106***
CREDIT RISK 1–7	−0.3289***	−0.2775***
CREDIT RISK 1–11	−0.3250***	−0.2863***

Note: The table exhibits Pearson correlation coefficients between CG variables in the first row and performance variables in the first column. Full CG Index is the level of adherence of the sample firms to the 84-question CG questionnaire. Core CG Index measures the average level of adherence of the sample firms to the 26 questions from the CG questionnaire (the subset of CG questions considered by IFC's ESG department as the most relevant). ODO 1–6 score is the overall development outcome rating of the project on a 1–6-point scale ranging from highly unsuccessful to highly successful. DOTS FIN and DOTS ECON are the average financial and economic performance assessment of the project on a 1–4 scale ranging from unsatisfactory to excellent. ROE/ROIC is the annual return on equity or return on invested capital of the project. EROE/EROIC is the annual economic return on equity or economic return on invested capital of the project. CREDIT RISK 1–7 and CREDIT RISK 1–11 represent the credit risk rating of the project on two different scales. Appendix E details the operational definitions of all variables. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

3.2.1. First Objective: Effect of CG at Disbursement on Firm Performance

For the first objective, the study looked for any relationship between a company's CG practices at the disbursement date and its performance during the investment period. Table 3.2 compares the performance indicators of two groups: Top CG refers to the group composed of the top quartile of firms with the highest CG scores at the disbursement date, and Bottom CG refers to the group of companies with the lowest CG scores at the same date.

On average, companies from the top quartile exhibited an adherence of 82 percent to the CG Index at the disbursement date, and firms from the bottom quartile exhibited a much lower level of adherence of only 37 percent.

As shown in Table 3.2, the main result is that companies with the highest CG score exhibit a lower credit risk rating. For example, when the credit risk rating of the project is converted to the scale from 1 to 11 (CRR 1–11), the quartile of companies with the highest CG practices exhibit a credit risk of 4.62, which is significantly lower (at the 1 percent level) than the score of 6.08 of the group that displays weaker CG practices. Thus investing in companies with better CG at the disbursement date is associated with a lower average CRR by 1.50 points throughout the investment period.

Other performance variables point in the expected direction. However, the team did not observe statistically significant results for most of these findings. Thus the data only indicated partial support for the first objective. It is likely that the small number of observations may be a cause for the absence of statistically significant results in this case. Figure 3.1 compares the credit risk ratings of the two quartiles according to the last two rows of Table 3.2.

3.2.2. Second Objective: Improvements of CG Practices and Performance

Table 3.3 uses the same analysis as the previous table to test the second objective. It compares the performance indicators of the top and bottom quartiles, looking specifically at improvement of CG practices from 2011 to 2016.

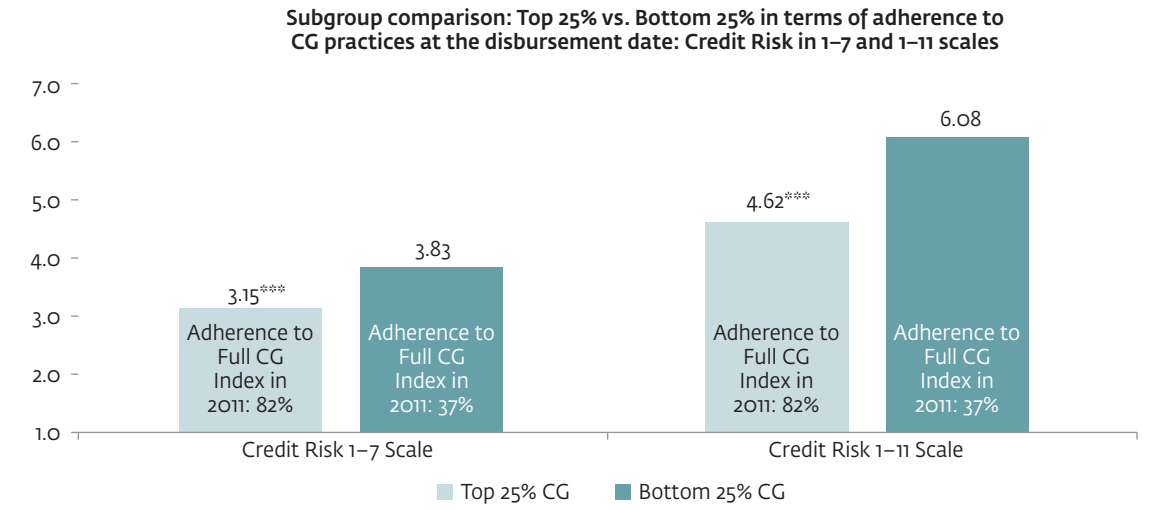
Table 3.2: CG Practices at the Disbursement Date

Performance Variable	Legend	FULL GC INDEX Bottom CG P25 Mean adherence to CG Index in 2011 = 37%	FULL GC INDEX Top CG P75 Mean adherence to CG Index in 2011 = 82%	p-value a difference means (P75–P25)
ODO 1–6 SCORE	Mean	**4.03**	**4.37**	**0.098***
	SD	*(0.60)*	*(0.77)*	
	n	*n=16*	*n=14*	
DOTS FIN	Mean	**3.36**	**3.34**	0.515
	SD	*(1.17)*	*(1.11)*	
	n	*n=16*	*n=14*	
DOTS ECON	Mean	**3.54**	**3.78**	0.279
	SD	*(0.97)*	*(1.18)*	
	n	*n=16*	*n=14*	
ROE/ROIC	Mean	**11.69%**	**12.64%**	0.384
	SD	*(8.78%)*	*(8.38%)*	
	n	*n=15*	*n=14*	
EROE/EROIC	Mean	**15.96%**	**17.16%**	0.380
	SD	*(11.20%)*	*(9.74%)*	
	n	*n=15*	*n=14*	
CREDIT RISK 1–7	Mean	**3.83**	**3.15**	**0.000*****
	SD	*(0.39)*	*(0.37)*	
	n	*n=12*	*n=13*	
CREDIT RISK 1–11	Mean	**6.08**	**4.62**	**0.000*****
	SD	*(1.08)*	*(0.77)*	
	n	*n=12*	*n=13*	

Note: The table exhibits mean-comparison tests between selected variables (two-sample t tests with unequal variances) of two groups: TOP CG P75 refers to the top 25% of firms in level of adherence to the 84-question CG questionnaire at the disbursement date; BOTTOM CG P25 refers to the bottom 25% in the level of adherence to the CG Index on the same date. ODO 1–6 score is the overall development outcome rating of the project on a 1–6-point scale ranging from highly unsuccessful to highly successful. DOTS FIN and DOTS ECON are the average financial and economic performance assessment of the project on a 1–4 scale ranging from unsatisfactory to excellent. ROE/ROIC is the annual return on equity or return on invested capital of the project. EROE/EROIC is the annual economic return on equity or economic return on invested capital of the project. CREDIT RISK 1–7 and CREDIT RISK 1–11 represent the credit risk rating of the project on two different scales. Appendix E details the operational definitions of all variables. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

[a] The p-value, or probability value, is the level of marginal significance within a hypothesis test representing the probability of the occurrence of a given event. For the purpose of this study, a small p-value (typically ≤ 0.05) provides strong evidence that there is a significant difference between the performance indicators of top 75% and bottom 25% companies based on their CG scores. So a small p-value allows us to reject the claim that performance from the two groups is equal. On the other hand, a large p-value (> 0.05) indicates weak evidence against the null hypothesis, in the sense that it does not allow us to reject the idea that performance indicators from the two groups are statistically different.

Figure 3.1: Credit Risk Ratings in CG Practices at Disbursement



On average, companies from the top quartile improved their CG practices by 25 percent from 2011 to 2016, while firms from the bottom quarter exhibited a null variation relative to the CG Index over this period.

From the statistical viewpoint, the main result shown in Table 3.3 is that companies with the greatest improvement of CG practices achieved better performance in the overall financial and economic assessment of the project (DOTS FIN and DOTS ECON). In the first case, firms from the top quartile of CG improvement achieved DOTS Fin of 3.72 on a 1–4 scale, while the bottom quartile performers achieved a score of only 3.09. In the second case, top quartile firms exhibited DOTS Econ of 3.94, against a score of 3.30 from the bottom group. In both cases, the difference of means between the two groups is statistically significant at the 10 percent level. Companies that improved their CG more during the investment period, therefore, achieved about 20 percent higher performance in the average DOTS Fin indicator and DOTS Econ indicator.

The results for other performance variables were not statistically significant. Again, the small number of firms in the sample have led to not finding statistically significant difference of means between the two groups.

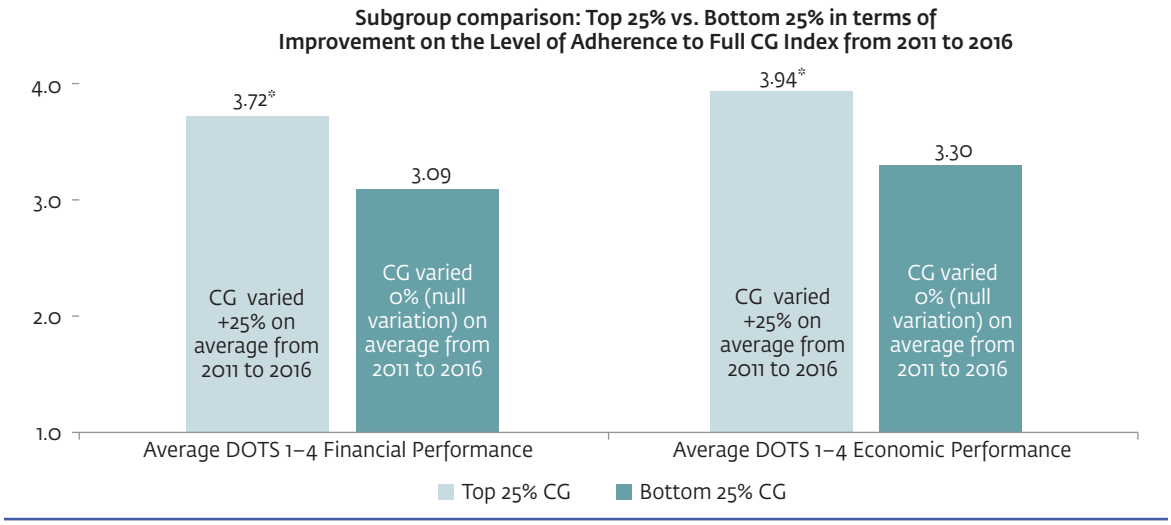
Figure 3.2 compares the average DOTS Fin and DOTS Econ performance of the top and bottom quartiles as per the second and third rows of Table 3.3.

3.2.3. Third Objective: Average Level of CG Practices and Performance

As specified in section 2.1, the study also endeavored to check whether the overall level of CG practices during the investment period is positively correlated with performance indicators. Considering that CG practices tend to be relatively stable over time (as demonstrated by the fact that about one-quarter of the sample did not report any variation of their CG practices during the five years under analysis), an average CG score for each firm is calculated for the five years under analysis based on their CG scores at the disbursement date and end of the study period.

Although admittedly not perfect in providing the exact CG score of each firm on an annual basis, this procedure allowed us to check if companies exhibiting higher CG standards throughout the period of analysis indeed outperformed those exhibiting poorer standards. An important advantage of this approach is that, by computing the annual average CG score for each firm, this indicator was correlated with performance metrics

Figure 3.2: Financial and Economic Improvement of CG Practices



that are also calculated on an annual basis. So the mean level of recommended CG practices of the sample firms from 2011 to 2016 was computed, as shown in Table 3.4. This in turn increases the number of firm-year observations belonging to each quartile. Then the results were compared for companies in the top and bottom quartiles of average CG scores.

Because of the larger number of observations, there are statistically significant results for all performance variables in Table 3.4 except for EROE/EROIC. Specifically, companies with greatest mean CG Index score exhibit better performance than the group of CG laggards in the areas of ODO, DOTS FIN, DOTS ECON, ROE, and CREDIT RISK.

Looking at the ODO specifically, which is a measure of overall development impact, it can be observed that companies from the top quartile achieve, on average, a score of 4.41 against a much smaller ODO of 3.98 of the bottom quartile. This result is statistically significant at the 1 percent level. Another example comes from the ROE. Companies from the top CG quartile exhibit an average ROE that is about 20 percent higher than the average ROE of the bottom CG quartile (13.05 percent versus 10.96 percent).

Because of the increase in the number of observations, the study team finds much stronger support for the third hypothesis.

3.2.4. Core CG Index and Performance

Instead of testing correlations between CG and performance with the Full CG Index, the analysis above is repeated here using the Core CG Index, consisting of the 26 questions, as shown in Table 3.5.[21]

As indicated by the correlation table presented earlier in this section, correlations between CG and performance are much stronger when the Core CG Index, consisting of 26 questions, is used. In this case, statistically significant results at the 1 percent level are observed for all performance variables, showing that companies with greatest observance of recommended CG practices achieve better performance than those from the group with the lower level of following recommended CG practices.

The difference between the groups in this case is starker. For example, companies from the top CG quartile exhibit an average ROE of 18.56 percent, which is about three

[21] The team also analyzed Objectives 1 and 2 using the Core CG Index instead of the full version. The results were qualitatively the same.

Table 3.3: Mean Comparison of CG Improvement from 2011 to 2016

		FULL GC INDEX		
Performance Variable	Legend	Bottom CG P25 Mean variation of CG practices = 0%	Top CG P75 Mean variation of CG practices = +25%	p-value difference means (P75–P25)
ODO 1–6 SCORE	Mean	**4.24**	**4.36**	0.345
	SD	*(0.83)*	*(0.72)*	
	n	*n=19*	*n=10*	
DOTS FIN	Mean	**3.09**	**3.72**	**0.081***
	SD	*(0.97)*	*(1.16)*	
	n	*n=19*	*n=10*	
DOTS ECON	Mean	**3.30**	**3.94**	**0.068***
	SD	*(1.11)*	*(1.02)*	
	n	*n=19*	*n=10*	
ROE/ROIC	Mean	**10.05%**	**8.58%**	0.6119
	SD	*(7.33%)*	*(15.84%)*	
	n	*n=18*	*n=11*	
EROE/EROIC	Mean	**13.35%**	**11.53%**	0.6087
	SD	*(9.78%)*	*(19.04%)*	
	n	*n=18*	*n=10*	
CREDIT RISK 1–7	Mean	**3.73**	**3.36**	0.1553
	SD	*(0.99)*	*(0.92)*	
	n	*n=19*	*n=11*	
CREDIT RISK 1–11	Mean	**5.89**	**5.36**	0.1986
	SD	*(1.82)*	*(1.50)*	
	n	*n=19*	*n=11*	

Note: The table exhibits mean-comparison tests between selected variables (two-sample t tests with unequal variances) of two groups: TOP CG P75 refers to the top 25% firms in improvement in the adherence to the 84-question CG questionnaire from 2011 to 2016; BOTTOM CG P25 refers to the bottom 25% in the adherence to the CG Index over this same period. Because 14 companies from our sample reported null variation in their CG score from 2011 to 2016, we have a larger number of companies in the bottom quartile group compared with the top quartile group. ODO 1–6 score is the overall development outcome rating of the project on a 1–6-point scale ranging from highly unsuccessful to highly successful. DOTS FIN and DOTS ECON are the average financial and economic performance assessment of the project on a 1–4 scale ranging from unsatisfactory to excellent. ROE/ROIC is the annual return on equity or return on invested capital of the project. EROE/EROIC is the annual economic return on equity or economic return on invested capital of the project. CREDIT RISK 1–7 and CREDIT RISK 1–11 represent the credit risk rating of the project on two different scales. Appendix E details the operational definitions of all variables. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

times the average ROE of 6.91 percent from the bottom CG quartile. The same difference of magnitude is found for the economic return on equity. While firms with the highest level of CG exhibit an EROE of 24.35 percent, CG laggards exhibit an EROE of only 9.32 percent. Figure 3.3 illustrates these results.

3.2.5. Corporate Governance and E&S Review Rating

The team also carried out an additional analysis to examine the relationship between the recommended CG practices of the sample firms and their Environmental

Table 3.4: Mean Comparison of Level of Average CG Practices

		FULL CG INDEX		
Performance Variable	Legend	Bottom CG P25 Mean adherence to CG Index 2011–2016 = 42%	Top CG P75 Mean adherence to CG Index 2011–2016 = 84%	p-value difference means (P75–P25)
ODO 1–6 SCORE	Mean	**3.98**	**4.41**	**0.000*** **
	SD	*(0.64)*	*(0.77)*	
	n	*n=96*	*n=90*	
DOTS FIN	Mean	**3.02**	**3.47**	**0.004*** **
	SD	*(1.15)*	*(1.11)*	
	n	*n=96*	*n=90*	
DOTS ECON	Mean	**3.25**	**3.82**	**0.000*** **
	SD	*(0.94)*	*(1.15)*	
	n	*n=96*	*n=90*	
ROE/ROIC	Mean	**10.96%**	**13.05%**	**0.040** **
	SD	*(8.04%)*	*(7.90%)*	
	n	*n=90*	*n=90*	
EROE/EROIC	Mean	**15.70%**	**16.72%**	0.258
	SD	*(11.20%)*	*(9.55%)*	
	n	*n=90*	*n=84*	
CREDIT RISK 1–7	Mean	**3.86**	**3.15**	**0.000*** **
	SD	*(0.76)*	*(0.75)*	
	n	*n=92*	*n=89*	
CREDIT RISK 1–11	Mean	**6.15**	**4.80**	**0.000*** **
	SD	*(1.44)*	*(1.42)*	
	n	*n=92*	*n=89*	

Note: The table exhibits mean-comparison tests between selected variables (two-sample t tests with unequal variances) of two groups: TOP CG P75 refers to the top 25% firms in the mean level of adherence to the 84-question CG questionnaire from 2011 to 2016; BOTTOM CG P25 refers to the bottom 25% in the level of adherence to the CG Index over this same period. ODO 1–6 score is the overall development outcome rating of the project on a 1–6-point scale ranging from highly unsuccessful to highly successful. DOTS FIN and DOTS ECON are the average financial and economic performance assessment of the project on a 1–4 scale ranging from unsatisfactory to excellent. ROE/ROIC is the annual return on equity or return on invested capital of the project. EROE/EROIC is the annual economic return on equity or economic return on invested capital of the project. CREDIT RISK 1–7 and CREDIT RISK 1–11 represent the credit risk rating of the project on two different scales. Appendix E details the operational definitions of all variables. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

& Social Review Rating (ESRR). ESRR is an index created by IFC to measure its clients' E&S capability and their management of environmental and social issues in accordance with IFC's Sustainability Framework. It is computed on a 1–4-point scale: excellent, satisfactory, partly satisfactory, and unsatisfactory. Thus a lower score indicates a lower environmental and social risk associated with the company.

The analysis began with the observation that there is a –0.2438 pairwise correlation between the two variables. Although not large in absolute terms (correlations vary

from –1 to +1), this correlation is significant at the 1 percent level. The next step was a procedure analogous to the previous subgroup analyses—dividing the sample companies into four quartiles based on CG practices and then comparing the average ESRR of the two extreme quartiles. The results are presented in Figure 3.4.

According to Figure 3.4, companies from the top quartile exhibited an average ESRR of 2.01, against a higher ESRR of 2.19 for the companies in the bottom quartile (this difference was statistically significant at the 5 percent level). Put simply, companies from the top quartile of CG practices on average exhibit a 10 percent lower ESRR than those in the bottom quartile.

Figure 3.3: ROE/ROIC and EROE/EROIC and the Core CG Index

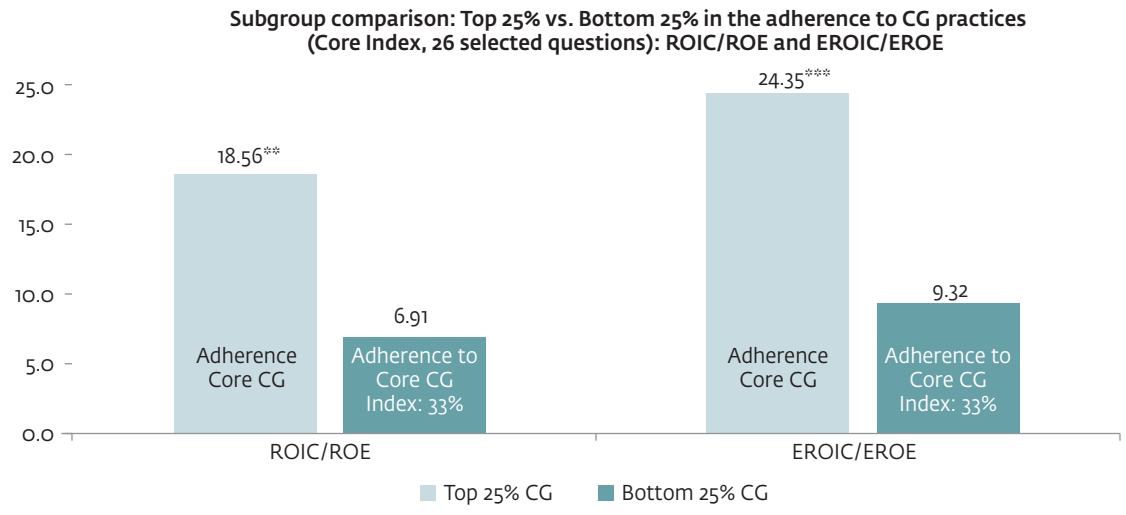


Table 3.5: Core CG Index Average Score and Performance

		CORE CG INDEX		
Performance Variable	Legend	Bottom CG P25 Core CG Index (26q) 2011–2016 = 33%	Top CG P75 Core CG Index (26q) 2011–2016 = 82%	p-value difference means (P75–P25)
ODO 1–6 SCORE	Mean	**3.95**	**4.88**	**0.000*** **
	SD	*(0.70)*	*(0.67)*	
	n	*n=90*	*n=78*	
DOTS FIN	Mean	**3.12**	**4.03**	**0.000*** **
	SD	*(1.09)*	*(0.82)*	
	n	*n=90*	*n=78*	
DOTS ECON	Mean	**3.28**	**4.10**	**0.000*** **
	SD	*(0.98)*	*(0.85)*	
	n	*n=90*	*n=78*	
ROE/ROIC	Mean	**6.91%**	**18.56%**	**0.000*** **
	SD	*(13.43%)*	*(8.37%)*	
	n	*n=84*	*n=78*	

Table 3.5: Core CG Index Average Score and Performance *(Continued)*

Performance Variable	Legend	CORE CG INDEX: Bottom CG P25 Core CG Index (26q) 2011–2016 = 33%	CORE CG INDEX: Top CG P75 Core CG Index (26q) 2011–2016 = 82%	p-value difference means (P75–P25)
EROE/EROIC	Mean	**9.32%**	**24.35%**	**0.000*****
	SD	*(15.84%)*	*(11.29%)*	
	n	*n=84*	*n=78*	
CREDIT RISK 1–7	Mean	**3.84**	**3.52**	**0.006*****
	SD	*(0.84)*	*(0.82)*	
	n	*n=93*	*n=77*	
CREDIT RISK 1–11	Mean	**6.17**	**5.45**	**0.001*****
	SD	*(1.57)*	*(1.49)*	
	n	*n=93*	*n=77*	

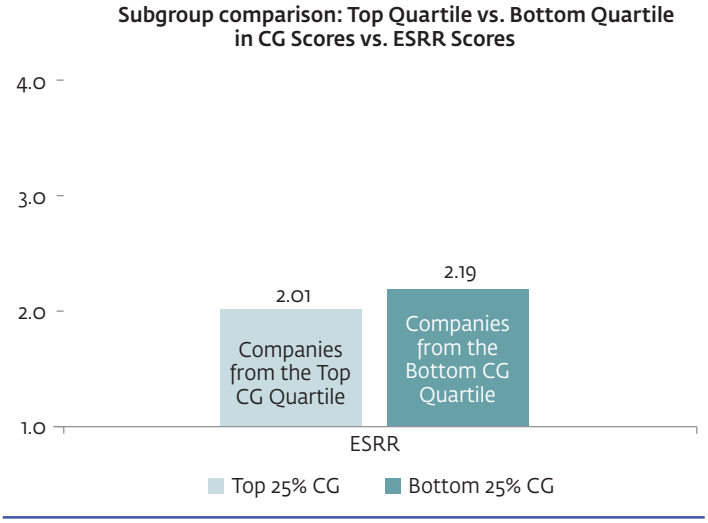
Note: The table exhibits mean-comparison tests between selected variables (two-sample t tests with unequal variances) of two groups: TOP CG P75 refers to the top 25% firms in the mean level of Core CG Index scores of the CG questionnaire composed of 26 questions. BOTTOM CG P25 refers to the bottom 25% of the Core CG Index. ODO 1–6 score is the overall development outcome rating of the project on a 1–6-point scale ranging from highly unsuccessful to highly successful. DOTS FIN and DOTS ECON are the average financial and economic performance assessment of the project on a 1–4 scale ranging from unsatisfactory to excellent. ROE/ROIC is the annual return on equity or return on invested capital of the project. EROE/EROIC is the annual economic return on equity or economic return on invested capital of the project. CREDIT RISK 1–7 and CREDIT RISK 1–11 represent the credit risk rating of the project on two different scales. Appendix E details the operational definitions of all variables. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

3.2.6. Splitting the Sample by Key Project Characteristics

To conclude the subgroup comparison, the study segregated the sample along three key characteristics of the project: 1) equity versus debt deals; 2) Tier i or Tier ii operations versus Tier iii; and 3) financial versus nonfinancial clients. This allows an investigation into whether the relationship between CG and performance holds for each one of these categories of companies.

Tables 3.6 and 3.7 show a top versus bottom quartile analysis of the sample subset of equity deals versus debt deals, using the Core CG Index.[22]

Figure 3.4: ESRR and Average CG Scores



[22] This section presents the results from using the reduced version of the CG Index. Results with the full index were qualitatively the same, although weaker in statistical significance.

Tables 3.6 and 3.7 show that companies belonging to the top quartile for CG exhibit substantially better performance indicators than those from the bottom quartile for both equity and debt deals. Thus the statistically positive correlation between CG and performance holds for both IFC equity and debt investments when considered as independent groups. For debt deals (Table 3.7:), all results were significant at the 1 percent level. For equity deals, however, Table 3.6 shows that DOTS economic performance was the only variable with coefficients that were not statistically significant (although pointing in the expected direction). The tables also indicate that, for

Table 3.6: Split-Sample Key Characteristics for Equity Deals

		CORE CG INDEX—ONLY EQUITY DEALS		
Performance Variable	Legend	Bottom CG P25 Adherence to Core CG Index (26q) 2011–2016 = 32%	Top CG P75 Adherence to Core CG Index (26q) 2011–2016 = 81%	p-value difference means (P75–P25)
ODO 1–6 SCORE	Mean	**3.58**	**4.80**	**0.000*** **
	SD	*(0.28)*	*(0.68)*	
	n	*n=24*	*n=48*	
DOTS FIN	Mean	**2.92**	**4.03**	**0.000*** **
	SD	*(0.81)*	*(0.85)*	
	n	*n=24*	*n=48*	
DOTS ECON	Mean	**3.08**	**3.78**	**0.117**
	SD	*(1.00)*	*(0.91)*	
	n	*n=24*	*n=48*	
ROE/ROIC	Mean	**–2.19%**	**18.84%**	**0.000*** **
	SD	*(20.04%)*	*(9.17%)*	
	n	*n=24*	*n=48*	
EROE/EROIC	Mean	**–1.80%**	**24.92%**	**0.000*** **
	SD	*(22.84%)*	*(12.77%)*	
	n	*n=24*	*n=48*	
CREDIT RISK 1–7	Mean	**4.11**	**3.75**	**0.072***
	SD	*(0.99)*	*(0.89)*	
	n	*n=28*	*n=48*	
CREDIT RISK 1–11	Mean	**6.78**	**5.94**	**0.033****
	SD	*(1.91)*	*(1.55)*	
	n	*n=28*	*n=48*	

Note: The table exhibits mean-comparison tests for *equity* deals between selected variables (two-sample t tests with unequal variances) of two groups: TOP CG P75 refers to the top 25% firms in the mean level of adherence to the reduced version (Core CG Index) of the CG questionnaire, composed of 26 questions. BOTTOM CG P25 refers to the bottom 25% in the level of adherence to the Core CG index. ODO 1–6 score is the overall development outcome rating of the project on a 1–6-point scale ranging from highly unsuccessful to highly successful. DOTS FIN and DOTS ECON are the average financial and economic performance assessment of the project on a 1–4 scale ranging from unsatisfactory to excellent. ROE/ROIC is the annual return on equity or return on invested capital of the project. EROE/EROIC is the annual economic return on equity or economic return on invested capital of the project. CREDIT RISK 1–7 and CREDIT RISK 1–11 represent the credit risk rating of the project on two different scales. Appendix E details the operational definitions of all variables. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

some performance indicators such as ROE, the difference between the two extreme CG quartiles is much larger for the subsample of equity deals than for debt deals. Specifically, while the ROE difference between the top and bottom CG quartiles is about 20 percent for equity deals, the same difference amounts to only 8 percent for debt deals.

The team carried out the same analyses by splitting the sample into Tier i or Tier ii operations versus Tier iii, and into financial versus nonfinancial clients. The results (available on request) are qualitatively the same as for the analysis of debt versus equity. In all cases, the superior performance of companies belonging to the top quartile of CG practices holds for all three subgroups analyzed.

Table 3.7: Split-Sample Key Characteristics for Debt Deals

		CORE CG INDEX—ONLY DEBT DEALS		
Performance Variable	Legend	Bottom CG P25 Adherence to Core CG Index (26q) 2011–2016 = 33%	Top CG P75 Adherence to Core CG Index (26q) 2011–2016 = 85%	p-value difference means (P75–P25)
ODO 1–6 SCORE	Mean	**4.09**	**5.00**	**0.000*****
	SD	*(0.76)*	*(0.64)*	
	n	*n=66*	*n=30*	
DOTS FIN	Mean	**3.19**	**4.05**	**0.000*****
	SD	*(1.17)*	*(0.78)*	
	n	*n=66*	*n=30*	
DOTS ECON	Mean	**3.35**	**4.62**	**0.000*****
	SD	*(0.97)*	*(0.34)*	
	n	*n=66*	*n=30*	
ROE/ROIC	Mean	**10.55%**	**18.11%**	**0.000*****
	SD	*(7.08%)*	*(7.01%)*	
	n	*n=60*	*n=30*	
EROE/EROIC	Mean	**13.77%**	**23.44%**	**0.000*****
	SD	*(8.92%)*	*(8.54%)*	
	n	*n=60*	*n=30*	
CREDIT RISK 1–7	Mean	**3.72**	**3.14**	**0.000*****
	SD	*(0.74)*	*(0.52)*	
	n	*n=65*	*n=29*	
CREDIT RISK 1–11	Mean	**5.91**	**4.65**	**0.000*****
	SD	*(1.33)*	*(0.97)*	
	n	*n=65*	*n=29*	

Note: The table exhibits mean-comparison tests for *debt* deals between selected variables (two-sample t tests with unequal variances) of two groups: TOP CG P75 refers to the top 25% firms in the mean level of adherence to the reduced version (Core CG Index) of the CG questionnaire, composed of 26 questions. BOTTOM CG P25 refers to the bottom 25% in the level of adherence to the Core CG index. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Appendix E details the operational definitions of all variables.

3.3. PRIORITIZING SPECIFIC CG INDICATORS

The second method of investigation consists of identifying which specific practices from the CG Index are the strongest predictors of performance variables. This is done through a data reduction analysis.[23]

The first step was to run separate OLS (ordinary least squares) regressions for each question on each performance variable, then to store the absolute value of all t-statistics—the abs(t). The third step consisted of ranking the abs(t) of each question for each performance indicator (for *n* performance variables, therefore, the question is ranked *n* times).[24] The final step was to sort all questions based on the mean *t-stat* ranking obtained for all performance variables.[25] Table 3.8 lists the 20 highest-ranked practices of the CG Index.

As Table 3.8 indicates, 12 out of the 20 top-ranked questions belong to the dimension of Control Environment and Processes. Many of these practices are aimed at safeguarding companies' assets, which has a direct impact on a company's performance. These key CG practices include having a proper and independent internal audit function and compliance function, and establishing board-approved risk management policies. To successfully implement these practices, it is critical to have a properly established and functioning board of directors, often through its audit committee, which oversees the management and ensures that proper compliance, risk management, and internal audit functions are in place. Moreover, when the list of top-ranked CG practices is reviewed against credit risk rating (as opposed to all measures of performance), an even stronger focus on proper control environment practices is made. The analysis of top-20 CG indicators done separately for financial institutions and real sector companies shows significant overlap between the two, which makes it possible to generalize the top-20 list above for the study sample.

The team also carried out an alternative analysis (available on request) that focused on the companies that exhibited the best financial performance. It began with identifying the 10 firms with the highest average return on equity throughout the investment period.[26] It was apparent that these companies exhibited an average ROE of 25.1 percent during this period, about 2.5 times the average ROE of 10.8 percent of the full sample. The next step was to compute the average level of compliance of these 10 top financial performers with each question of the CG Index and rank all questions by the average level. This procedure led to identification of the CG practices commonplace among all firms with best financial performance of the sample.

To conclude, it is important to highlight an important limitation of the analyses carried out in this section. Because the sample is likely biased, as pointed out in Box 2.2, the results are not generalizable to the whole population of IFC investments. This means that top-20 CG practices identified as the strongest predictors of performance in this section would not necessarily be the same if the same exercise were done with a different sample of companies. So to identify the core CG practices that IFC should prioritize during its investment appraisal,

[23] The two most common data reduction techniques are principal component analysis (PCA) and factor analysis (FA). PCA is a linear combination of variables; FA is a measurement model of a latent variable. The first approach to data reduction creates one or more index variables from a larger set of measured indicators through a linear combination of a set of variables. The second approach is a model of the measurement of a latent variable. This latent variable cannot be directly measured with a single variable. Instead, it is seen through the relationships it causes in a set of Y variables.
[24] For example, if there are five performance variables, each question is ranked five times. The rank for a certain performance variable goes from 1—the lowest abs(t) obtained for this variable—up to the highest ranking, which equals the number of questions answered for this performance variable.
[25] This investigation started with Stata's principal-component factor (PCF) analysis. However, due to the small number of observations and that just 9 companies responded to all 84 questions, this technique did not generate meaningful results. The team then carried out this described alternative procedure to rank all questions based on their relevance as a predictive factor of firm performance.
[26] The top 10 firms in the average ROE from 2011 to 2016 are Nirdhan, BSP, AgBank, Transilvaniabank, Banco BHD, ACLEDA Bank, MTBank, Titan Danube, Bakhresa Rwanda, and Banco General.

a specific study would be necessary with a larger and randomly selected sample. As a suggestion, this future study could also identify the core CG practices to be prioritized for companies or projects with different characteristics, such as family versus nonfamily businesses, listed versus nonlisted companies, and equity versus debt deals.

Table 3.8: Top 20 CG Practices—Strongest Predictors of Performance Variables

Rank	Question	Description	CG Dimension
1	Q49	The internal audit has its own charter or specific terms of reference.	Control Environment
2	Q40	The company follows internationally recognized standards on internal controls.	Control Environment
3	Q50	Financial statements are audited by a recognized independent auditing firm.	Control Environment
4	Q2	The company has a written code of conduct.	Commitment to CG
5	Q39	There is one person formally responsible for the compliance initiatives of the company (e.g., compliance officer).	Control Environment
6	Q45	There is one person formally responsible for the risk management initiatives of the company (e.g., CRO or risk manager).	Control Environment
7	Q48	There is an internal audit function in place.	Control Environment
8	Q26	The board conducts self-evaluations or other reviews of its effectiveness on an annual basis.	Board of Directors
9	Q25	The board has a formal remuneration policy for board members, taking into account their membership of committees.	Board of Directors
10	Q24	The company has a written policy establishing rules for the approval of related-party transactions (RPTs).	Board of Directors
11	Q44	The board oversees the implementation of the risk management policies.	Control Environment
12	Q3	Board members receive periodic training on CG issues, funded by the company.	Commitment to CG
13	Q23	The company has a corporate secretary.	Board of Directors
14	Q46	The internal audit unit has an audit work plan that is approved by the audit committee or by the board every year.	Control Environment
15	Q47	The internal audit reports directly to the audit committee or to the board of directors.	Control Environment
16	Q36	The audit committee oversees the implementation of the internal and external auditors' recommendations.	Control Environment
17	Q19	The board has an audit committee in place.	Board of Directors
18	Q21	The board has regular meetings 6 to 8 times per year (8 to 12 for financial institutions).	Board of Directors
19	Q43	The board approves the company's risk management policies.	Control Environment
20	Q42	The company has a specific whistleblower channel that ensures anonymity for informers and due treatment of the complaints.	Control Environment

Conclusions and Improvement Opportunities

This empirical study on the link between CG and performance of IFC portfolio companies in emerging markets shows that CG not only is an important risk element but also has a positive association with client performance, as evidenced by lower investment risk and higher financial performance. Specifically, for IFC's new business, the study's conclusion is that better screening of potential IFC clients' CG practices is correlated with lower credit risk during the investment period and thus associated with a lower probability of credit default. The ex ante CG analysis is critical for selecting the right clients and could be better integrated with other elements of investment analysis, including credit and valuation. It also would be beneficial, where relevant, to define criteria and analysis to incorporate CG risk factors into the assessment of credit risk.

For IFC's portfolio operations, the study shows that investing time and resources in monitoring the clients' CG performance and helping them improve on CG is associated with better financial and economic performance. This is where IFC's pressure on and/or support to the clients may lead to a win-win outcome. IFC's CG advisory services therefore would be an important tool for value creation. Another relevant conclusion is that, due to the positive correlation between CG and ESRRs and to IFC's internal barriers for repeat investments in companies with high ESRR scores, CG improvements can be a possible tool to reduce the E&S risk and have more clients eligible for additional investments.

The study's findings also indicate that the positive correlation between CG and performance takes place for all types of portfolio clients, irrespective of the size of the investment, type of the investment product, listing, industry, and other parameters. This shows that a minimum level of CG risk assessment and continuous monitoring of CG is probably an important factor for IFC's business. On top of this, IFC clients (perhaps specifically in equity transactions) that understand CG, recognize its value, and are committed to it can benefit substantially from CG improvements, including relying on IFC's global experience and expertise in CG advisory services.

Another key conclusion of this study is that, although the concept of CG is broad, it is still possible to have a practical and prioritized approach to it. CG spans a range of elements, including 1) the organization and functioning of the board; 2) the daily operations of management to ensure that the company's assets are safeguarded through robust systems of internal control, risk management, compliance, and internal audit; 3) the proper, relevant, and timely disclosure of financial and nonfinancial information; and 4) mechanisms for protecting the rights of all shareholders. Yet there is no one size that fits all companies. This diverse nature of CG should be properly captured in risk analysis. And it is from such risk perspective that it is possible and recommended to focus on and prioritize certain core CG indicators that have a higher chance of having an impact on performance. Such core CG indicators, possibly in the form of corporate governance KPIs, should be analyzed and monitored in every single IFC transaction.

The findings of the study show not only that CG can be an important risk management and value-enhancing instrument for investors, but also that companies themselves can see a more clearly articulated business case for good governance. More and more investors, equity and debt, incorporate better CG elements into their investment propositions and due diligence processes. Equally important, companies' owners, boards of directors, and senior managers should recognize and take advantage of improvements in CG that would help them make better business decisions as well as improve their performance—financial and nonfinancial—to the benefit of shareholders, stakeholders, and the economy in general.

This study should not be viewed as one-off and final. More can be done, perhaps with a focus on causality and price quantification of good CG. Certain enhancements of IFC's internal due diligence and portfolio supervision, as well as its internal systems capturing and analyzing the relevant data, could be beneficial. Specifically, IFC could seek to do the following:

- Standardize CG risk assessment at deal origination (for example, use corporate governance KPIs);
- Improve the internal systems to collect high-quality data and feedback from clients;
- Define better specific CG performance indicators and tailor them to specific sectors/types of entities;
- Enhance the business case narrative for CG, internally and for clients; and
- Explore ways to structure financial products by integrating CG aspects.

Finally, the results and findings of this study are in line with external academic research on the topic, indicating that CG tends to be particularly relevant for emerging markets and closely held unlisted companies. It thus contributes to the body of research on this topic.

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APPENDIX A

Descriptive Analysis of CG Data

This appendix contains descriptive analysis of the questionnaire-based CG data collected for this study. This exercise allowed for comparisons of the level of adherence of the sample firms to recommended CG practices across industries, regions, governance dimensions, and so on. This comparison is available for the date of disbursement and as of the end of 2016, and it reviews the evolution of the CG changes during the study period.

Figures A.1–A.8 show the CG scores of different subgroups of companies from the sample and at the two different time points.

Figure A.1: Overall Level of Following Recommended CG Practices at Disbursement

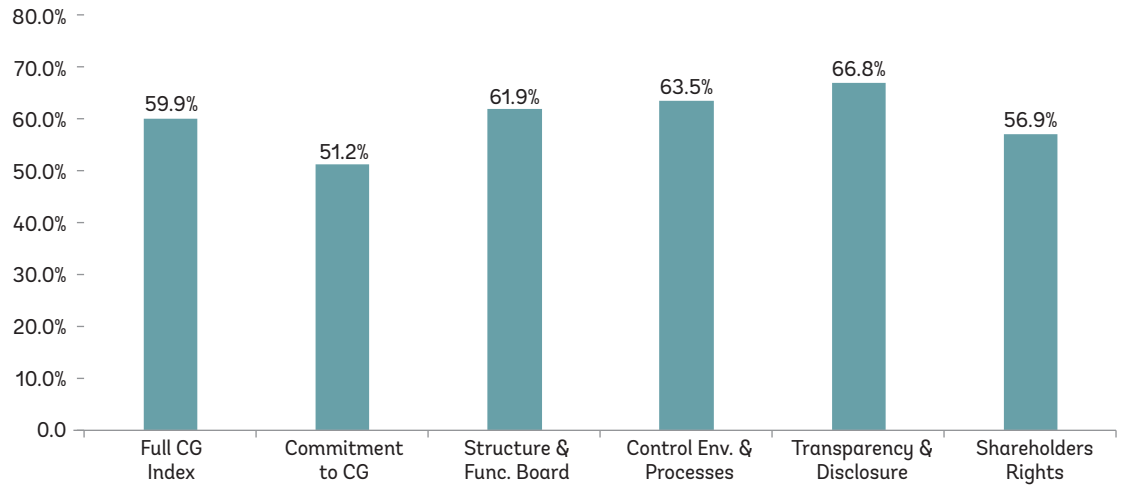


Figure A.2: CG Practices: FIG versus Non-FIG at Disbursement

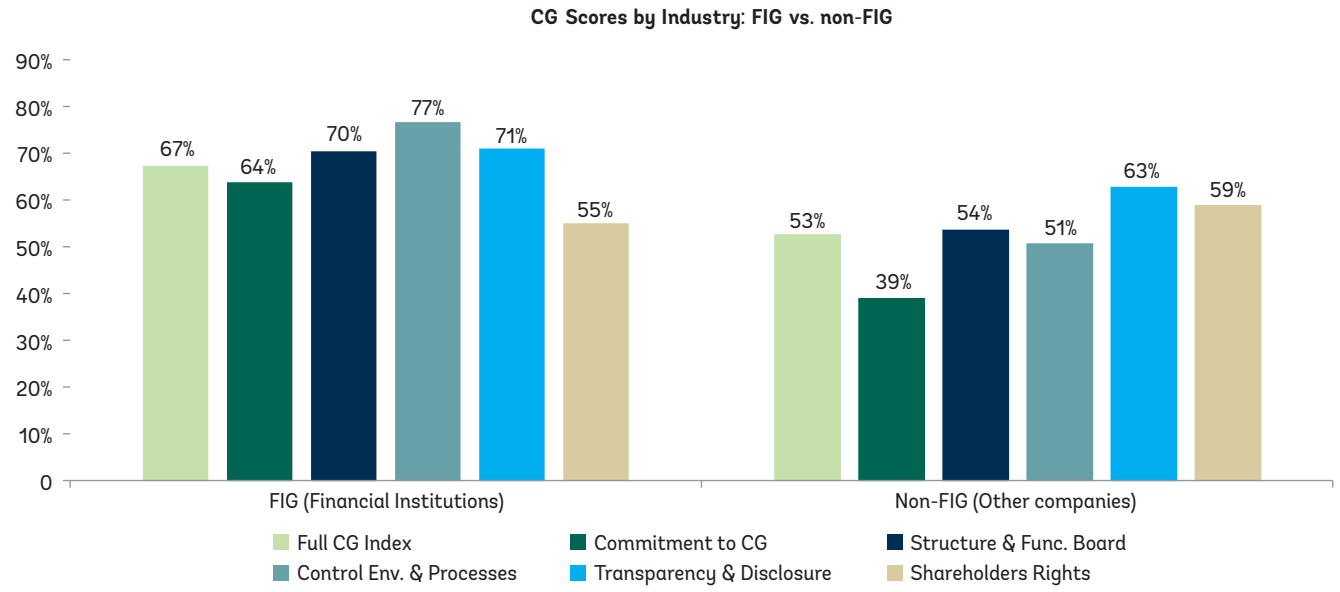


Figure A.3: CG Practices: by Investment Product at Disbursement

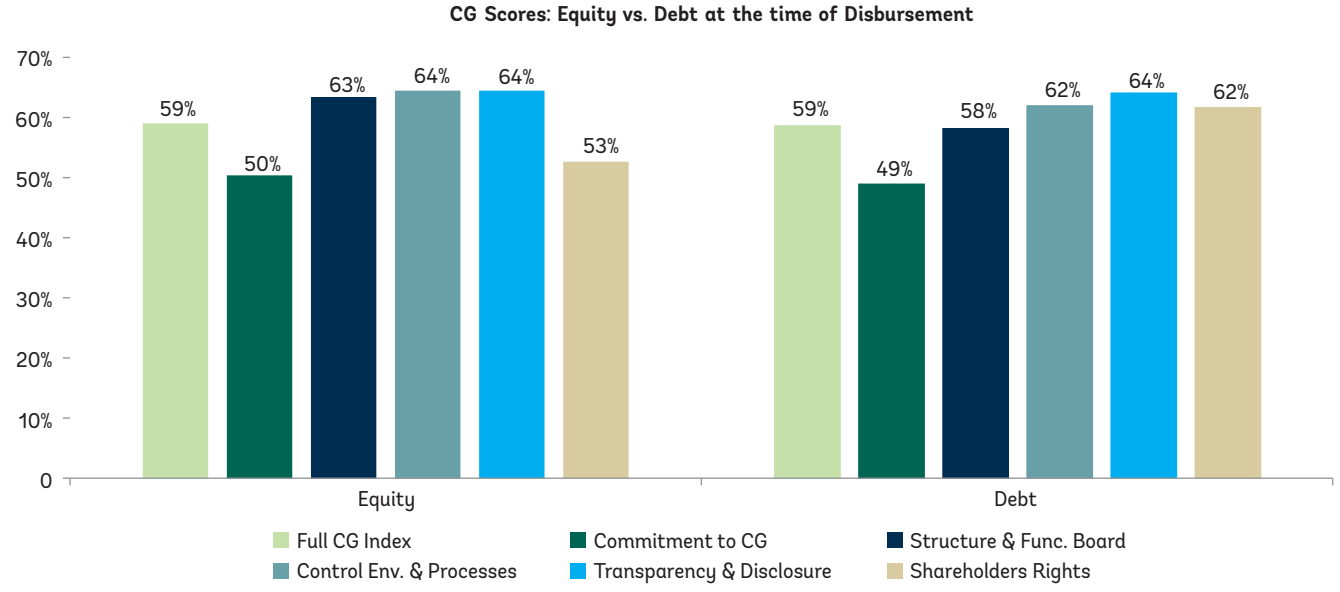


Figure A.4: CG Practices: Listed versus Unlisted at Disbursement

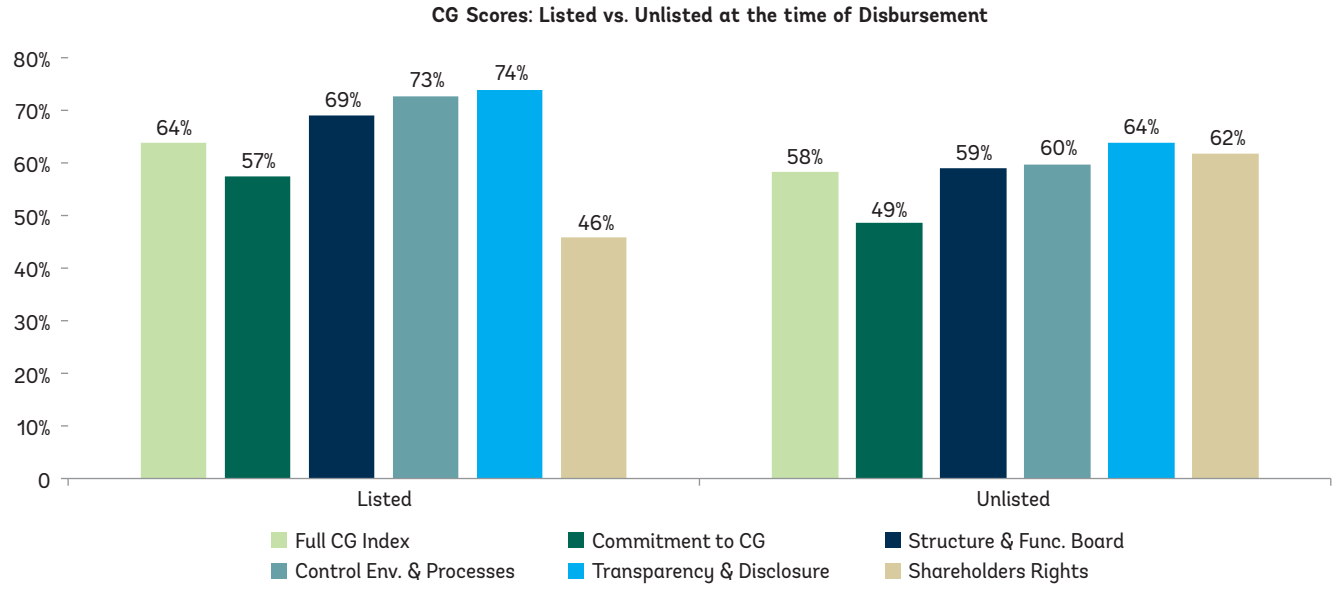


Figure A.5: CG Practice: by Investment Tier at Disbursement

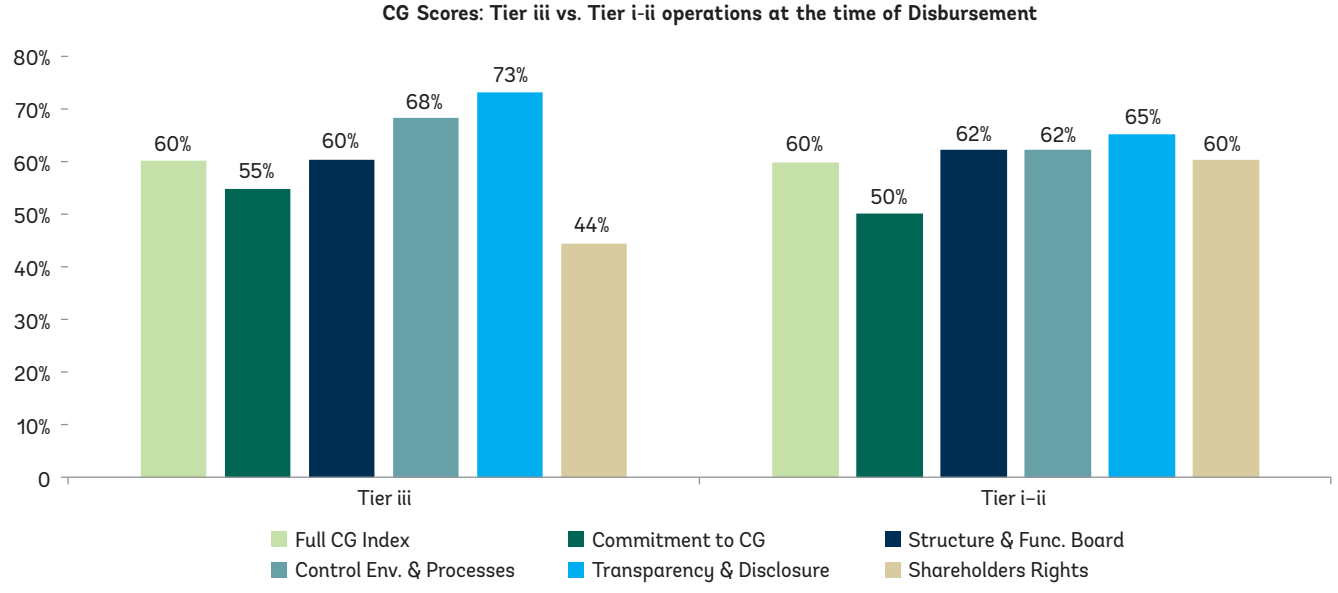


Figure A.6: Overall Level CG Practices (JUNE 2016)

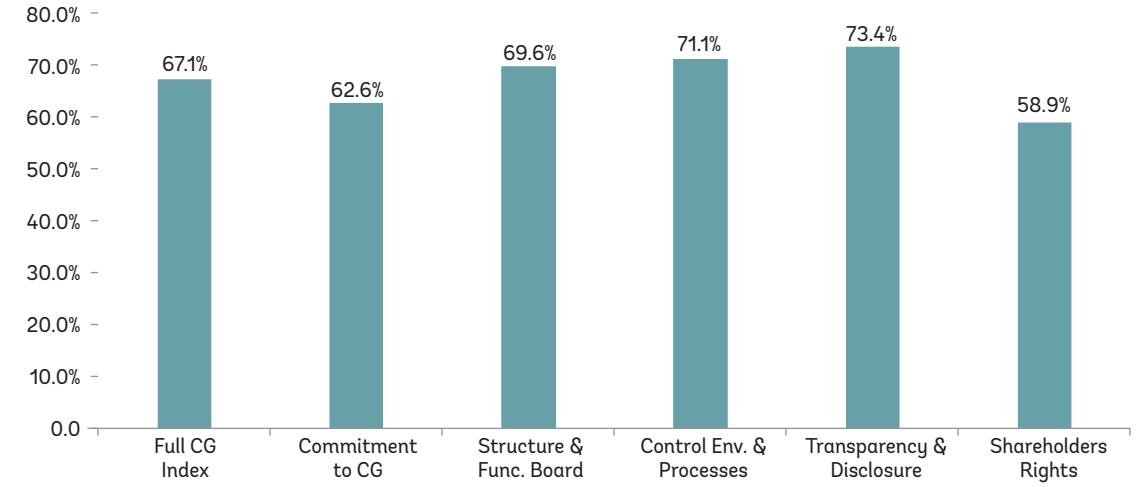


Figure A.7: CG Practices: by Industry (June 2016)

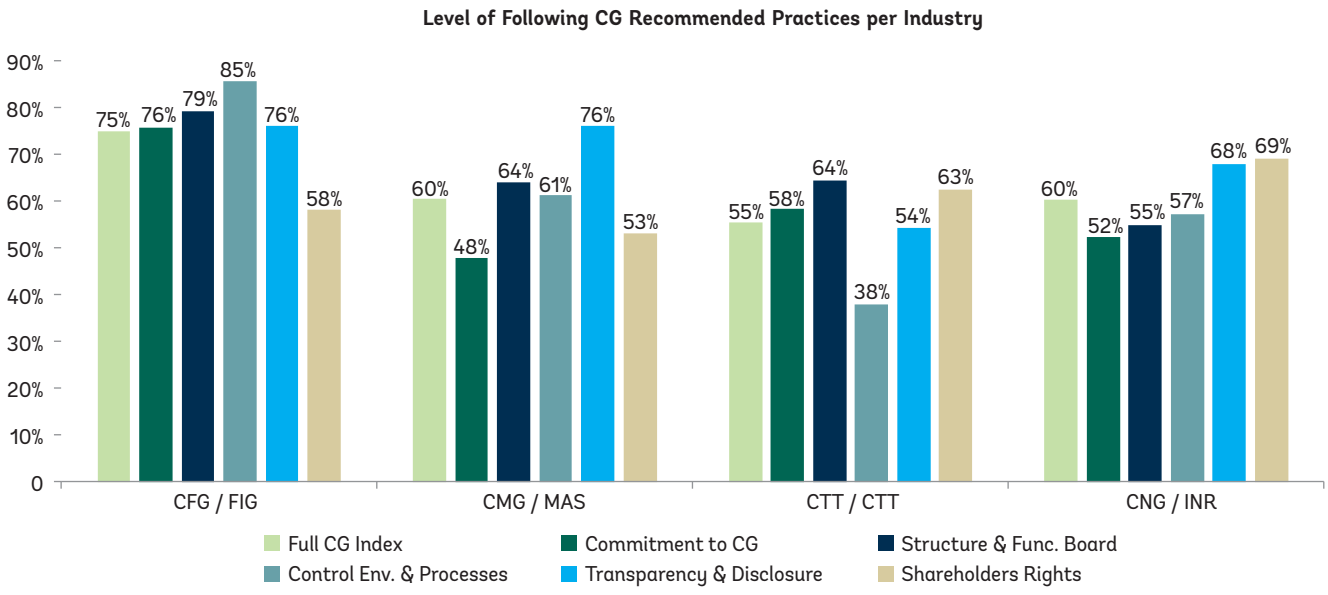


Figure A.8: CG Practices: FIG versus Non-FIG (end 2016)

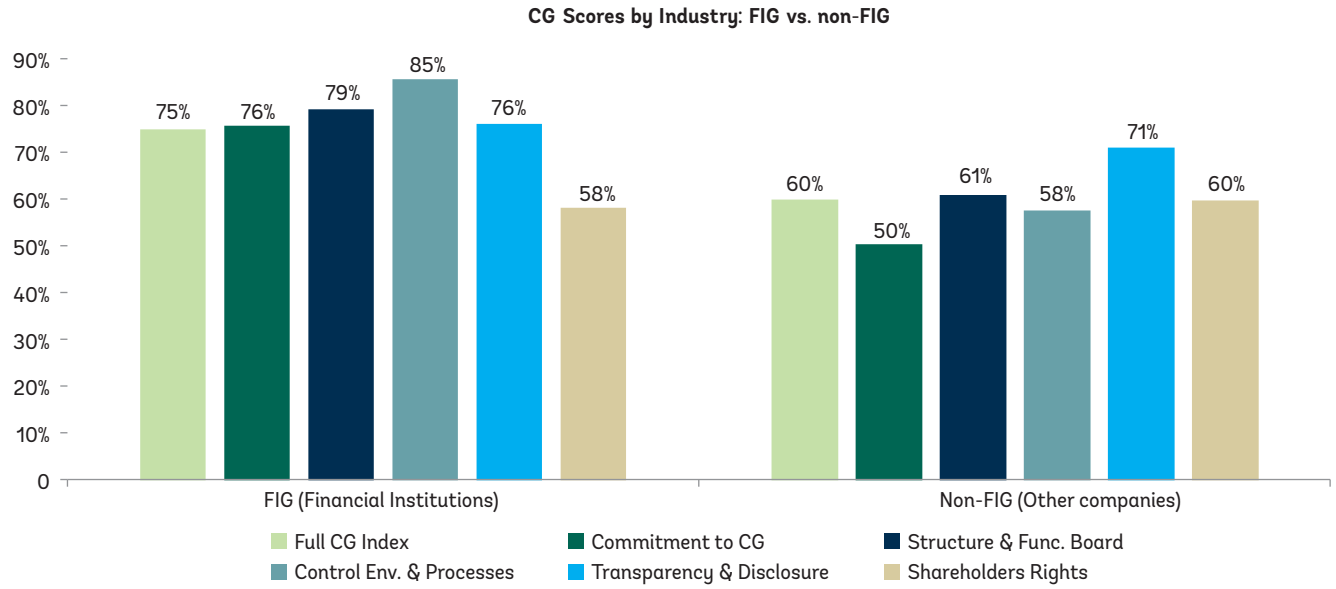


Figure A.9 compares the level of following recommended CG practices by all firms by region: Latin America and the Caribbean (LAC); Europe and Central Asia (ECA); East Asia and the Pacific (EAP); Sub-Saharan Africa (CAF); South Asia (SA); and Middle East and North Africa (MENA). Note that companies from South Asia exhibit the highest level of CG (76 percent), followed by the MENA firms (74 percent). On the other end, companies from Sub-Saharan Africa exhibit the lowest CG scores (62 percent).

Figure A.9: CG Practices: by Region (end 2016)

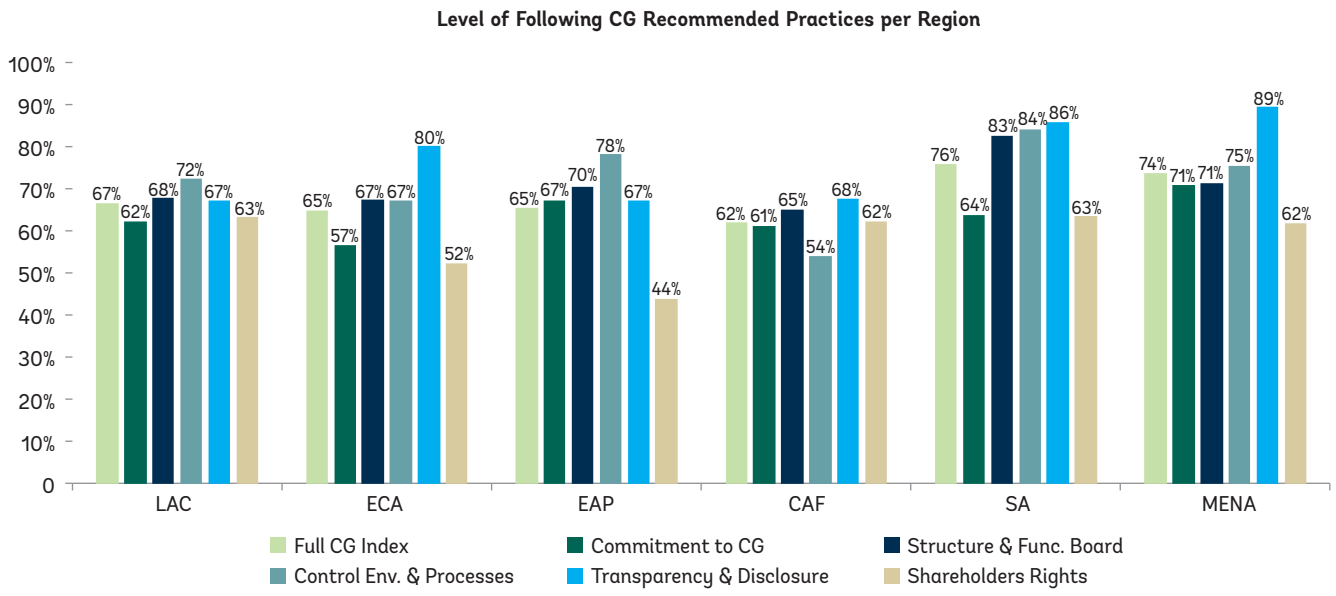


Figure A.10 lists the 10 questions of the CG questionnaire with the highest level of adherence at the end of 2016 (only questions applicable to all companies were considered). Note that all companies of the sample had their financial statements audited by a recognized independent auditing firm. In addition, 94 percent were also compliant with three other recommended practices: boards receiving periodic reports from management about the implementation of the strategic plan; formal approval by the board of directors of the strategic and business plans of the company; and boards carrying out a dedicated meeting or session to discuss strategy at least once a year.

Figure A.10: The 10 Most Common CG Practices (June 2016)

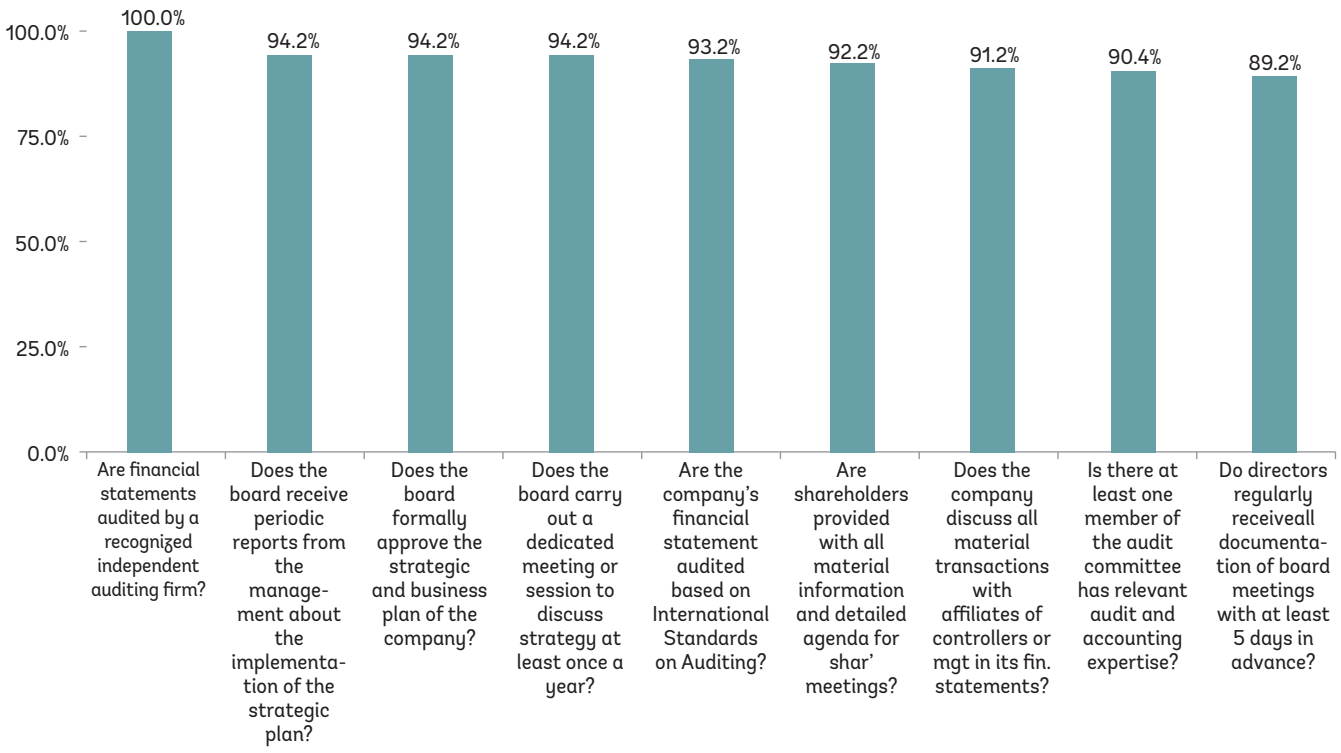
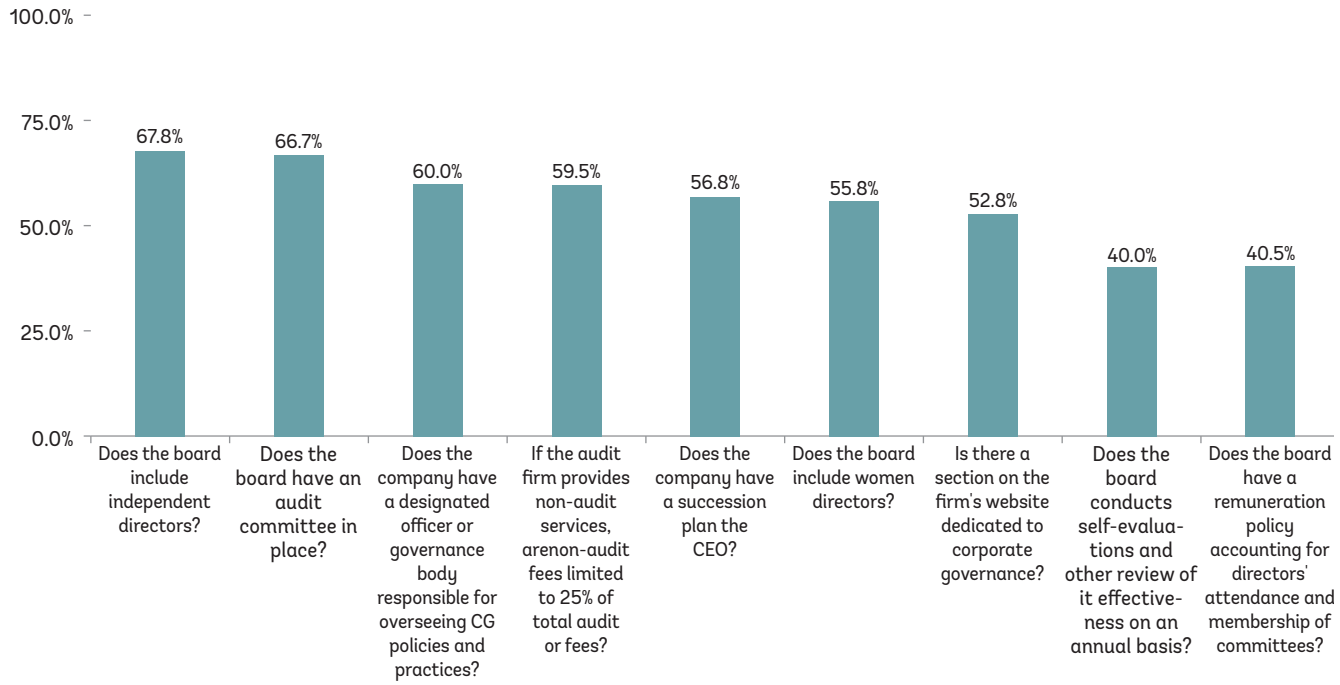


Figure A.11 lists the 10 least observed CG practices at the end of 2016 (only questions applicable to all companies were considered). The least observed CG practices in the sample were having board members trained on CG issues funded by the company (40 percent) and carrying out self-evaluations by the board on an annual basis (50 percent).

Figure A.11: The 10 Least Observed CG Practices (June 2016)



While the previous figures showed the level of following recommended CG practices at the end of 2016, Figures A.12–A.18 assess the improvement on the level of adherence between 2011 and 2016, by dimension.[27]

Figure A.12 shows the variation on the level of adherence to the CG Index of all firms from 2011 to 2016. The first column indicates that, on average, companies in the sample improved their level of adherence to the Full CG questionnaire by 7.1 percent over this period. The following columns show the level of improvement by dimension. Specifically, the data show that firms exhibited a stronger advancement (11.3 percent) in their conformity with the dimension "Commitment to CG" and almost no progress (1 percent) in the dimension "Shareholder Rights."

[27] This is measured by computing the level of adherence to the CG questionnaire in 2016 minus the level of adherence in 2011.

Figure A.12: Variation in CG Scores (2011 to 2016)

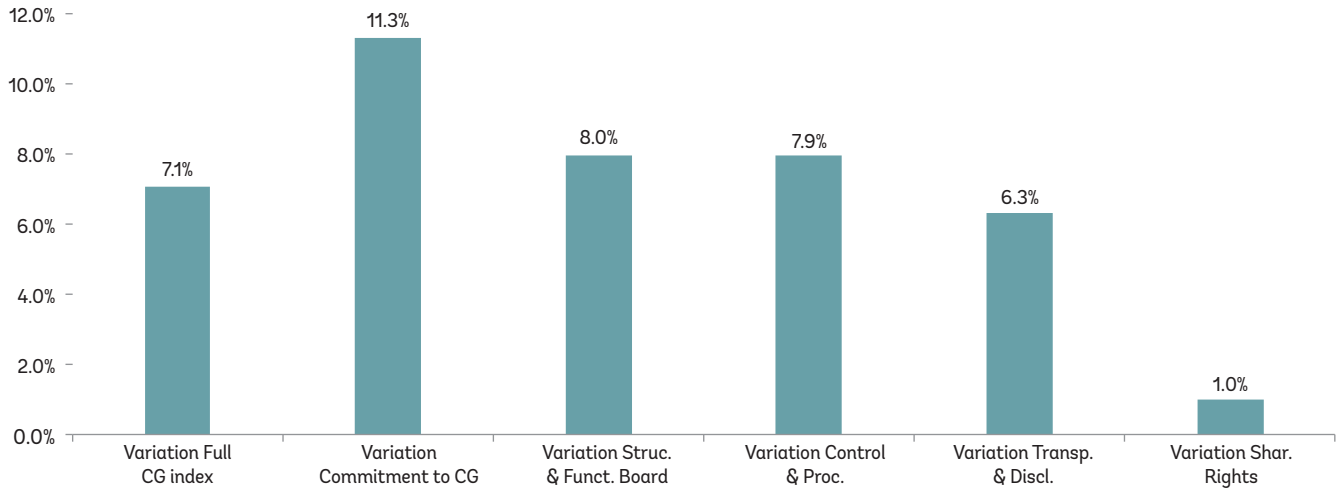


Figure A.13 shows the variation in the level of following recommended practices of all firms between 2011 and 2016, by industry. Note that MAS companies exhibited the largest overall improvement in CG (9.4 percent), while CTT firms exhibited the lowest level of improvement (3.3 percent) over this period. Figure A.14 shows variation in scores by industry, FIG versus non-FIG.

Figure A.13: Variation of CG Scores by Industry (2011 to 2016)

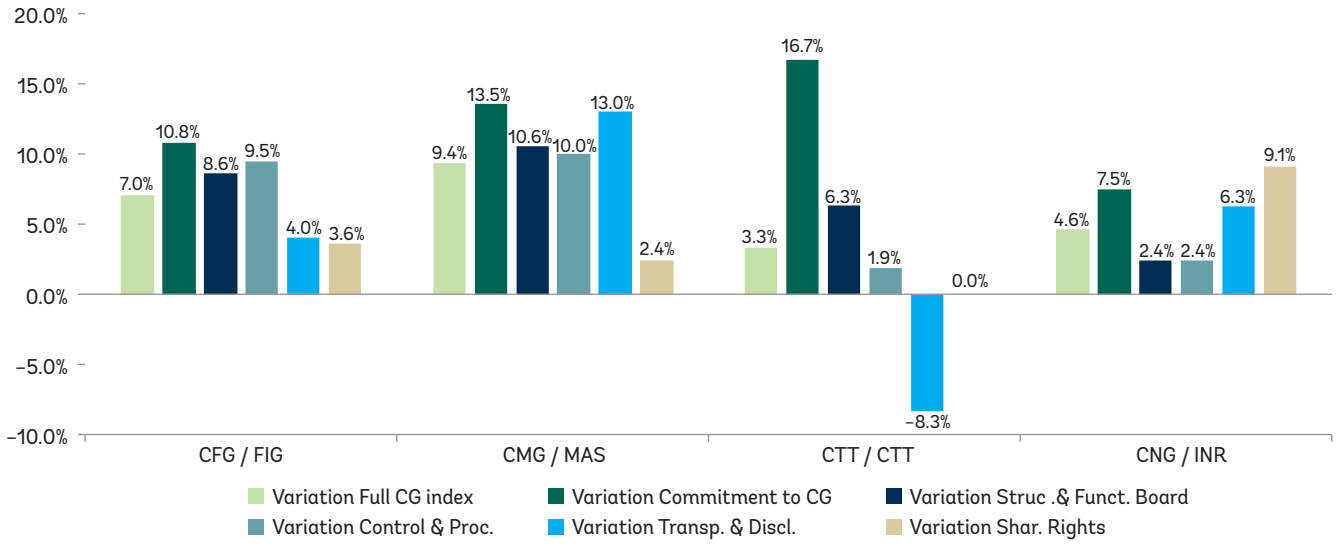
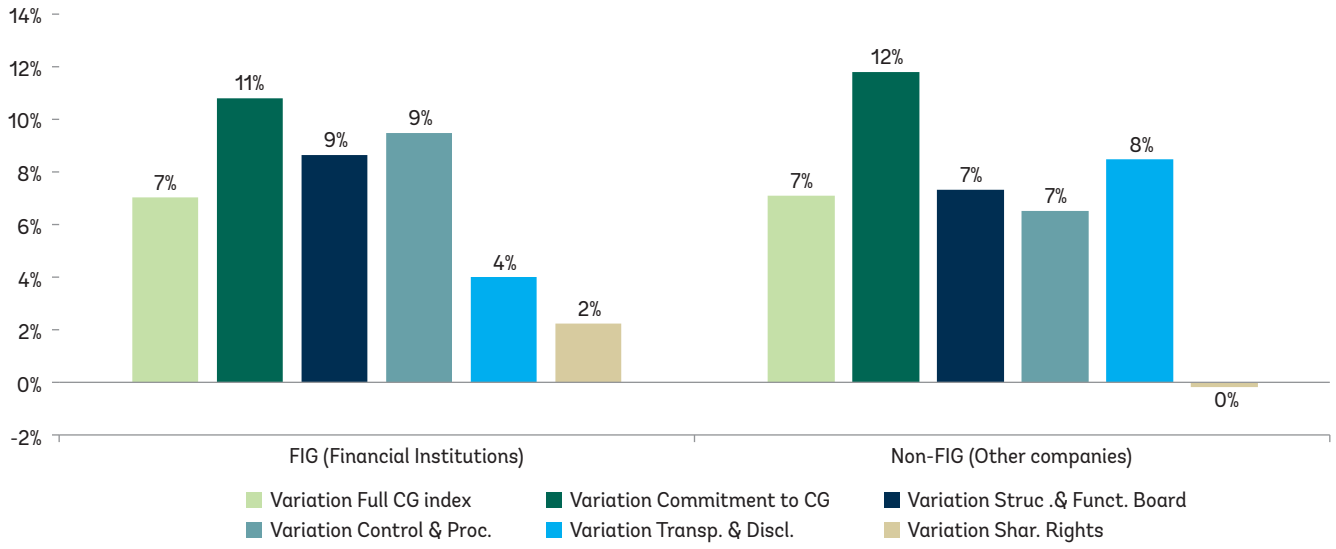


Figure A.14: Variation of CG Scores, FIG versus Non-FIG (2011 to 2016)



Figures A.15–A.18 show variations in following recommended CG practices—by region, investment product, listing status, and investment tier.

Figure A.15: Variation of CG Practices by Region (2011 to 2016)

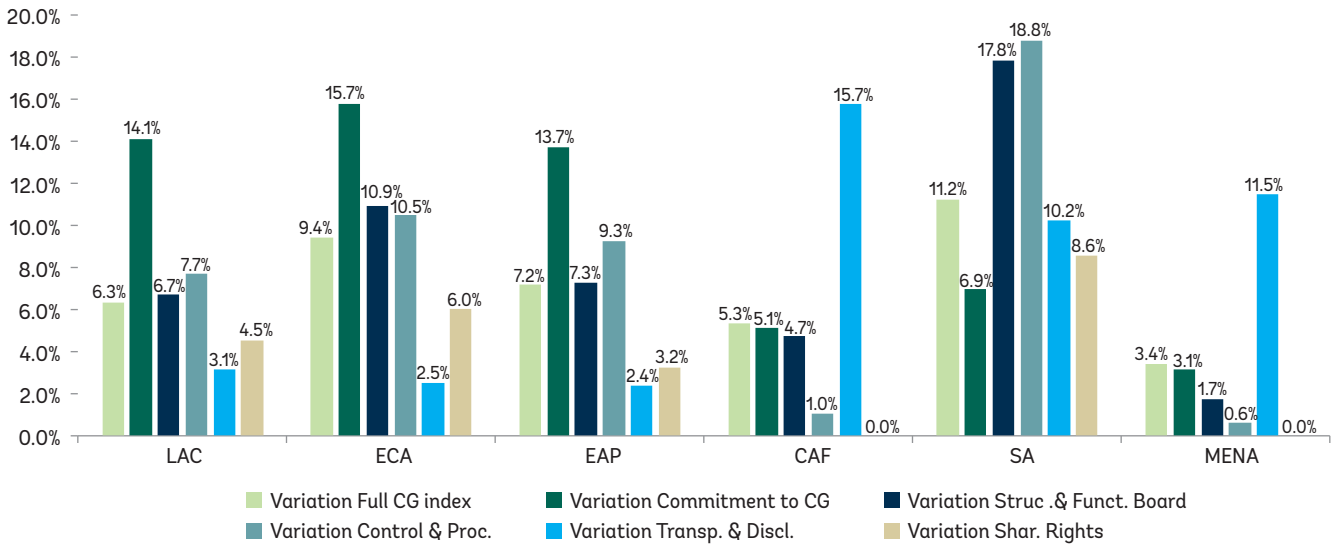


Figure A.16: CG Practices, by Investment Product (2011 to 2016)

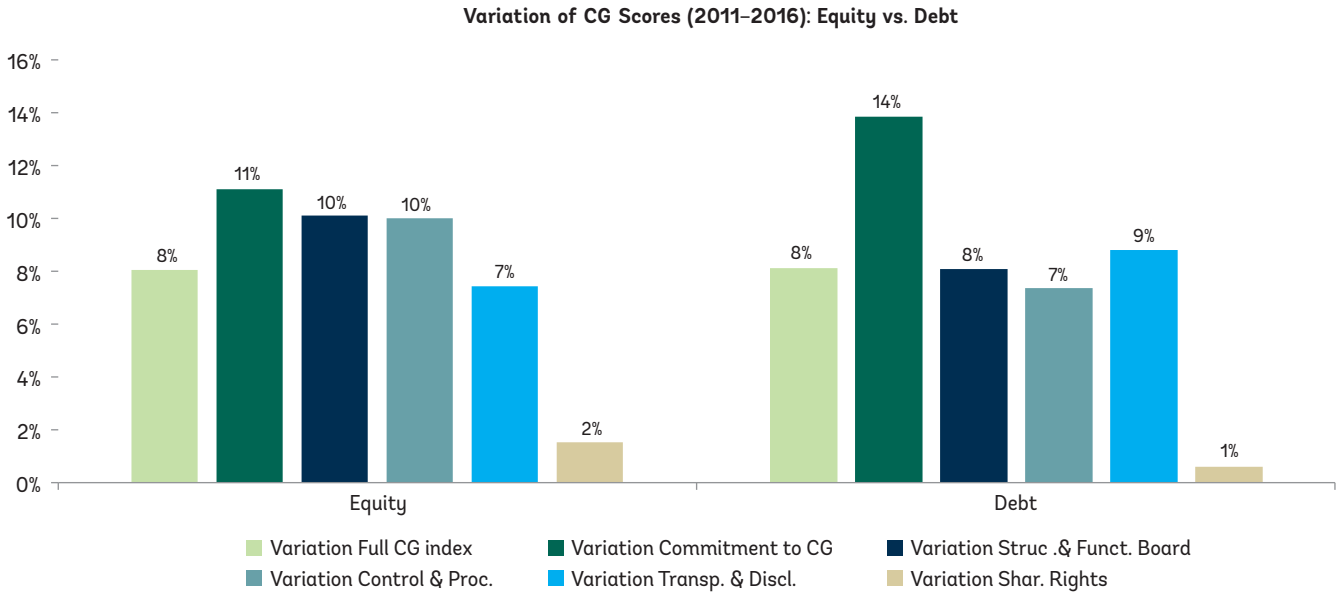


Figure A.17: Variation of CG Practices, Listed versus Unlisted companies (2011 to 2016)

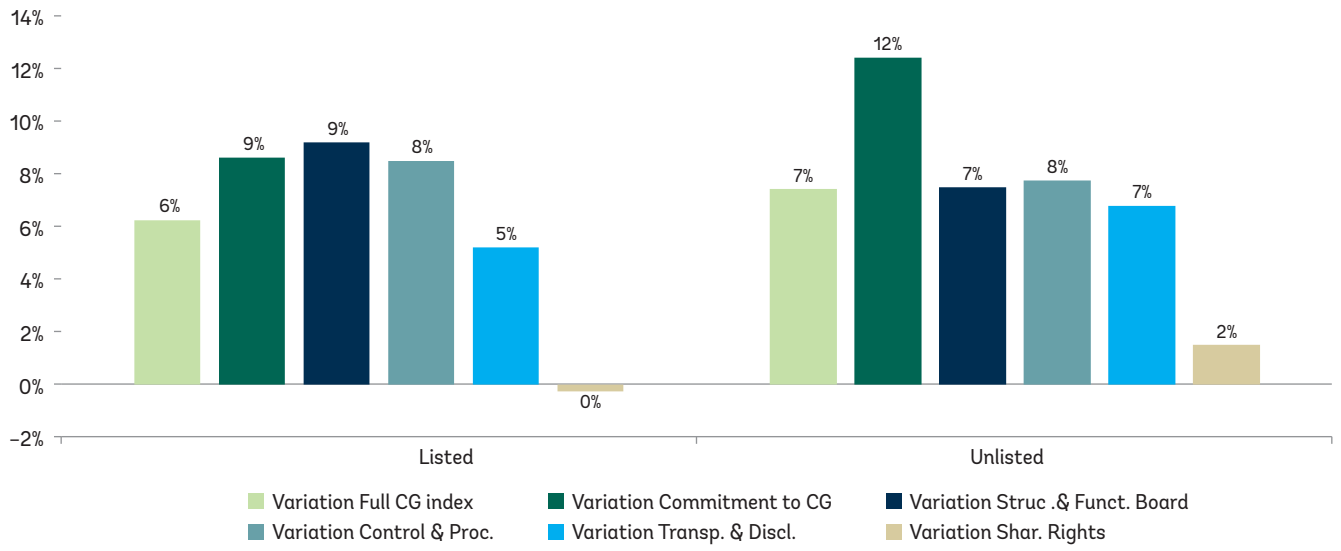
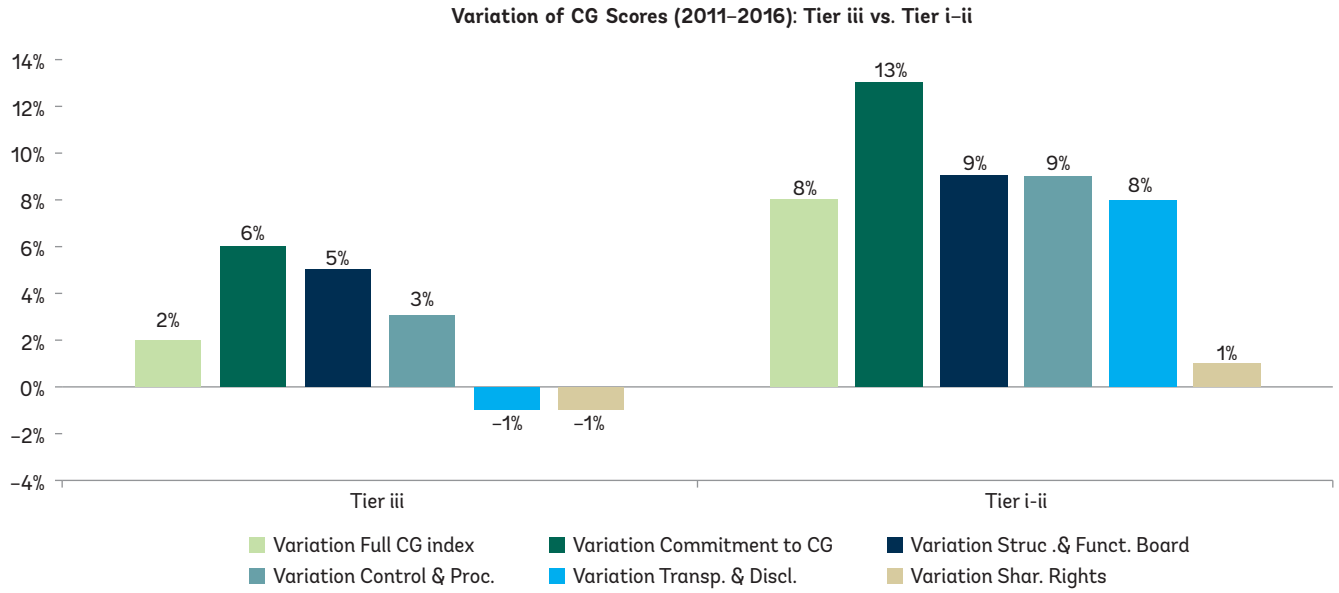


Figure A.18: Variation of CG Practices by Investment Tier (2011 to 2016)



APPENDIX B

Multiple Regressions

The last quantitative exercise involves multiple regressions. Because this procedure allows filtering out the effect of control variables on the relationship between CG and performance, it is usually the most robust procedure to assess how CG influences performance from a causal viewpoint. However, relevant limitations in the database—which consists of only about 60 firms—prevented this analysis from yielding conclusive results.

Regardless, this appendix reports the attempt to carry out multiple regressions to test the study's third hypothesis, which argues that the mean level of adherence to the CG Index throughout the investment period is positively associated with firm performance. To the extent that the team manages to build a larger and more robust CG database, it will be possible to implement more sophisticated procedures to test the CG-performance relationship from an econometric perspective in the future.

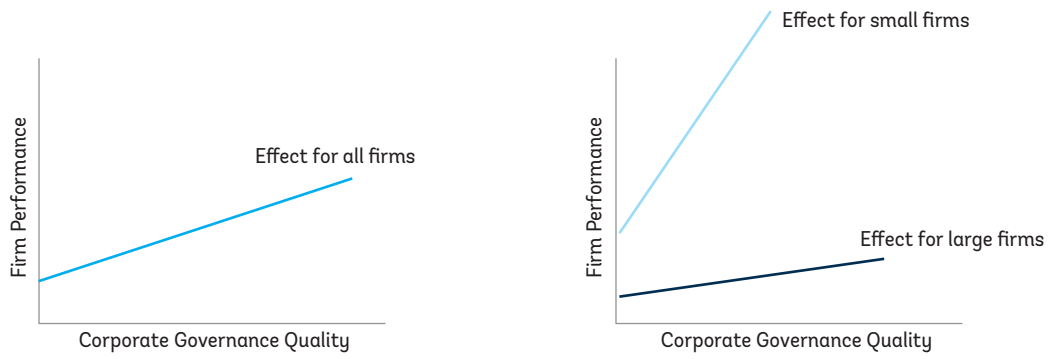
The first step in carrying out multiple regressions is to establish a conceptual model that defines CG as the key explanatory variable of interest and firm-level performance as the dependent variable.[28]

To minimize the risk of omitted variables biasing the results, the conceptual model also contains other potential explanatory factors—the so-called control variables—that may have an impact on both CG and firm performance. The following set of control variables are based on previous studies of the CG-performance literature:

- Financial leverage: total liabilities/total assets;
- Asset tangibility: fixed assets (property, plant, and equipment)/operational revenue;
- Ownership concentration: ownership by the largest shareholder (percentage of voting shares held by the controlling shareholder);
- Industry: IFC industry classification: Financial Institutions Group (FIG); Manufacturing, Agriculture and Services (MAS); Telecom, Media, Technology & Venture Investing (CTT); and Infrastructure and Natural Resources (INR);
- Listing on stock exchange: dummy variable assuming a value of one, if the company is listed on the stock exchange; zero otherwise.

[28] The dependent variable is the one affected by the others from the conceptual model. It is the variable of primary interest, because the goal is to explain its variability by finding what variables influence it. The independent variable is the presumed causal factor that influences the dependent variable in either a positive or a negative way. Independent variables should meet four conditions to allow for correct statistical inferences: 1) the independent and the dependent variable should covary (a change in one should be associated with a change in the other); 2) the independent variable should precede the dependent variable (there must be a time sequence in which the two occur); 3) no other factor should be a possible cause of the change in the dependent variable (the effects of all other variables should be controlled for); 4) a logical explanation or theory is needed for why the independent variable affects the dependent variable.

Figure B.1: Hypothetical Effect of Firm Size as a Moderating Variable



The influence of CG on performance may also vary significantly depending on additional elements. One example comes from firm size: it is possible that a higher level of adherence to recommended CG practices is more relevant for the performance of smaller companies than for the performance of large ones (or vice versa).

If this is the case, then firm size should be used as a moderating variable in the relationship between CG and performance.[29] Figure B.1 provides a visual representation of how the relationship between CG and firm performance could be influenced by firm size.

As a result, this conceptual model also takes into account the following set of potential moderating variables that may have a contingent effect on the relationship between CG and performance:

- Firm size: a dummy variable categorizing firms into two groups (large versus small) if the they are above the P67 or below the P33 of the sample in terms of its total assets;
- Size of IFC disbursement: a dummy variable categorizing firms into two groups based on the tier that the investment operation belongs to (Tier i and Tier ii versus Tier iii deals);
- Type of IFC investment: a dummy variable categorizing firms into two groups based on the type of IFC's investment (equity versus debt);
- Role of IFC on the board: a dummy variable categorizing firms into two groups based on IFC's appointment of a nominee director (*with* versus *without* the appointment of a nominee director);
- Type of IFC involvement—advisory: a dummy variable categorizing firms into two groups based on IFC's provision of advisory services (*with* versus *without* the provision of advisory services).

[29] 29 A moderating variable is one that has a strong contingent effect on the relationship between the independent variable and the dependent variable. As a result, its presence modifies the original relationship between the independent and the dependent variables. Moderating variables are also known as "it depends" variables. For instance, someone who is asked if CG adds value might respond, "It depends. For smaller firms, it creates a lot of value. For big firms, not that much."

Figure B.2: Conceptual Model

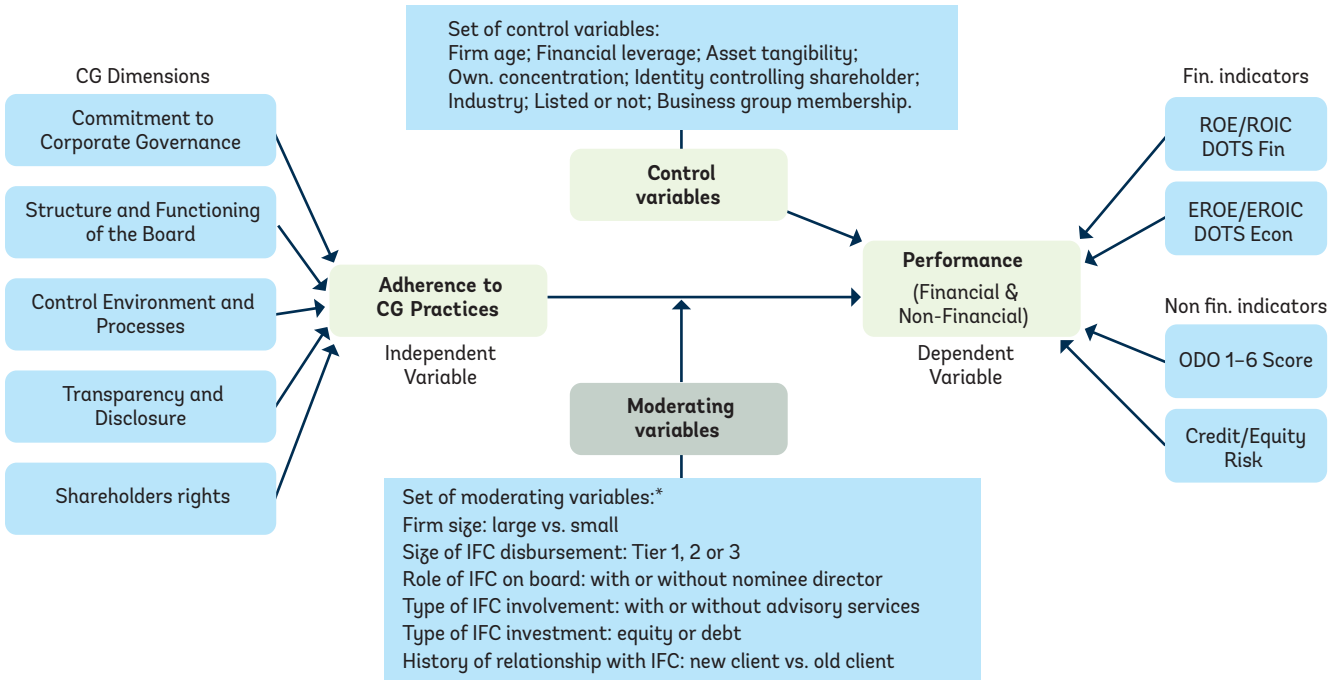


Figure B.2 illustrates the full conceptual model, including the key variables of interest, control variables, and moderating variables.

As stated before, the small number of observations required the study to restrict multiple regression analysis to the third hypothesis, which argues that "the mean level of adherence of IFC clients to recommended CG practices is associated with better firm performance." The team tested this hypothesis in the following way:

- For each firm, the study measured the mean level of adherence to recommended CG practices by computing the average of CG scores at both *t=0* and *t=n*: $CG_{it} = (CG_{i,t=n} + CG_{i,t=0})/2$.
- For each firm, the study computed an aggregate or average measure of performance from *t=0* to *t=n*, such as, for instance, the average return on equity (ROE) or the overall level of development outcome (ODO) assigned to the project ($PERF_i$).
- For each firm, the study computed control and moderating variables for t=0, t=1,…, t=n (CV_{it} and MV_{it}).
- The team then carried out multiple regressions on a cross-section database using the following general research model:

$$PERF_{it} = \alpha + \beta_1 \times \overline{CG_{it}} * MV_{it} + \beta_3 \times MV_{it} + \sum_{j=1}^{n} \beta_j \times CV_{jit} + n_j + u_{it}$$

Where:

$PERFit$ = performance of the i^{th} firm at time t;

CG_{it} = average level of adherence to CG practices of the i^{th} firm at time t;

MV_i = set of moderating variables of the i^{th} firm at time t to be tested alternatively;

CV_{ji} = set of control variables of the i^{th} firm at time t;

n_i = firm-specific and time-invariant effect of the i^{th} firm (nonobservable fixed effect); and

u_{it} = random error term of the i^{th} firm at time t.

Table B.1 presents the results of this attempt to carry out multiple regressions. It exhibits the outcomes of different regression models relating the level of adherence to the full version of the CG Index (ADHERENCE_FULL_CG) to four performance variables: ODO 1–6 (models 1 and 2), the overall development outcome rating of the project on a 1–6-point scale ranging from highly unsuccessful to highly successful; ROE/ROIC (models 3 and 4), the annual return on equity or return on invested capital of the project; EROE/EROIC (models 5 and 6), the annual economic return on equity or economic return on invested capital of the project; and CREDIT RISK 1–11 (models 7 and 8), the credit risk rating of the project on a scale from 1 to 11.

For each performance variable, the team ran regressions with both a basic model and a full model. The basic model controls the relationship between CG and performance only for firm size, firm age, and financial leverage; the full model controls for a full set of variables, including characteristics of the operation and industry dummies.

Table B.1 shows mixed findings in the relationship between the level of adherence to IFC's Full CG Index and performance variables. On the one hand, a higher level of adherence is associated with a lower credit risk rating (CREDIT RISK 1–11), which is a key measure of the financial risk of the project. On the other hand, a higher CG score is also negatively related to both return on equity (ROE) and economic return on equity (EROE), thus contradicting the study hypothesis. Also observable is a non-statistically significant relationship between the adherence to the Full CG Index and the overall development outcome rating of the project (ODO 1–6 SCORE).

In addition, some statistically significant relationships between other explanatory variables and firm performance are worth noting. Equity deals are positively related to the EROE of the project. On the other hand, they are negatively related to ODO scores as well as associated with a higher credit risk rating. The provision of advisory services is positively related to ODO scores and not significantly related to other performance indicators. But the appointment of a nominee director generates unexpected results: it is negatively related to both ROE and EROE, and it is associated with a higher credit risk. Tier iii operations are associated with lower ROE and EROE. Listing on the stock exchange is positively related to financial indicators as well as associated with a lower credit risk. Firm age and financial leverage are positively related to ODO, ROE, and EROE, while the concentration of voting shares by the controlling shareholder has a detrimental effect on all performance variables.

Table B.1: Full CG Index and Performance Variables

	ODO 1–6 Score		ROE/ROIC		EROE/EROIC		Credit risk 1–11	
Dependent Variables	Basic Model	Full Model	Basic Model	Full Model	Basic Model	Full Model	Basic Model	Full Model
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Adherence_full_cg	0.377	0.117	−1.757	**−6.139****	−4.273	**−9.501*****	**−2.503*****	**−1.677*****
	(1.57)	*(0.49)*	*(−0.59)*	***(−2.21)***	*(−0.99)*	***(−2.71)***	***(−4.44)***	***(−2.64)***
Equity operation	–	**−0.355****	–	0.328	–	**2.665****	–	**1.136*****
		(−3.11)		*(0.39)*		***(2.22)***		***(4.79)***
Advisory services	–	**0.900*****	–	0.208	–	1.965	–	−0.201
		(5.14)		*(0.12)*		*(0.72)*		*(−0.48)*
Nominee director	–	−1.757	–	**−2.847****	–	**−2.915***	–	**0.809*****
		(−0.59)		***(−2.57)***		***(−1.72)***		***(2.76)***
Tier iii operation	–	−1.757	–	**−4.481*****	–	**−9.881*****	–	0.215
		(−0.92)		***(−4.03)***		***(−6.68)***		*(0.71)*
Listed company	–	0.168	–	**2.135***	–	**3.725****	–	**−0.450***
		(1.60)		***(1.78)***		***(2.22)***		***(−1.83)***
Firm size	0.024	−0.024	0.279	0.240	0.299	−0.271	**−0.270*****	**−0.309*****
	(0.93)	*(−0.86)*	*(0.86)*	*(0.62)*	*(0.60)*	*(−0.50)*	***(4.73)***	***(−4.48)***
Firm age	**0.097**	**0.429*****	**3.754*****	**5.937*****	**4.419*****	**8.916*****	0.087	0.111
	(1.50)	***(4.86)***	***(6.59)***	***(6.20)***	***(6.14)***	***(6.87)***	*(0.65)*	*(0.73)*
Financial_leverage	**0.578*****	**0.449*****	**7.935*****	**6.382*****	**9.429*****	**6.620*****	0.150	0.591
	(4.34)	***(2.87)***	***(5.27)***	***(3.53)***	***(4.67)***	**(3.06)**	*(0.41)*	*(1.29)*
Conc_shares	–	**−0.013*****	–	**−0.075*****	–	**−0.108*****	–	**0.009****
		(−6.28)		***(−3.53)***		***(−4.06)***		***(2.10)***
Industry dummies	No	Yes	No	Yes	No	Yes	No	Yes
Constant	**3.022*****	**3.979*****	**−7.382*****	−4.520	−5.339	−6.408	**9.914*****	**8.735*****
	(10.44)	**(8.84)**	**(−3.36)**	*(−0.94)*	*(−1.19)*	*(−1.27)*	**(15.16)**	**(9.62)**
Number of observations	264	213	259	208	248	197	259	208
F statistic	8.70	22.60	24.47	31.76	20.29	32.00	15.26	16.25
R-squared	0.078	0.456	0.273	0.549	0.223	0.563	0.196	0.444

Note: This table exhibits the outcomes of different regression models aiming at analyzing the relationship between the level of adherence to IFC's CG Index and firm-level performance. The dependent variables are ODO 1–6 (models 1 and 2), the overall development outcome rating of the project on a 1–6-point scale, ranging from highly unsuccessful to highly successful; ROE/ROIC (models 3 and 4), the annual return on equity or return on invested capital of the project; EROE/EROIC (models 5 and 6), the annual economic return on equity or economic return on invested capital of the project; and, CREDIT RISK 1–11 (models 7 and 8), the credit risk rating of the project on a scale from 1 to 11. The independent variable of interest is ADHERENCE_FULL_CG, the level of adherence to the full version of the CG Index (see Appendix C for the full list of questions of the index). Control variables are EQUITY OPERATION, dummy variable if it the operation refers to an equity deal; ADVISORY SERVICES, dummy if IFC provided advisory services to the client; NOMINEE DIRECTOR, dummy indicating if IFC appointed a nominee director to the board of the client; TIER iii OPERATION, dummy if the disbursement has been classified as a Tier iii investment by IFC; LISTED COMPANY, dummy if the client is a listed company; FIRM SIZE, natural logarithm of firm's total assets; FIRM AGE, natural logarithm of years since company founding; FINANCIAL_LEVERAGE, total liabilities over total assets; CONC_SHARES, percentage of voting shares held by the controlling shareholder. Appendix E presents detailed operational definitions of all variables. Models are estimated through cross-sectional multiple linear regressions estimated with robust White-corrected standard errors. Regressions 2, 4, 6, and 8 are controlled for four industry dummy variables as per IFC's industry classification. Data refer to the period from 2011 to 2016. Robust t-statistics are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table B.2: Core CG Index and Performance Variables

	ODO 1–6 Score		ROE/ROIC		EROE/EROIC		Credit risk 1–11	
Dependent Variables	Basic Model	Full Model	Basic Model	Full Model	Basic Model	Full Model	Basic Model	Full Model
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Core_cg_index	**0.717*****	0.494	5.924**	−4.000	9.099***	−5.134	−1.396**	−0.834
	(2.66)	*(1.41)*	***(2.28)***	*(−1.20)*	***(2.60)***	*(−1.44)*	***(−2.41)***	*(−0.94)*
Equity operation	–	**−0.385****	–	0.810	–	**3.205*****	–	**1.267*****
		(−3.40)		*(0.92)*		***(2.64)***		***(5.65)***
Advisory services	–	**0.912*****	–	0.067	–	1.976	–	−0.207
		(5.21)		*(0.04)*		*(0.69)*		*(−0.50)*
Nominee director	–	−0.167	–	**−2.950****	–	**−3.183***	–	**0.803*****
		(−0.88)		***(−2.46)***		***(−1.73)***		***(2.64)***
Tier iii operation	–	**−0.508*****	–	**−4.064*****	–	**−9.470*****	–	0.313
		(−4.23)		***(−3.47)***		***(−6.04)***		*(1.00)*
Listed company	–	0.118	–	**2.417***	–	**4.248****	–	−0.397
		(1.05)		***(1.91)***		***(2.37)***		*(−1.54)*
Firm size	0.010	−0.035	0.092	0.294	−0.033	−0.241	**−0.272*****	**−0.308*****
	(0.33)	*(−1.21)*	*(0.28)*	*(0.78)*	*(−0.07)*	*(−0.47)*	***(4.45)***	***(−4.10)***
Firm age	0.070	**0.436*****	**3.558*****	**6.096*****	**4.179*****	**9.331*****	0.148	0.163
	(1.05)	***(4.91)***	***(6.08)***	***(6.49)***	***(5.74)***	***(7.32)***	*(1.11)*	*(1.02)*
Financial_leverage	**0.477*****	**0.387****	**6.718*****	**7.181*****	**7.405*****	**7.458*****	0.207	**0.793***
	(3.47)	***(2.40)***	***(4.49)***	***(3.79)***	***(3.77)***	***(3.25)***	*(0.54)*	***(1.69)***
Conc_shares	–	**−0.012*****	–	**−0.069*****	–	**−0.098*****	–	**0.011*****
		(−5.88)		***(−3.17)***		***(−3.56)***		***(2.62)***
Industry dummies	No	Yes	No	Yes	No	Yes	No	Yes
Constant	**3.169*****	**3.964*****	**−8.510****	**−8.645***	**−7.613***	**−11.295****	**8.931*****	**7.853*****
	(10.96)	***(9.64)***	***(−2.59)***	***(−1.95)***	***(−1.66)***	***(−2.26)***	***(14.23)***	***(9.79)***
Number of observations	264	213	259	208	248	197	259	208
F statistic	10.38	22.40	24.72	28.61	20.76	29.35	10.73	15.34
R-squared	0.095	0.599	0.286	0.540	0.240	0.550	0.149	0.421

Note: This table exhibits the outcomes of different regression models aiming at analyzing the relationship between the level of adherence to IFC's CG Index and firm-level performance. The dependent variables are ODO 1–6 (models 1 and 2), the overall development outcome rating of the project on a 1–6-point scale ranging from highly unsuccessful to highly successful; ROE/ROIC (models 3 and 4), the annual return on equity or return on invested capital of the project; EROE/EROIC (models 5 and 6), the annual economic return on equity or economic return on invested capital of the project; and, CREDIT RISK 1–11 (models 7 and 8), the credit risk rating of the project on a scale from 1 to 11. The independent variable of interest is CORE_CG_INDEX, the level of adherence to the reduced version (Core CG Index) of the CG Index (see Appendix C for the full list of questions of the index). Control variables are: EQUITY OPERATION, dummy variable if it the operation refers to an equity deal; ADVISORY SERVICES, dummy if IFC provided advisory services to the client; NOMINEE DIRECTOR, dummy indicating if IFC appointed a nominee director to the board of the client; TIER iii OPERATION, dummy if the disbursement has been classified as a Tier iii investment by the IFC; LISTED COMPANY, dummy if the client is a listed company; FIRM SIZE, natural logarithm of firm's total assets; FIRM AGE, natural logarithm of years since company founding; FINANCIAL_LEVERAGE, total liabilities over total assets; CONC_SHARES, percentage of voting shares held by the controlling shareholder. Appendix E presents detailed operational definitions of all variables. Models are estimated through cross-sectional multiple linear regressions estimated with robust White-corrected standard errors. Regressions 2, 4, 6, and 8 are controlled for four industry dummy variables as per IFC's industry classification. Data refer to the period from 2011 to 2016. Robust t-statistics are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

The team ran the same regressions (shown in Table B.2), this time using the level of adherence to the reduced version (Core CG Index) of the CG Index (composed of 26 questions) as the main explanatory variable of interest.

Table B.2 also provides inconclusive results in the relationship between CG and performance. Although the basic specifications of the regressions (models 1, 3, 5, and 7) show a beneficial influence of the level of adherence to the Core CG Index on all performance variables, the statistical significance of the coefficients disappears in the full models employing the complete set of controlling variables. Also observable is that the main results related to other explanatory variables remain the same as of those obtained in Table B.1.

The multiple regressions also make it possible to see the contingent effect of potential moderators on the CG-performance relationship. Specifically, it allows analysis of whether the relationship between CG and performance varies depending on 1) the type of financing (equity versus loan); 2) the magnitude of the investment (Tier iii versus Tier i or Tier ii); 3) the status of the company as listed or not; 4) the presence of a nominee director; and 5) the provision of advisory services. To save space, Table B.3 presents the set of regressions using the presence of an equity deal as a moderating variable. (The results for the other moderating variables will be described in the next paragraphs, and their full set of regressions can be provided on request.)

Table B.3 presents the results of the moderating variable EQUITY OPERATION, which assumes a value of one if the project involves equity financing and zero otherwise. Models 1, 3, 5, and 7 use the adherence to the Full CG Index (ADHERENCE_FULL_CG) as the explanatory variable of interest, while models 2, 4, 6, and 8 use adherence to the Core CG Index (CORE_CG_INDEX).

The process begins with the analysis of adherence to the Full CG Index (ADHERENCE_FULL_CG). Its relationship with firm performance is significantly affected only when an equity deal takes place in model 1 (using ODO 1–6 score as performance variable). This can be seen by the interaction term that multiplies the two explanatory variables of interest in the second row of the table (ADHERENCE_FULL_CG * EQUITY OPERATION). Specifically, the negative coefficient of this interaction shows that an equity deal reduces the direct impact of CG on performance (which, in this case, is not significant). Still in model 1, a significant negative relationship can be seen between the presence of an equity operation and the overall development outcome rating of the project (ODO 1–6 SCORE). Thus an equity deal has an aggregated negative impact on the ODO score of the project, which can be calculated by summing its direct coefficient on the fifth row (–1.106) and its indirect coefficient on the second row (–1.128 multiplied by the 0–100% level of adherence to the Full CG Index). Since all other interaction terms of models 3, 5, 7 are not statistically significant, there is very weak evidence that the relationship between CG and performance is significantly altered by the presence of equity deals.

Next comes analysis to find the relationship between adherence to the Core CG Index (CORE_CG_INDEX) and performance. This relationship is significantly affected by the presence of an equity deal in models 2 and 6 (using ODO 1–6 score and EROE as performance variables, respectively). In both cases, the coefficients of the interaction terms are positive, indicating that the impact of CG on both ODO and EROE is stronger when an equity deal takes place.[30] Nevertheless, because the interaction terms of models 4 and 8 are not statistically significant, it cannot be concluded that the relationship between CG and performance is significantly altered for equity deals when using the reduced version of the Index as a CG indicator.

[30] Take the results of model 6 (using EROE), for example. For a firm with a level of adherence of 80% to IFC's Core CG Index, the impact of CG on EROE for equity deals would be computed by summing its direct impact (–12.823 * 80% = –10.2584) and its indirect impact (15.442 * 80% * 1 = 12.354), ending in a net positive impact of approximately 2.10% on EROE.

Table B.3: CG Index and Performance Variables: Equity Holdings

Dependent Variables	ODO 1–6 Score		ROE/ROIC		EROE/EROIC		Credit risk 1–11	
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
adherence_full_CG	−0.569	–	**−2.685*****	–	−3.811	–	**−2.082***	–
	(−1.08)		***(5.18)***		*(−0.72)*		***(−1.86)***	
adherence_full_CG * equity operation	**−1.128*** **(−1.87)**	–	−5.952 *(−0.90)*	–	−9.573 *(−1.21)*	–	0.659 *(0.48)*	–
Core_CG_index	–	−0.640	–	**−9.561***	–	**−12.823****	–	**−1.800***
		(−1.25)		**(−1.93)**		**(−2.39)**		**(−1.73)**
Core__CG_index * equity operation	–	**2.030*****	–	11.034	–	**15.442****	–	1.713
		(3.24)		*(1.65)*		**(2.07)**		*(1.34)*
Equity operation	**−1.106***** **(−2.68)**	**−1.554***** **(−4.21)**	4.312 *(0.99)*	−5.651 *(−1.44)*	**8.969*** **(1.76)**	−5.671 *(−1.31)*	0.694 *(0.73)*	0.276 *(−3.40)*
Advisory services	**0.929***** **(5.10)**	**1.039***** **(6.01)**	0.123 *(0.07)*	0.622 *(0.32)*	1.905 *(0.72)*	2.667 *(0.90)*	−0.185 *(−0.44)*	−0.099 *(−0.23)*
Nominee director	−0.148 *(−0.80)*	−0.083 *(−0.49)*	**−2.988***** **(−2.75)**	**−2.493**** **(−2.04)**	**−3.164*** **(−1.93)**	−2.539 *(−1.34)*	**0.825***** **(2.75)**	**0.872***** **(2.79)**
Tier iii operation	**−0.531***** **(−4.41)**	**−0.651***** **(−5.10)**	**−4.201***** **(−3.47)**	**−4.929***** **(−3.61)**	**−9.475***** **(−6.05)**	**−10.653***** **(−6.26)**	0.186 *(0.60)*	0.194 *(0.60)*
Listed company	**0.212**** **(1.98)**	0.094 *(0.90)*	1.945 *(1.58)*	**2.143*** **(1.75)**	**3.497**** **(2.06)**	**3.767**** **(2.13)**	**−0.425*** **(−1.66)**	−0.415 *(−1.64)*
Firm size	−0.019	−0.043	0.158	0.386	−0.421	−0.089	**−0.306*****	**−0.315*****
	(−0.69)	*(−1.48)*	*(0.42)*	*(1.03)*	*(−0.77)*	*(−0.17)*	**(−4.40)**	**(−4.13)**
Firm age	**0.450*****	**0.454*****	**5.827*****	**6.181*****	**8.784*****	**9.427*****	0.123	0.178
	(4.93)	**(5.37)**	**(6.04)**	**(6.63)**	**(6.84)**	**(7.43)**	*(0.79)*	*(1.11)*
Financial_leverage	**0.327***	0.042	**−0.075*****	**5.110*****	**7.600*****	**4.701****	0.518	0.495
	(1.92)	*(0.22)*	**(−3.55)**	**(2.78)**	**(3.48)**	**(2.03)**	*(1.06)*	*(0.96)*
Conc_shares	**−0.013***** **(−6.37)**	**−0.013***** **(−6.55)**	**−0.075***** **(−3.55)**	**−0.074***** **(−3.34)**	**−0.109***** **(−4.05)**	**−0.104***** **(−3.78)**	**0.009**** **(2.12)**	**0.010** **(2.51)**
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	**4.924*****	**5.480*****	**10.189****	**−6.458*****	**−9.741***	−5.083	**9.042*****	**8.793*****
	(9.64)	**(10.87)**	**(−2.16)**	**(−1.46)**	**(−1.75)**	*(−0.90)*	**(8.19)**	**(8.52)**

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Table B.3: CG Index and Performance Variables: Equity Holdings *(continued)*

Dependent Variables	ODO 1–6 Score		ROE/ROIC		EROE/EROIC		Credit risk 1–11	
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Number of observations	213	213	208	208	197	197	213	208
F statistic	21.06	18.40	31.75	25.79	32.51	26.38	22.40	14.45
R-squared	0.597	0.581	0.551	0.546	0.566	0.557	0.599	0.428

Note: This table exhibits the outcomes of different regression models using the variable EQUITY OPERATION as a moderator of the relationship between the level of adherence to the CG Index and firm-level performance. This variable assumes a value of one if the project involves equity financing and zero otherwise. Models 1, 3, 5, and 7 use adherence to the Full CG Index (ADHERENCE_FULL_CG) as the explanatory variable of interest, while models 2, 4, 6, and 8 use the adherence to the Core CG Index (CORE_CG_INDEX). See Appendix C for the full list of questions of the index. The dependent variables are ODO 1–6 (models 1 and 2), the overall development outcome rating of the project on a 1–6-point scale, ranging from highly unsuccessful to highly successful; ROE/ROIC (models 3 and 4), the annual return on equity or return on invested capital of the project; EROE/EROIC (models 5 and 6), the annual economic return on equity or economic return on invested capital of the project; and CREDIT RISK 1–11 (models 7 and 8), the credit risk rating of the project on a scale from 1 to 11. Control variables are ADVISORY SERVICES, dummy if IFC provided advisory services to the client; NOMINEE DIRECTOR, dummy indicating if IFC appointed a nominee director to the board of the client; TIER iii OPERATION, dummy if the disbursement has been classified as a Tier iii investment by IFC; LISTED COMPANY, dummy if the client is a listed company; FIRM SIZE, natural logarithm of firm's total assets; FIRM AGE, natural logarithm of years since company founding; FINANCIAL_LEVERAGE, total liabilities over total assets; CONC_SHARES, percentage of voting shares held by the controlling shareholder. Appendix E presents detailed operational definitions of all variables. Models are estimated through cross-sectional multiple linear regressions estimated with robust White-corrected standard errors. All regressions are controlled for four industry dummy variables as per IFC's industry classification. Data refer to the period from 2011 to 2016. Robust t-statistics are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Similar analyses for the other moderating variables yielded results that were qualitatively similar to those obtained for the presence of an equity deal. In most cases, the coefficients of the interaction terms were not statistically significant.

Again, note that the absence of statistically significant coefficients and conclusive results in the multiple regressions is likely a consequence of a dataset that is too small as well as relatively poor in terms of the variables' construction (likely leading to a relevant measurement error).

In summary, the following are the main results from the attempt to carry out multiple regressions with the database available so far:

- The credit risk rating of the project was the only performance variable for which there were consistent results. In virtually all specifications, a higher level of adherence to IFC's CG Index is associated with a lower credit risk rating of the project.
- For the other performance variables, the analysis yielded mixed results, in some instances contradictory to the hypothesis.
- The analysis of potential moderating variables also did not allow drawing robust conclusions. In most cases, the coefficients of the variables of interest were not statistically significant.

APPENDIX C

Full Corporate Governance Index

The CG Index focuses on a limited set of critical CG characteristics, selected through a survey of literature on CG indices, internationally recognized codes of best practices, and direct consultation with IFC corporate governance specialists using an online survey.[31]

It contains 84 questions, divided into five dimensions: commitment to CG, structure and funding of the board of directors, control environment and processes, transparency and disclosure, and shareholders rights; 51 are applicable to all firms, 5 for family-owned businesses, 7 for financial institutions, and 21 for listed companies.

[31] However, the CG Index used in this research is not necessarily a complete CG indicator, and it may not have included some elements that can be relevant for measuring the true quality of the CG practices of a particular firm.

Type of Control	#	Dimension	#	Question
All	1	Commitment to CG	1	Does the company have a Corporate Governance Code (or "Policy" or "Guidelines") in addition to the Articles of Association/By-laws addressing, at a minimum, the rights and treatment of shareholders, the role of the board of directors, transparency and disclosure, and business ethics?
All	1	Commitment to CG	2	Does the company have a written Code of Conduct? (1.0 if Code has been approved by the Board; 0.5 if approved by the Management Team)
All	1	Commitment to CG	3	Do board members receive periodic training on corporate governance related issues sponsored/funded by the company?
All	1	Commitment to CG	4	Does the company have a designated officer or governance body responsible for overseeing corporate governance policies and practices? (1.0 if reports to the Board; 0.5 if reports to the Management Team)
Family Owned	1	Commitment to CG	5	Does the company have a family-employment policy (e.g. establishing the rules for hiring and promoting members of the controlling family)?
Family Owned	1	Commitment to CG	6	Does the company have written policies (e.g. family constitution) addressing key family governance element, such as – Succession planning; – Human resources and family member employment; – Family member share ownership?
Listed	1	Commitment to CG	7	Does the company periodically disclose the extent to which its corporate governance code and practices conform to the code of best practice of its country?
Listed	1	Commitment to CG	8	Is the company a signatory of national and/or international initiatives to combat corruption (e.g., the Principles for Countering Bribery, voluntary industry-specific codes of practice)?
All	2	Structure & Functioning of the BoD	9	Does the board receive periodic reports from the management about the implementation of the strategic plan?
All	2	Structure & Functioning of the BoD	10	Does the board formally approve the strategic and business plan of the company?
All	2	Structure & Functioning of the BoD	11	Does the board have an internal regulation (e.g. Charter, by-law or other formal document) establishing its role, composition and functioning rules?
All	2	Structure & Functioning of the BoD	12	Does the board carry out a dedicated meeting or session to discuss strategy at least once a year?
All	2	Structure & Functioning of the BoD	13	Does the company only appoint alternate directors if required by the local law? (please assign zero point if there are alternate directors in place which are **NOT** mandatory by local law)
All	2	Structure & Functioning of the BoD	14	Does the board include women directors? (0.5 if the company has one female director; 1.0 if there are two or more women on the board)
All	2	Structure & Functioning of the BoD	15	Does the board include directors who are independent of management and controlling shareholders? (0.5 if the company has one independent director; 1.0 if two or more)

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Type of Control	#	Dimension	#	Question
All	2	Structure & Functioning of the BoD	16	Are Chairman and CEO positions occupied by different people?
All	2	Structure & Functioning of the BoD	17	Is the audit committee only composed by non-executive directors (NEDs)? (1.0 if only composed by NEDs; 0.5 if ithere are non-executive members who are not board members) (For listed and financial institutions, consider independent directors instead of NEDs)
All	2	Structure & Functioning of the BoD	18	Is there at least one member of the audit committee has relevant audit and accounting expertise? (1.0 if someone has audit and accounting expertise; 0.5 if at least one member has relevant finance expertise)
All	2	Structure & Functioning of the BoD	19	Does the board have an audit committee in place?
All	2	Structure & Functioning of the BoD	20	Do all board committees have internal regulations specifying their role, composition and functioning? (1.0 if all have internal regulations; 0.5 if just some of them have internal regulations)
All	2	Structure & Functioning of the BoD	21	Does the board have regular meetings between 6 to 8 times per year? (please use 8 to 12 for financial institutions)
All	2	Structure & Functioning of the BoD	22	Do directors regularly receive all documentation of board meetings with at least 5 days in advance? (please adopt 7 days for listed companies and 2 days for family-owned firms)
All	2	Structure & Functioning of the BoD	23	Does the board have a corporate secretary? (1.0 if corporate secretary is full time; 0.5 if corporate secretary functions are combined with other functions, such as legal)
All	2	Structure & Functioning of the BoD	24	Does the company have a written policy establishing rules for the approval of related parties' transactions (RPTs)? (1.0 if policy requires conflicted directors to abstain from voting; 0.5 if policy exists but does not require conflicted directors to abstain)
All	2	Structure & Functioning of the BoD	25	Does the board have a formal remuneration policy for board members that takes into account their attendance and membership of committees?
All	2	Structure & Functioning of the BoD	26	Does the board conduct self-evaluations or other reviews of its effectiveness on an annual basis? (1.0 if self-evaluation is conducted by an external facilitator; 0.5 if conducted internally. Pleaso also assign 1.0 if company alternates between the two types of evaluation)
All	2	Structure & Functioning of the BoD	27	Does the company have a succession plan for the CEO?
All	2	Structure & Functioning of the BoD	28	Does the board adopt Key Performance Indicators (KPIs) for the CEO and senior management and periodically review their performance?
All	2	Structure & Functioning of the BoD	29	Does the board formally appoint the CEO?

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Type of Control	#	Dimension	#	Question
Family Owned	2	Structure & Functioning of the BoD	30	Are Chairman and CEO occupied by non-relatives?
Financial	2	Structure & Functioning of the BoD	31	Does the company have a risk committee at the board level? (1.0 if there is a separate risk committee; 0.5 if there is a joint audit and risk committee)
Financial	2	Structure & Functioning of the BoD	32	Is the compensation of the senior management team linked to individual performance (not the overall company performance results)?
Listed	2	Structure & Functioning of the BoD	33	Does the company have a corporate governance committee in place?
Listed	2	Structure & Functioning of the BoD	34	Is the board chaired by an independent director? (0.5 if there is a lead independent director)
Listed	2	Structure & Functioning of the BoD	35	Is the compensation of the senior management team linked to individual performance (not the overall company performance results)?
All	3	Control Environment & Processes	36	Does the audit committee oversee the implementation of the internal and external auditors' recommendations?
All	3	Control Environment & Processes	37	Is the board's audit committee involving in the appointment of the external auditors?
All	3	Control Environment & Processes	38	Does the company follow internationally recognized standards on internal audit? (e.g. the International Standards for the Professional Practice Internal Auditing issued by the International Internal Audit Standards Board – IIASB)
All	3	Control Environment & Processes	39	Is there one person formally responsible for the compliance initiatives of the company (e.g. compliance officer or similar)? (1.0 for full-time compliance officer; 0.5 for half-time)
All	3	Control Environment & Processes	40	Does the company follow internationally recognized standards on internal controls?
All	3	Control Environment & Processes	41	Have the external auditors consistently flag repetitive shortcomings in the company's internal control system during the last 3 years?
All	3	Control Environment & Processes	42	Does the company have a specific whistleblower channel that ensures anonymity for informers and due treatment of the denounces?
All	3	Control Environment & Processes	43	Does the board approve the company's risk management policies?
All	3	Control Environment & Processes	44	Does the board oversees the implementation of the risk management policies?

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Type of Control	#	Dimension	#	Question
All	3	Control Environment & Processes	45	Is there one person formally responsible for the risk management initiatives of the company? (e.g. CRO or risk manager)
All	3	Control Environment & Processes	46	Does the Internal Audit unit have an audit work plan that is approved by the Audit Committee or by the board every year?
All	3	Control Environment & Processes	47	Does the Internal Audit report directly to the Audit Committee or to the board of directors?
All	3	Control Environment & Processes	48	Is there an internal audit function in place?
All	3	Control Environment & Processes	49	Does the internal audit have its charter or specific terms of reference? (1.0 if approved by the Board; 0.5 if approved by the Management Team)
All	3	Control Environment & Processes	50	Are financial statements audited by a recognized independent auditing firm? (1.0 if company uses an international audit firm; 0.5 if it hires a local audit firm)
All	3	Control Environment & Processes	51	If the audit firm provides non-audit services, are non-audit fees limited to 25% of total auditor fees?
All	3	Control Environment & Processes	52	Does the external auditor report on the adequacy of the company's system of internal controls?
All	3	Control Environment & Processes	53	Are the company's financial statement audited based on International Standards on Auditing or other internationally recognized standards?
Financial	3	Control Environment & Processes	54	Is there a formal compliance program in place? (1.0 if compliance program has been approved by the Board; 0.5 if approved by the Management Team)
Financial	3	Control Environment & Processes	55	Does the internal audit carry out a risk-based audit?
Listed	3	Control Environment & Processes	56	Is there a formal compliance program in place? (1.0 if compliance program has been approv ed by the Board; 0.5 if approved by the Management Team)
Listed	3	Control Environment & Processes	57	Does the internal audit carry out a risk-based audit?
All	4	Transparency and Disclosure	58	Does the company prepare financial statements in accordance with international accounting standards (e.g. IFRS)?
All	4	Transparency and Disclosure	59	Does the company publish an annual report in addition to its financial statement? (1.0 if annual report is both in the local language 0.5 if annual report is only in local language)
All	4	Transparency and Disclosure	60	Is there a section on the firm's website dedicated to corporate governance?

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Type of Control	#	Dimension	#	Question
All	4	Transparency and Disclosure	61	Does the company discuss all material transactions with affiliates of the controlling shareholders, directors or management in its statements?
Financial	4	Transparency and Disclosure	62	Does the company disclose its main risks in the annual report or website?
Financial	4	Transparency and Disclosure	63	Does the company periodically disclose in the Annual Report or website its political contributions and other donations?
Listed	4	Transparency and Disclosure	64	Does the company have a designated officer to speak on behalf of the company?
Listed	4	Transparency and Disclosure	65	Does the company hold periodic meetings with equity or credit analysts?
Listed	4	Transparency and Disclosure	66	The company did **NOT** receive any regulatory sanctions for poor disclosure in the past 5 (five) years?
Listed	4	Transparency and Disclosure	67	Does the company have a full time Investor Relations (IR) officer and IR unit? (1.0 if company has a IR unit and IR full time officer; have a IR unit)
Listed	4	Transparency and Disclosure	68	Does the company disclose its main risks in the annual report or website?
Listed	4	Transparency and Disclosure	69	Does the company disclose its sustainability policy?
Listed	4	Transparency and Disclosure	70	Does the company disclose the individual compensation of board members and senior managers? (1.0 if company discloses individual compensation of directors and senior managers; 0.5 if discloses remuneration of only one group)
Listed	4	Transparency and Disclosure	71	Does the company periodically disclose its political contributions and other donations?
All	5	Shareholders Rights	72	Is there any mechanism that permits minority shareholders to nominate members of the board (cumulative voting, block voting, etc.)?
All	5	Shareholders Rights	73	Are shareholders provided with all material information and detailed agenda on the date of the first notice of the shareholders' meetings?
All	5	Shareholders Rights	74	Does the company have clearly articulated and enforceable policies with respect to treatment of minority shareholders in changes of control, such as tag along, preemptive rights, etc.?
All	5	Shareholders Rights	75	Does the company only use common shares?
Family Owned	5	Shareholders Rights	76	Is there an exit provision for family shareholders? (A provision allowing minority shareholders to sell their shares in a manner which is equitable to all shareholders. E.g. put option, tag along clause, drag along)
Family Owned	5	Shareholders Rights	77	Is there a family council established (if a number of family members are not working in the business)?
Financial	5	Shareholders Rights	78	Has the regulator, central bank, or the stock exchange conducted any investigation into the company's treatment of shareholders in the last five years?
Listed	5	Shareholders Rights	79	Does the company adopt mechanisms such as proxy voting and electronic voting?

APPENDIX D

Glossary[32]

Annual General Meeting (AGM) (General Meeting of Shareholders): A shareholders' gathering, usually held at the end of each fiscal year, at which shareholders and management discuss the previous year and the outlook for the future, directors are elected, and other shareholder concerns are addressed. The AGM usually makes decisions only on major issues affecting the company.

Annual Report: A document issued annually by companies to their shareholders and stakeholders. It contains information on financial results and overall performance during the previous fiscal year and comments on the future outlook. The annual report might also include the corporate governance report and other narrative reports.

Auditor's Opinion: A certification that accompanies financial statements, provided by independent auditors who audit a company's financial statements and records. The opinion indicates whether or not, overall, the financial statements present a fair reflection of the company's financial condition.

Audit: A review of the historical financial statements to enhance the degree of confidence in them. It consists of an examination and verification of a company's financial and accounting records and supporting documents by a competent, qualified professional and independent external auditor in order to assure readers that they are in accordance with applicable reporting and accounting requirements, are free from material misstatement due to fraud or error and are true and fair representation of the company's financial condition.

Audit Committee: A committee constituted by the board of directors, typically charged with oversight of company reporting and disclosure of both financial and nonfinancial information to stakeholders. The committee usually is responsible for selecting and recommending the company's audit firm to be approved by the board/shareholders.

Board of Directors: The collective group of individuals elected by the shareholders of a company to direct and control the company. They define vision and mission, set the strategy and business priorities, and oversee the management of the company. The board is usually charged with issues such as selecting the chief executive officer, defining the compensation package of officers, and setting the long-term objectives of the firm and oversight of risk and compliance. There are two main board models around the world: one-tier board (unitary

[32] This glossary is based primarily on previous IFC publications, especially 1) Who's Running the Company—A Guide to Reporting on Corporate Governance (IFC Global Corporate Governance Forum, in partnership with International Center for Journalists, 2012); and 2) Practical Guide to Corporate Governance Experiences from the Latin American Companies Circle (IFC GCGF, in partnership with OECD, 2009).

board system) and two-tier board (dual system). The unitary board system is characterized by a single board that governs the company (this board might include both executive and non-executive members). The dual system is characterized by distinct supervisory and management bodies. The former is commonly referred to as the supervisory board, the latter as the executive board. (Please see "one-tier board" and "two-tier board," below.) In countries adopting the dual system, the terminology is "supervisory board" instead of "board of directors," and "management board" instead of "senior management team."

Board Internal Regulation (Board Charter or Statute): A document detailing the roles, responsibilities, composition, and functioning of the board of directors and its committees.

Bylaws: A written document stating the rules of internal governance for a company as adopted by its board of directors or shareholders. Includes topics such as election of directors, duties of officers, and how share transfers should be conducted.

Chair of the Board: The person responsible for leadership of the board and the effectiveness of the board's functioning. The chair is in charge of activities such as the elaboration of the board agenda as well as ensuring that the board's business is conducted in the interest of all shareholders.

Chief Executive Officer (CEO): The highest-ranking management officer of the company, who reports to the board of directors. The CEO is usually responsible for short-term decisions, leadership of employees, and implementation of strategy, risk management, and oversight of management.

Code of Conduct (or Code of Ethics): A document describing the company's principles, values, standards, or rules of behavior that should guide its decisions, procedures, and systems. It defines appropriate behaviors and actions on relevant and potentially delicate subjects.

Committees of the Board (Board Committees): Committees are ancillary bodies of the board, established to assist it in the analysis of specific subjects outside of regular board meetings. Common committees are the audit, remuneration, and nomination committees.

Common Shares: Equity securities representing ownership in a corporation and providing the holders with voting rights and the right to a share in the company's residual earnings through dividends, stock buybacks, and/or capital appreciation.

Compliance: Agreeing to and abiding by rules and regulations. In general, compliance means conforming to a specification or policy (internal or external), standard, or law that has been clearly defined.

Company Charter: An official document filed with the relevant government agency in the country where the firm is incorporated. The charter outlines the corporation's purpose, powers under law, authorized classes of securities to be issued, and the rights and liabilities of shareholders and directors.

Conflict of Interest: A situation when a company official or a staff member has a competing professional or personal interest with the company, which can impede unbiased fulfillment of duties by such person. It includes a situation that has the potential to undermine the impartiality of a person because of the possibility of a clash between the person's self-interest and professional interest or public interest. It may also be a situation in which a party's

responsibility to a second party limits its ability to discharge its responsibility to a third party. Directors have a duty to avoid conflicts of interest and should always act in the best interests of the company and all shareholders.

Controlling Shareholders: Shareholders who own enough of the company's voting capital to control the composition of the board of directors. Typically, a threshold of 30 percent or more is adopted for identifying a controlling shareholder.

Corporate Governance: The structures and processes for the direction and control of companies. It aims to assure protection of shareholder rights and efficiency and effectiveness of interaction among the general meeting of shareholders, the board of directors and the senior management team.

Corporate Governance Code: A document, typically approved by the company's general shareholders' meeting or board of directors, aiming to demonstrate the company's commitment to sound corporate governance by providing guidelines on issues such as board practices, shareholder rights, related-party transactions, relations with stakeholders, and information disclosure and transparency policies.

Corporate Secretary: A key figure of a corporate governance system. The corporate secretary assures the company's compliance with corporate governance legislation and internal documents and fosters efficient coordination of the operations of all company governance bodies, information sharing between such bodies and shareholders, and resolution of other corporate governance issues within the company. Tasks usually comprise the organization of the meetings of governance bodies, compliance of the procedures of the board of directors with the law, keeping the book of shareholders, and preparing and recording minutes of all meetings of shareholders, board of directors, and other governance bodies.

Cumulative Voting: A voting system that gives minority shareholders more power, by allowing them to cast all of their board of director votes for a single candidate, as opposed to regular or statutory voting, in which shareholders must vote for a different candidate for each available seat or distribute their votes between a number of candidates.

Disclosure: Refers to the obligation of a firm to provide material information in accordance with the requirements of a number of parties, including regulatory authorities and the public, or in accordance with standards, such as accounting standards, and self-regulatory contracts. Disclosure contributes to the transparency of the firm, which is one of the main corporate governance principles.

Dual-Class Shares: Shares that have different rights, such as A Class and B Class shares, where one class has voting rights and the other does not.

Executive Director: A member of a company's board of directors who is also part of the company's executive team (for example, the CEO or the chief financial officer).

Executive Session: The portion of a board of directors' meeting that excludes the chief executive or any other executive.

External Auditors (Independent Auditors): Professionals from an external auditing firm charged with undertaking an audit of the financial statements. An audit may be required annually, semiannually, or quarterly. In most countries, the independent auditors undertake an annual audit. The independent auditor is required to render

an unbiased judgment that the financial statements and accounting records of the firm are likely to be free from material misstatement and are a fair reflection of the financial position of the firm.

Family Constitution: Guidelines for the rights and duties of family members who will share in the family's resources, mainly those associated with invested companies.

Family Council: Organized forum for family members to meet and discuss the current and future state of the family business. Members may or may not be directly involved in the day-to-day business operations. The family council is a way of building family unity and cohesiveness through a shared vision of the family's guiding principles and to separate the professional management of the firm from the personal family issues. It is usually the forum to determine how the family shareholding will be voted on any matter.

Family-Owned Businesses: Companies in which the controlling shareholders belong to the same family (immediate or wider family members) or group of families.

Financial Statements: a complete set of financial statements comprises a balance sheet, an income statement, a statement of changes in equity, a cash flow statement, and notes. They collectively communicate an entity's economic resources or obligations at a point in time or the changes therein for a period in accordance with a financial reporting framework.

Free-Float: The portion of shares negotiated in the market, giving liquidity to shares. These shares are not held by large owners and are not shares held in the company's treasury.

Generally Accepted Accounting Principles (GAAP): Accounting rules, conventions, and standards for companies, established by reporting requirements and accounting standard setters in the country. Each country is likely to have a GAAP, which is unlikely to be identical to any other country's GAAP.

Independent Director: Someone whose only nontrivial professional, familial, personal, or financial connection to the corporation, its chairman, CEO, or any other executive officer is his or her directorship. The independent director is expected to be capable of applying objective judgment to all company decisions.

Internal Audit: An independent, objective assurance and consulting activity designed to add value and improve an organization's operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.

Investor Relations: The corporate communications department of a company. This department specializes in information and disclosure management for public and private companies as they communicate with the investment community at large.

Minority Shareholders: Those shareholders with minority stakes in a company controlled by a majority shareholder—usually less than a 5 percent stake. However, each country may determine various thresholds applicable to the term "minority shareholder."

Non-Executive Director (NED) (Outside Director): A member of a company's board of directors who is not part of the company's executive team. A non-executive director typically does not engage in the day-to-day management

of the organization. Since the non-executive director may have relationships with the controlling shareholder, he or she might not necessarily be considered an independent director.

Non-Voting Shares: Owners holding this share class do not commonly have voting rights at the AGM, except on some matters of highest importance. Usually, non-voting shareowners have preferential rights for receiving dividends.

One-Tier Board: A board of directors composed of both executive and non-executive members. It delegates day-to-day business to the management team. Found in the United States, the United Kingdom, and Commonwealth countries.

Ownership Structure: The way in which company shares are distributed among shareholders.

Preferred Shares: Equity securities representing ownership in a corporation that have preferential rights over other share classes regarding the payment of dividends and distribution of assets upon liquidation. Preferred shares usually do not carry voting rights.

Pyramidal Structure: An organizational structure common in family-dominated companies. Legally independent companies are controlled by the same family through a chain of ownership relations.

Related Party: A party is related to an entity if it can directly or indirectly control the other party or exercise control through other parties; it may also be where parties are subject to a common control from the same source. Related parties tend to have influence over the financial or operating policies of a firm or have the power to influence another party's actions. A related party may be a close family member (including partners, spouses, children, other relatives), a key manager in the entity (and their close family members), or entities such as subsidiaries of the entity, holding companies, joint ventures, and associates.

Risk Management: The process of identifying, analyzing, managing, and monitoring a corporation's exposure to risk and determining optimal approaches to handling such exposure.

Senior Management Team: A company's body carrying out the day-to-day management of its operations, including implementation of a company's strategic development plan, introduction of a corporate culture in accordance with business ethics standards, and drafting the company's bylaws and guidelines. A company may establish a sole executive body (for example, the CEO) or a collegial executive body (the management board).

Share: A security issued by a joint-stock company and authorizing the right to participate in a company's general meeting of shareholders, to receive dividends, and to receive a portion of a company's assets in case of the company's dissolution.

Shareholders: Holders of shares issued by companies.

Shareholders' Agreement: A written document governing the relations among shareholders and defining how the company will be managed and controlled. The agreement helps align the objectives of controlling shareholders to safeguard common interests and to protect the interests of minority shareholders.

Shareholders Rights: The rights resulting from ownership of shares, which may be based in legal rights or other rights contracted with the company. The basic shareholder rights include the right to information on the company, to attend the meeting of shareholders, to elect directors, and to appoint the external auditor, as well as voting rights and cash flow rights.

Stakeholder: A person or organization with a legitimate interest in a project or company. In a more general sense, it refers to suppliers, creditors, clients, employees, and the local community—all affected by the actions of the company.

Tag-Along Rights: If a majority shareholder sells his or her stake, minority holders have the right to participate and sell their stake under the same terms and conditions as the majority shareholder. This right protects minority shareholders and is a standard inclusion in shareholders' agreements.

Transparency: The corporate governance principle of publishing and disclosing timely information relevant to stakeholders' interests and to shareholders on all material matters, including its financial position, performance, and ownership and governance structure.

Two-Tier Board: A board of directors that divides supervisory and management duties into two separate bodies. The supervisory board, comprising non-executive directors, oversees the management board, comprising executive directors. Common in France, Germany, and Eastern Europe. Not all styles of two-tier boards are identical.

Voting Rights: The right to vote at shareholders' meetings on issues of importance for the company.

Voting Shares: Shares that give the shareholder the right to vote on matters of corporate policy, including elections to the board of directors.

APPENDIX E

Operational Definition of All Variables

Code	Type of Variable	Construct	Definition	Dimension
Ind_Name	Control	Industry	IFC Industry Classification	NA
Dummy_Ind	Control	Industry	Dummy of Industry Classification	NA
Sector	Control	Sector	IFC Secondary Sector Name	NA
Country	Control	Country	Client Country	NA
Reg_Name	Control	Region	Client Region	NA
Dummy_Reg	Control	Region	Dummy of Client Region	NA
Inception	Control	Firm Age	Year of Inception of Firm's Operation	NA
Conc_Shares	Control	Ownership concentration	Percentage of voting shares held by the controlling shareholder	NA
Listed	Control	Listed on stock exchange	1 if listed on stock exchange; 0, otherwise.	NA
Cross_List	Control	Cross-listed on foreign stock exchange	1 if cross-listed on foreign stock exchange (e.g. ADR Level 2 or 3 on NYSE); 0, otherwise.	NA
Bus_Group	Control	Business group membership	If firm belongs to business group, then 1; if it stand-alone firm, then 0.	NA
Assets	Control	Firm Size	Total assets (in US$)	NA
Revenues	Control	Firm Size	Total revenues in US$	NA
Shar_Eq	Control	Shareholders' Equity	Equity (average in US$)	NA
Net_Income	Control	Profitability	Net Income in US$	NA
Fix_Asset	Control	Fixed Assets	Premises & Equipment in US$	NA
Liabilities	Control	Liabilities	Total liabilities in US$	NA
Debt_Asset	Control	Financial leverage	Total liabilities / total assets	NA

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Code	Type of Variable	Construct	Definition	Dimension
Tangibility	Control	Asset tangibility	Fixed assets (property, plant, & equipment) / operational revenue	NA
Tier	Moderating	Size of IFC disbursement	Tier i, ii or iii	NA
Loan	Moderating	Type of IFC operation	If loan deal, then 1; otherwise, 0	NA
Equity	Moderating	Type of IFC operation	If equity deal, then 1; otherwise, 0	NA
New_Client	Moderating	History of relationship with IFC	If new client, then 1; if repeated client, then 0	NA
Nom_Right	Moderating	Right for Nominee Director	If IFC has the right to indicate a Nominee Director, 1; Otherwise, 0	NA
Nominee	Moderating	Nominee Director	If IFC exercises its rights and indicates a Nominee Director, 1; Otherwise, 0	NA
Female	Moderating	Female Nominee Director	If IFC indicates a Female Director, 1; Otherwise, 0	NA
Staff_FStaff	Moderating	Staff or Former Staff as Nominee Director	If IFC indicates a Staff or Former Staff as Director, 1; Otherwise, 0	NA
Advisory	Moderating	Type of IFC involvement	If IFC carried out CG-related advisory services, then 1; otherwise, 0	NA
SIZE	Moderating	Size of IFC disbursement	Amount (US$) involved operation (Loan or Equity)	NA
DOTS_1–6_ Score	Dependent	Performance	6-point scale	Multidimensional
DOTS_Fin_ Perf	Dependent	Performance	4-point scale	Financial
DOTS_Econ_ Perf	Dependent	Performance	4-point scale	Economic
DOTS_E&S	Dependent	Performance	4-point scale	E&S Performance
DOTS_PSD	Dependent	Performance	4-point scale	Private Sector Dev.
Av_DOTS_1–6_Score	Dependent	Performance	6-point scale	Multidimensional (Average from 2011 to 2016)
Av_DOTS_Fin_ Perf	Dependent	Performance	4-point scale	Financial (Average from 2011 to 2016)

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Code	Type of Variable	Construct	Definition	Dimension
Av_DOTS_ Econ_Perf	Dependent	Performance	4-point scale	Economic (Average from 2011 to 2016)
Av_DOTS_E&S	Dependent	Performance	4-point scale	E&S Performance (Average from 2011 to 2016)
Av_DOTS_PSD	Dependent	Performance	4-point scale	Private Sector Dev. (Average from 2011 to 2016)
ROE_Annual	Dependent	Performance	Return on Invested Capital / Equity	Financial
EROE_Annual	Dependent	Performance	Economic Return on Equity	Financial
Avrg_ROE	Dependent	Performance	Return on Invested Capital / Equity (Average from 2011 to 2016)	Financial
Avrg_EROE_ Annual	Dependent	Performance	Economic Return on Equity (Average from 2011 to 2016)	Financial
Credit_Risk	Dependent	Performance	Credit Risk Rating. CRRs range from 1 to 7, where 1 indicates the lowest risk, and 7 the highest risk level (commensurate with default). Additional modifiers (A and B) are used to add further granularity in the CRR for categories 2 to 5, where A defines a higher credit quality than B within the category. Indicators ('+' improving; or '–' deteriorating; or '=' neutral) are used to signify the expected future trend in the CRR. The CRR categories are Very Good (1), Good (2), Average (3), Watch (4), Substandard (5), Doubtful (6) and Loss (7).	Financial
Cred_Risk_1–7	Dependent	Performance	Credit Risk Rating (1–7 Scale) 1–1 Very Good; 2–2A Good; 2–2B Good; 3–3A Average; 3–3B Average; 4–4A Watch; 4–4B Watch; 5–5A Substandard; 5–5B Substandard; 6–6 Doubtful; 7–7 Loss.	Financial
Cred_Risk_1–11	Dependent	Performance	Credit Risk Rating (1–11 Scale) 1–1 Very Good; 2–2A Good 3–2B Good; 4–3A Average; 5–3B Average; 6–4A Watch; 7–4B Watch; 8–5A Substandard; 9–5B Substandard 10–6 Doubtful; 11–7 Loss.	Financial
ESRR	Dependent / Explanatory	Performance / E&S	Environmental & Social Review Rating: Index indicating Client's capability and/or management of E&S issues in accordance with IFC's Sustainability Framework: 1 – Excellent; 2 – Satisfactory; 3 – Partly Unsatisfactory; 4 – Unsatisfactory.	E&S Risk Rating
Adh_Full_CG	Explanatory	Corp. Governance	Overall percentage of adherence with all CG dimensions	Multidimensional

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Code	Type of Variable	Construct	Definition	Dimension
Adh_Commit_CG	Explanatory	Corp. Governance	Overall percentage of adherence with Commitment to CG	Multidimensional
Adh_Board	Explanatory	Corp. Governance	Overall percentage of adherence with Structure & Functioning of the Board	Structure & Functioning of the Board
Adh_Control	Explanatory	Corp. Governance	Overall percentage of adherence with Control Environment and Processes	Control Environment and Processes
Adh_Transp_Disc	Explanatory	Corp. Governance	Overall percentage of adherence with Transparency and Disclosure	Transparency and Disclosure
Adh_Shar_Rights	Explanatory	Corp. Governance	Overall percentage of adherence with Shareholders Rights	Shareholders Rights
Var_Full_CG	Explanatory	Corp. Governance	Evolution of percentage of adherence with all CG dimensions (2011–2016)	Multidimensional
Core_CG_26Ind	Explanatory	Corp. Governance	Overall percentage of adherence with the 26 selected questions (2, 4, 6, 10, 14, 15, 16, 19, 21, 24, 30, 31, 33, 38, 39, 42, 45, 48, 54, 56, 59, 62, 69, 72, 75, and 81)	Selected Indicators
Var_Core_CG_26Ind	Explanatory	Corp. Governance	Evolution of percentage of adherence with the 26 selected questions (2, 4, 6, 10, 14, 15, 16, 19, 21, 24, 30, 31, 33, 38, 39, 42, 45, 48, 54, 56, 59, 62, 69, 72, 75, and 81)	Selected Indicators

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November/2018

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