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What Determines Corporate Transparency?

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ABSTRACT

We investigate corporate transparency, defined as the availability of firm-specific information to those outside publicly traded firms. We conceptualize corporate transparency within a country as output from a multifaceted system whose components collectively produce, gather, validate, and disseminate information. We factor analyze a range of measures capturing countries' firm-specific information environments, isolating two distinct factors. The first factor, interpreted as financial transparency, captures the intensity and timeliness of financial disclosures, and their interpretation and dissemination by analysts and the media. The second factor, interpreted as governance transparency, captures the intensity of governance disclosures used by outside investors to hold officers and directors accountable. We investigate whether these factors vary with countries' legal/judicial regimes and political economies. Our main multivariate result is that the governance transparency factor is primarily related to a country's legal/judicial regime, whereas the financial transparency factor is primarily related to political economy.

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1. Introduction

The availability of information is alleged to be a key determinant of the efficiency of resource-allocation decisions and growth in an economy. A growing literature in economics and finance investigates the effects of domestic financial development on economic growth and efficiency.[1] At the heart of the underlying theories is the role of the financial sector in reducing information costs and transactions costs in an economy. In spite of the central role played by information costs in these theories, little research considers how and why information systems, per se, vary around the world.

In this paper we develop a framework for conceptualizing and measuring information systems that contribute to corporate transparency, defined as the availability of firm-specific information to those outside publicly traded firms (section 2).[2] We conceptualize corporate transparency within a country as the joint output of a multifaceted system whose components collectively produce, gather, validate, and disseminate information to market participants outside the firm.[3] The framework categorizes country-level measures of information mechanisms under three headings: (1) the corporate reporting regime, including measures of intensity, measurement principles, timeliness, and audit quality of financial disclosures, and the intensity of governance disclosures (i.e., identity, remuneration, and shareholdings of officers and directors, and identity and holdings of other major shareholders); (2) the intensity of private information acquisition, including measures of analyst following, and the prevalence of pooled investment schemes and insider trading activities; and (3) information dissemination, including a measure of the extent of media penetration in an economy.[4]

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[1] Levine [1997] synthesizes many of the underlying theories into a framework whereby a well-developed financial sector is expected to facilitate resource allocation by serving five functions: mobilize savings, facilitate risk management, identify good versus bad investment opportunities, monitor and discipline managers, and facilitate the exchange of goods and services.

[2] We do not address the proposition that more corporate transparency is necessarily better than less. Corporations in some countries may be transparent to key constituencies (family owners, banks, the government) yet lack corporate transparency as we define it. Our objective is to investigate the underlying nature of corporate transparency and document how it varies with important elements of the legal and political environment. Welfare statements are beyond the scope of this paper.

[3] Our conceptual framework also can be used to develop transparency measures at the firm level. For example, within the United States there are interfirm differences in the quality of corporate reporting (e.g., disclosure intensity and timeliness, accounting methods, audit quality), in private information acquisition (e.g., analyst following, institutional holdings, and insider trading activity), and information dissemination (e.g., media coverage or Internet-based dissemination).

[4] We refer to our measures of information systems as transparency measures. However, we acknowledge that corporate transparency is a function of both the information systems and the complexity of the underlying firms. Consideration of cross-country variation in the complexity of firms is beyond the scope of this paper.

In section 3 we examine variation in our transparency measures around the world and perform factor analysis to explore the structure underlying our measures. Our factor analysis isolates two factors from the array of country-level measures of the firm-specific information environment. The first factor, interpreted as financial transparency, captures the intensity and timeliness of financial disclosures, and their interpretation and dissemination by analysts and the media. The second factor, interpreted as governance transparency, captures the intensity of governance disclosures and, to a lesser extent, the intensity and timeliness of financial disclosures used by outside investors to hold officers and directors accountable.

In section 4 we investigate whether our financial and governance transparency factors vary with countries' legal/judicial regimes and political economies before and after controlling for per capita wealth.[5] This exploratory analysis is motivated by the proposition in Ball [2001] and others that countries' accounting and disclosure infrastructures evolve as a complementary component of their economic, legal, and political infrastructures.[6] Our main multivariate result is that the governance transparency factor is primarily related to the legal/judicial regime, whereas the financial transparency factor is primarily related to the political regime. Specifically, our cross-country regressions document that governance transparency is higher in countries with a legal/judicial regime characterized by a common law legal origin and high judicial efficiency. In contrast, financial transparency is higher in countries where the political economy is characterized by low state ownership of enterprise, low state ownership of banks, and low risk of state expropriation of firms' wealth. These results are robust to inclusion of a variety of additional institutional variables.

Our paper is related to two evolving literatures in economics and finance. The first examines the impact of legal factors on the financial development of countries. Important contributions include La Porta et al. [1997, 1998], Demirguc-Kunt and Maksimovic [1998], and Beck, Demirguc-Kunt, and Levine [2002, 2003]. A complementary literature explores the role of political structure on financial development and considers the importance of the legal view relative to the political view. Recent papers in this vein include Beck, Demirguc-Kunt, and Levine [2001] and Rajan and Zingales [2003]. We extend this literature by recognizing the multifaceted nature of corporate transparency and documenting that one facet, governance transparency, is related more closely to legal structure whereas another, financial transparency, is related more closely to political economy.

Our paper also relates to prior research into cross-country determinants of financial reporting and analyst activities. Prior research includes papers

[5] We use the term *political economy* to represent a range of institutional arrangements that capture important relations between the government and the economy.

[6] See Bushman and Smith [2001, 2003] for extensive discussion of potential relations between firm-specific information environments and other institutional features of an economy.

on cross-country variation in the value relevance of earnings (e.g., Alford et al. [1993], Ali and Hwang [2000], Francis, Khurana, and Pereria [2003], Geunther and Young [2000], Land and Lang [2002]), earnings management (Leuz, Nanda, and Wysocki [2003], Bhattacharya, Daouk, and Welker [2003]), earnings timeliness (Ball, Kothari, and Robin [2000], Ball, Robin and Wu [2002]), disclosure regulation and enforcement (Frost [1999]), disclosure intensity (Jaggi and Low [2000]), audit quality (Francis, Khurana, and Pereira [2003]), and analysts' behavior (Chang, Khanna, and Palepu [2000], Bushman, Piotroski, and Smith [2003], Hope [2003]).

We extend and complement this literature in several ways. First, although most prior research isolates individual aspects of financial reporting or analyst behavior, we view corporate transparency as the output from a system of interrelated information mechanisms. This allows us to document cross-country covariation among properties of firm-specific information systems and to develop comprehensive country-level measures of corporate transparency using factor analysis. We also attempt to explore differential relations of the legal/judicial regime and political economy with corporate transparency, and to extend the set of explanatory variables to include patent rights, concentration of political power, extent of state ownership of enterprise, costs of entry imposed on start-up firms, extent of state ownership of banks, and risk of expropriation by the state.

Section 5 completes the paper with a discussion of our intended contribution, limitations, and opportunities for future research.

2. *Corporate Transparency: A Conceptual and Measurement Framework*

Figure 1 illustrates our framework for characterizing corporate transparency, defined here as the widespread availability of firm-specific information concerning publicly listed firms in the economy to those outside the firm.[7] In the framework, we classify information mechanisms into three categories: corporate reporting, private information acquisition, and information dissemination.

Corporate reporting involves periodic disclosure of firm-specific information on a voluntary or mandatory basis. We consider five aspects of corporate reporting: (1) financial disclosure intensity, (2) governance disclosure intensity, (3) accounting principles used to measure financial disclosures, (4) timeliness of financial disclosures, and (5) audit quality of financial disclosures. The source of these variables is the Center for Financial Analysis and Research's (CIFAR) International Accounting and Auditing Trends (CIFAR [1995]). CIFAR examined the annual reports of about 1,000

[7] Variable definitions and data sources are presented in appendix A. Values of transparency measures for our sample of 46 countries are reported in appendix B.

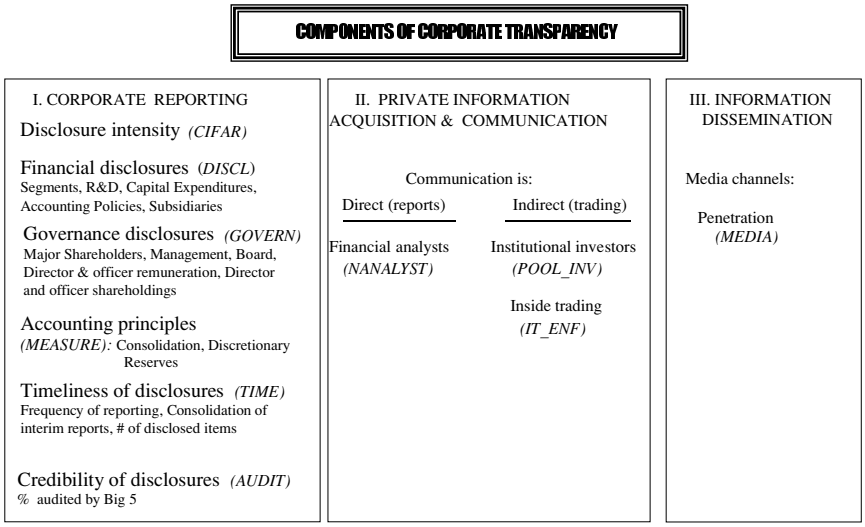

FIG. 1.—Corporate Transparency: A Conceptual and Measurement Scheme.

industrial companies across several countries. Company selection was based on sales and assets within the country. The companies selected represent a cross-section of various industry groups. According to CIFAR, most of the leading industrial companies from each country are included. Data for all of the variables were extracted directly from annual reports.[8] The data we use represent CIFAR's aggregation at the country level of disclosure practices observed in the annual reports of domestic firms sampled within a country.[9]

One concern with these data is the impact of cross-listed firms. CIFAR simply documents what companies actually disclose in their annual reports. Thus, it is possible that some of the sample firms for a given country are cross-listed. For example, firms in countries with weak investor protections and disclosure standards may choose to cross-list in countries with strong investor protections and disclosure requirements to increase protection of their minority shareholders (e.g., Reese and Weisbach [2002]). If this were the case, and a large proportion of firms sampled by CIFAR within a country are cross-listed, we would expect to find a negative relation between proxies for investor protection and transparency. However, as documented later, we document a positive relation between governance transparency and proxies for investor protection. Regardless, we acknowledge this potential limitation

[8] Hope [2003] performs several procedures to validate the general accuracy of data reported in CIFAR [1995].

[9] According to CIFAR [1995], the computation of the CIFAR index in a given country is designed to be unaffected by the lack of disclosure of items that are not applicable.

to our data and urge caution when interpreting the results. We turn now to the measures themselves.

We use three measures of disclosure intensity. The first is *CIFAR*, representing the average number of 90 accounting and nonaccounting items disclosed by a sample of large companies in their annual reports. Of our three disclosure measures, *CIFAR* is based on the broadest set of disclosures, including general information; items from the income statement, balance sheet, and funds flow statement; accounting standards; stock data; governance data; and special items.

We construct the second disclosure intensity variable, *DISCL*, on the basis of the prevalence of disclosures concerning research and development (R&D) expenses, capital expenditures, product and geographic segment data, subsidiary information, and accounting methods. We select these disclosures because they are expected to be highly proprietary in nature and highly useful to outside investors for valuing firms' securities as well as monitoring managerial decisions.[10] In addition, there is considerable cross-country variation in the disclosure intensity of these items. We include the disclosure of accounting methods because knowledge of accounting methods facilitates the interpretation of accounting disclosures.

We construct *DISCL* from detailed data included in CIFAR. For each disclosure underlying *DISCL*, CIFAR rates each country based on a sample of financial statements from that country using a scale that varies from high or low, to finer ratings that can include up to eight gradations of comprehensiveness. For example, on the question of product/geographic segment disclosure the scale includes four categories: (1) disclosed by most firms, (2) disclosed by some firms, (3) disclosed by few firms, and (4) not disclosed by firms. Because the scale differs across individual disclosure categories, we convert the ratings on each disclosure into percentiles within the sample of countries and measure *DISCL* as the average percentile across all disclosure categories.

The third disclosure intensity variable, *GOVERN*, measures the prevalence of specific disclosures related to the governance of the firm. The disclosures underlying this measure relate to identity of managers, identity of board members and their affiliations, remuneration of officers and directors, share ownership by directors and employees, identity of major shareholders, and the range of shareholdings. Here again, CIFAR rates each country within the total sample of countries on the comprehensiveness of the disclosures for each category. *GOVERN* is the average percentile rank within the sample of countries across all categories.

The variable *MEASURE* attempts to capture cross-country differences in the accounting principles used. Using CIFAR data, *MEASURE* captures the extent to which (1) financial statements reflect subsidiaries on a consolidated basis and (2) general reserves are used. Because consolidated

[10] For example, see Collins [1976] for the use of industry segment data for valuation and Berger and Hann [2003] for the use of segment data for monitoring.

financial statements generally are viewed as more informative, and the use of general reserves is viewed as a way to obscure a firm's periodic performance, we assign higher values of *MEASURE* to firms that consolidate financial statements and do not use general reserves. Hence, we expect higher values of *MEASURE* to be associated with more informative financial statements (i.e., higher transparency). *MEASURE* is the average percentile rank within the sample of countries across these two categories.

Our measure of the timeliness of financial reporting, *TIME,* increases with the frequency and comprehensiveness of interim reports. Higher values of *TIME* are interpreted as higher timeliness of financial accounting information reported by firms. *TIME* is the average percentile rank within the sample of countries across the indicated categories as indicated by CIFAR.

Finally, *AUDIT* is a measure of the credibility of financial accounting disclosures, defined on the basis of the share of the total value audited in a country represented by the Big 5 accounting firms. Using CIFAR, *AUDIT* equals 1, 2, 3, or 4 if the percentage share of Big 5 auditors is between (0, 25%), (25%, 50%), (50%, 75%), and (75%, 100%), respectively. Big 5 auditors are used in prior research as an indication of relatively high audit quality. Hence, we interpret high values of *AUDIT* as an indication of high-quality audits and enhanced credibility of financial accounting disclosures.

The second category of corporate transparency is private information acquisition. Relations between public information disclosure and the private information processing and gathering activities of investors have long been recognized as important determinants of information allocations in an economy (e.g., Verrecchia [1982]). We consider three private information systems. The first is financial analysts who specialize in processing and interpreting financial information reported by firms and in collecting additional information through discussion with firms' managers, suppliers, customers, and so on. We measure the amount of private information acquisition by financial analysts with the average number of analysts following large firms (*NANALYST*) as reported in Chang, Khanna, and Palepu [2000].

We also consider the private information collection, processing, and trading activities of insiders and institutional investors. Although the detailed information acquired and processed by institutional investors and corporate insiders is not reported publicly, their private information informs securities prices through trading decisions. We measure the importance of institutional investors by *POOL_INV,* defined as the average ratio of the value of pooled investment schemes to gross domestic product (GDP) between 1993 and 1995 using data from Beck, Demirguc-Kunt, and Levine [1999]. We measure the extent of insider trading activities by *IT_ENF,* a dummy variable equal to 1 if the country enforced insider trading laws before 1995, and 0 otherwise, as reported in Bhattacharya and Daouk [2001]. We interpret higher values of *POOL_INV* and lower values of *IT_ENF* as indicative of more

private information acquisition by institutional investors and corporate insiders, respectively.

The third component of corporate transparency is information dissemination. The inclusion of information dissemination is motivated by our perspective that lack of a well-developed communication infrastructure may impede the flow of information reported by firms, limiting the availability of the information to economic agents (see Bushman and Smith [2001]). We measure firm-specific information dissemination by the penetration of the media channels in the economy, as measured by *MEDIA,* which is the average rank of countries' per capita number of newspapers and televisions during 1993 to 1995 as reported by World Development Indicators.

3. Descriptive Statistics for Transparency Measures and Factor Analysis

3.1 DESCRIPTIVE STATISTICS

Table 1, panel A presents descriptive statistics for our transparency measures, and panel B presents Pearson and Spearman correlations and their two-tailed probability levels. The number of observations varies widely across transparency measures. The number of observations generally is most limited for measures of corporate reporting where sample size varies from 41 to 46 countries. Panel A reveals substantial cross-country variation in our measures of transparency.

The correlation matrix presented in table 1, panel B indicates many interesting relations between measures *within* each of the three categories in our framework.[11] Five of our six measures of corporate reporting—*CIFAR, DISCL, TIME, AUDIT,* and *GOVERN*—are significantly and positively correlated with each other. Turning to private information acquisition, analyst following as measured by *NANALYST* is significantly and positively correlated with *POOL_INV* ($r \approx .39$, $p \approx .06$), consistent with the positive interfirm relation documented in the United States between analyst following and shareholdings by institutional investors. Analyst following also is significantly positively correlated with *IT_ENF* ($r \approx .48$, $p < .01$).

The correlation matrix also reveals interesting relations between information systems from different categories. Analyst following is positively correlated with indicators of high-quality financial reporting, including the intensity of financial disclosures as measured by *CIFAR* and *DISCL* (rs $\approx .23$ and .57, ps $\approx .09$ and $< .001$, respectively), the timeliness of financial disclosures as measured by *TIME* ($r \approx .53$, $p \approx .01$), and the audit quality of financial disclosures as measured by *AUDIT* ($r \approx .31$, $p < .05$). Analyst following

[11] Correlation coefficients given throughout this discussion refer to the Pearson correlation coefficients reported above the diagonal of the correlation matrix, and probability levels are two-tailed. Spearman correlation coefficients reported below the diagonal are qualitatively similar to the Pearson correlation coefficients.

TABLE 1

Information Systems Contributing to Corporate Transparency

Panel A: Descriptive statistics

Variable	*N*	Mean	Std. Dev.	Median	Minimum	Maximum
Corporate reporting environment						
CIFAR	41	71.39	8.06	73.00	56.00	85.00
DISCL	46	78.84	21.78	80.62	14.49	100.00
GOVERN	46	77.98	13.37	76.45	33.33	100.00
MEASURE	46	70.11	26.79	68.48	22.83	100.00
TIME	46	66.05	25.53	70.65	17.39	99.28
AUDIT	42	3.26	0.96	4.00	1.00	4.00
Private information acquisition						
NANALYST	52	11.55	8.44	9.84	0.00	32.40
IT_ENF	105	0.229	0.42	0.00	0.00	1.00
POOL_INV	24	0.117	0.082	0.102	0.013	0.371
Dissemination of information						
MEDIA	203	51.46	23.72	48.92	12.91	96.72

TABLE 1— *Continued*

Panel B: Correlation matrix

	CIFAR	*DISCL*	*GOVERN*	*MEASURE*	*TIME*	*AUDIT*	*NANALYST*	*ITENF*	*POOL_INV*	*MEDIA*
Corporate reporting environment										
CIFAR	1.000	0.689	0.690	0.324	0.459	0.610	0.227	0.179	0.114	0.411
	–	(0.000)	(0.000)	(0.039)	(0.003)	(0.000)	(0.092)	(0.263)	(0.603)	(0.009)
	–	41	41	41	41	39	41	41	23	40
DISCL	0.694	1.000	0.525	0.128	0.510	0.370	0.572	0.281	0.251	0.463
	(0.000)	–	(0.000)	(0.398)	(0.000)	(0.016)	(0.000)	(0.059)	(0.237)	(0.001)
	41	–	46	46	46	42	46	46	24	45
GOVERN	0.654	0.438	1.000	0.123	0.269	0.317	0.206	0.058	−0.163	0.102
	(0.000)	(0.002)	–	(0.416)	(0.070)	(0.041)	(0.171)	(0.702)	(0.446)	(0.504)
	41	46	–	46	46	42	46	46	24	45
MEASURE	0.336	0.121	0.144	1.000	0.101	0.253	0.005	−0.214	−0.004	0.124
	(0.032)	(0.424)	(0.340)	–	(0.503)	(0.106)	(0.975)	(0.154)	(0.985)	(0.417)
	41	46	46	–	46	42	46	46	24	45
TIME	0.398	0.430	0.110	0.139	1.000	0.530	0.526	0.308	0.210	0.400
	(0.010)	(0.003)	(0.468)	(0.357)	–	(0.000)	(0.000)	(0.037)	(0.325)	(0.007)
	41	46	46	46	–	42	46	46	24	45
AUDIT	0.613	0.445	0.395	0.249	0.529	1.000	0.309	0.202	0.062	0.535
	(0.000)	(0.003)	(0.010)	(0.112)	(0.000)	–	(0.046)	(0.199)	(0.772)	(0.000)
	39	42	42	42	42	–	42	42	24	41

Private information acquisition										
NANALYST	0.267	0.582	0.167	0.017	0.561	0.317	1.000	0.482	0.388	0.523
	(0.092)	(0.000)	(0.268)	(0.911)	(0.000)	(0.041)	–	(0.000)	(0.061)	(0.000)
	41	46	46	46	46	42	–	52	24	51
IT_ENF	0.163	0.280	0.020	−0.220	0.341	0.148	0.483	1.000	0.284	0.506
	(0.308)	(0.059)	(0.896)	(0.141)	(0.020)	(0.351)	(0.000)	–	(0.179)	(0.000)
	41	46	46	46	46	42	52	–	24	103
POOL_INV	0.0064	0.326	−0.115	0.045	0.143	−0.028	0.420	0.289	1.000	0.152
	(0.977)	(0.120)	(0.594)	(0.836)	(0.505)	(0.896)	(0.041)	(0.171)	–	(0.478)
	23	24	24	24	24	24	24	24	–	24
Dissemination of information										
MEDIA	0.503	0.541	0.173	−0.020	0.390	0.564	0.547	0.503	0.030	1.000
	(0.001)	(0.000)	(0.255)	(0.898)	(0.008)	(0.000)	(0.000)	(0.000)	(0.888)	–
	40	45	45	45	45	41	51	103	24	–

All variables are as defined in appendix A. In panel B, Pearson (Spearman) correlations are presented above (below) the diagonal of the matrix. Two-tailed *p*-values are presented in parentheses.

also is positively correlated with information dissemination by media reporters as measured by *MEDIA* ($r \approx .53$, $p = .001$). Finally, information dissemination as measured by *MEDIA* is positively correlated with some aspects of the quality of financial reporting, including financial disclosure intensity as measured by *CIFAR* and *DISCL* ($rs \approx .41$ and.46, $ps \approx .01$ and .001, respectively), the timeliness of financial disclosures as measured by *TIME* ($r \approx .40$, $p \approx .007$), and audit quality of financial disclosures as measured by *AUDIT* ($r \approx .54$, $p < .001$). In contrast to the significant and positive pairwise correlations between the quality of financial reporting and both analyst following and per capita media penetration, governance disclosures as measured by *GOVERN* are not significantly correlated with either analyst following or per capita media penetration.

Together, these univariate relations highlight the varying degrees to which dimensions of corporate transparency move together. We explore these relations further with factor analysis.

3.2 FACTOR ANALYSIS

We employ factor analysis using maximum likelihood estimation procedures. To implement this analysis, we retain 6 of the 10 individual measures of countries' firm-specific information environments. First, we retain our 4 self-constructed variables reflecting elements of each country's corporate reporting environment: the intensity of financial disclosures (*DISCL*), the measure of financial disclosures (*MEASURE*), the timeliness of financial disclosures (*TIME*), and the intensity of governance disclosures (*GOVERN*). Second, we retain analyst coverage (*NANALYST*) to reflect cross-country differences in private information acquisition activities. Finally, we retain media development (*MEDIA*) to proxy for the intensity of information dissemination in a country. Measures were not excluded because they loaded on an outlaw factor or in any way changed the main results of the paper. The reduction in variables was determined ex ante based on the pragmatic econometric considerations discussed next. Section 6 reports sensitivity checks of the factor analysis.

The reduction from 10 measures to the 6 we retain for the factor analysis is designed to maximize sample size and degrees of freedom. In this regard, we eliminate *AUDIT* and *POOL_INV*. Including audit quality and pooled investment schemes would reduce the sample by 4 and 20 observations, respectively, leading to their elimination. We also eliminate insider trading enforcement because it is a dummy variable correlated with analyst coverage (Pearson correlation = 0.482). We retained the continuous analyst coverage variable as our proxy for private information acquisition activities because it possesses greater variation across our countries.

Finally, we exclude *CIFAR*. *CIFAR* is a composite measure aggregating a wide range of data. Instead of using this aggregate metric, we include our corporate reporting variables (*DISCL, GOVERN, MEASURE,* and *TIME*), which constitute distinct (and interpretable) subsets of *CIFAR* focused on specific aspects of financial or governance disclosures.

TABLE 2
Factor Analysis of Transparency Measures

	Factor Pattern		Factor Pattern: Varimax Rotation	
	Factor 1	Factor 2	Factor 1 (Financial)	Factor 2 (Governance)
DISCL	0.823	−0.026	0.611	0.553
GOVERN	0.612	−0.600	0.079	0.854
MEASURE	0.118	−0.072	0.043	0.131
TIME	0.611	0.197	0.593	0.245
NANALYST	0.709	0.399	0.799	0.154
MEDIA	0.563	0.394	0.684	0.064
Eigenvalue	6.2593	2.1949	–	–

This table presents factor patterns generated by a maximum likelihood factor analysis of the six variables representing our three primary dimensions of corporate transparency: corporate reporting environment (*DISCL, GOVERN, MEASURE* and *TIME*), private information acquisition (*NANALYST*), and dissemination of information (*MEDIA*). The first set of columns presents the raw factor patterns; the second set of columns presents factor patterns after a varimax rotation of the factors. All variables are defined in appendix A ($N = 45$).

Table 2 presents the results of our factor analysis. The goal of factor analysis is to identify commonalties, or factors, underlying our measures of corporate reporting, analyst coverage, and media penetration. These factors are unobservable but manifest themselves through these observable outcomes. Using a criterion of retaining factors with eigenvalues greater than 1, the analysis reveals two factors. The coefficients associated with these raw factor patterns are presented in the first two columns of the table. To clarify our interpretation of these factors, we rotate the factors using varimax rotation techniques. Factor patterns after rotation are presented in the last two columns of table 2.

Focusing first on factor 1 (after rotation), note that it depends heavily on *DISCL, TIME, NANALYST,* and *MEDIA,* whereas *GOVERN* and *MEASURE* appear relatively unimportant. Hence, this factor captures substantial commonalities among the intensity and timeliness of financial disclosures by firms, analyst following, and media penetration. This clustering is intuitive, as analysts and media reporters often rely heavily on public financial information to produce their products (e.g., financial modeling, stock recommendations, news stories). Historically, analysts' reports have focused on firms' financial investments and outcomes, as opposed to governance data (such as executive pay packages, director remuneration, board composition, and equity ownership structure). We label factor 1 *financial transparency* and interpret it as a relative measure of the availability of financial information to those outside the firm due to the disclosure, interpretation, and dissemination of financial information by firms, financial analysts, and media reporters.

In contrast, the second factor depends most heavily on governance disclosures (*GOVERN*), which aggregate the identity and shareholdings of officers, directors, and other major shareholders, and the remuneration of officers and directors. To a lesser, but nevertheless substantial, extent the

second factor also depends on the intensity of financial disclosures as measured by *DISCL* (i.e., line of business and geographic segments, R&D, capital expenditures, accounting policies, and subsidiaries) and the timeliness of financial disclosures. Hence, factor 2 reflects information on who is governing the firm, how their incentives are structured, and how and where the managers have invested the firms' financial resources. We label factor 2 *governance transparency* and interpret it as a relative measure of the availability of information for outside investors to hold officers and directors accountable.

4. Relation Between Corporate Transparency and Legal/Judicial Regimes and Political Economy

4.1 PREDICTIONS AND MEASURES

Existing theories are incomplete with respect to how the components of our transparency factors will vary with political and legal/judicial regimes. As a result, definitive directional predictions are difficult. In the following discussion, we illustrate a variety of potential connections between corporate transparency and political and legal/judicial systems, and refrain from making directional predictions in some cases. Detailed descriptions of all variables and their sources are included in appendix A.

4.1.1. Legal/Judicial Regime. Theorists have long recognized the crucial role of high-quality, verifiable information in optimal contract design. Models of principal-agent relationships generally assume the pre-existence of a court system that can freely enforce contracts written on verifiable information variables (e.g., Holmstrom [1979]). Financial accounting and auditing systems, by emphasizing verifiable outcomes, supply a rich set of contractible variables that can support a wide range of contractual arrangements. To the extent that contracting parties do not have access to private information, the enforceability of contracts implies a higher demand for corporate transparency by outside contracting parties.

One important class of contracts is with suppliers of external capital. Prior evidence suggests that legal protection of outside investors' rights and enforcement of those rights vary around the world (see LaPorta et al. [1998]). We expect outside investors' demand for financial and governance transparency to increase with the protection of their rights. In addition, the propensity of policy makers to mandate and enforce transparent corporate reporting is expected to be high in regimes where investors' rights are protected.

In the absence of a viable judicial system for enforcing contracts, alternative relationship-based arrangements and private enforcement mechanisms arise, which may be less reliant on public information (e.g., Dixit [2003], Anderson and Bandiera [2001]). As documented in Johnson, McMillan, and Woodruff [2002] and McMillan and Woodruff [1999], the lack of effective courts has a fundamental impact on the nature of contracts and business

relationships. For example, they document that where legal institutions are weak, bilateral relationships can substitute for courts, and firms become less likely to seek out new trading partners.[12]

We explore the relation between corporate transparency and three aspects of the legal/judicial regime: legal origin, efficiency of the judicial system, and the extent of patent protection. Beginning with legal origin, prior evidence documents that common law countries generally have the strongest legal protection of outside investors, whereas French civil law countries have the weakest, with German and Scandinavian civil law countries in between (see LaPorta et al. [1998]). Hence, the preceding arguments suggest that corporate transparency will be highest in common law countries, lowest in French civil law countries, and in between in German and Scandinavian civil law countries (see also the discussion in Mueller, Gernon, and Meeks [1997, chap. 1]). Consistent with this prediction, prior evidence suggests that financial reporting is more transparent in countries with a common law (vs. civil law) legal tradition (e.g., Ball, Kothari, and Robin [2000], Ball, Robin, and Wu [2002], Guenther and Young [2000], Jaggi and Low [2000], Francis, Khurana, and Pereira [2003]).

The economics literature offers at least two reasons common law countries provide stronger protection of outside investors' rights (e.g., Beck, Demirguc-Kunt, and Levine [2002]). First, legal traditions differ in the priority given to the rights of individuals vis-à-vis the state. Under this theory, the decentralized nature of English common law evolved to generally protect property rights of individuals. Second, legal traditions may differ in their ability to adapt quickly to changing circumstances and minimize gaps between contracting needs and the legal system's capabilities.

We classify countries as having a British, French, German, or Scandinavian legal origin. We also use a dummy variable, *CIVILLAW,* which equals 1 for French, German, or Scandinavian legal origin, and 0 otherwise.

The preceding arguments suggest that corporate transparency will be higher in regimes with efficient judicial systems. We include a direct measure of the efficiency of the judicial system. This measure has a scale between 0 and 10, with lower scores implying lower efficiency levels. We use the average between 1980 and 1993.

Our final measure of the legal regime is patent protection. We think the most likely connection between corporate transparency and patent protection is through the reduction of firms' proprietary costs of revealing their profit opportunities to competitors.[13] This argument suggests a positive relation between corporate transparency and the strength of a regime's

[12] For example, McMillan and Woodruff [1999] document that in Vietnam, which lacks effective laws and courts, contracting rests in part on the threat of loss of future business, but that retaliation is not as forceful as in the standard repeated-game story. To ensure agreements are kept, firms rely on other devices to supplement repeated-game incentives, and transactions with greater risk of reneging use more elaborate governance structures.

[13] Disclosure theories predict that proprietary costs play a central role in suppressing disclosures by firms. See Verrecchia [2001] for a recent review of this literature.

patent protection through greater voluntary disclosure. However, it is possible that regimes that encourage greater expropriation by competitors through weaker patent protection will further facilitate such expropriation by mandating greater corporate transparency.[14] Each country's patent system is scored from 0 to 5, where higher values indicate stronger levels of protection.

4.1.2. Political Economy. There are two broad views of the government's participation in financial markets. First, political theories of North [1990] and Olson [1993] and others generally contend that those in power shape policy to stay in power and amass wealth. In this view, governments acquire control of enterprises and banks to provide employment, subsidies, and other benefits to supporters, who in return provide votes, political contributions, and bribes (e.g., see LaPorta, Lopez-de-Silanes, and Shleifer [2002], Shleifer and Vishny [1994]). Here, powerful, centralized, closed governments constrain financial development to maintain power and capture wealth, and politically connected interest groups may thwart financial development to maintain their economic advantage by suppressing competition. The second, more benevolent view of government is illustrated by Gerschenkron [1962], who argues that in some cases economic institutions were not sufficiently developed for private banks to play a crucial development role, and he advocated state ownership of banks in these cases. Others, as part of the broader debate over capitalism, socialism, and the role of planning in a market economy, advocate government ownership of firms to deal with market imperfections, such as monopoly power or externalities (see Shleifer [1998] for a discussion of these issues and an extensive reference list).

There is a more recent literature that examines the role of political structure in the financial development of economies (e.g., Beck, Demirguc-Kunt, and Levine [2001], Rajan and Zingales [2003]). We extend this literature by examining the relation between a country's political economy and corporate transparency. We examine five measures of political economy: concentration of political power (autocracy), extent of state ownership of enterprise, costs of entry imposed on start-up firms, extent of state ownership of banks, and risk of expropriation by the state. Detailed descriptions of all variables and their sources are in appendix A.

We capture the concentration of political power using the measure *AUTOCRACY.* We average autocracy between years 1960 and 1994, with higher values indicating a more autocratic state. According to Marshall and Jaggers [2000], this autocracy measure is defined in terms of a distinctive set of political characteristics. In particular, autocracies sharply restrict or suppress competitive political participation, their chief executives are chosen in a regularized process of selection within the political elite, once in office they exercise power with few institutional constraints, and autocracies exercise

[14] We thank Ray Ball, Phil Berger, and Richard Leftwich for raising this possibility.

a high degree of directiveness over social and economic activity. Djankov et al. [2003b] find that government control of the media (associated with less freedom of the press) is higher in countries with autocratic political regimes. However, we are unaware of developed theories to enable clean directional predictions connecting corporate transparency to autocracy. Nevertheless, given a propensity for autocratic regimes to limit the freedom of the press, it is interesting to investigate whether autocratic regimes similarly suppress corporate transparency.

Turning to consideration of direct political involvement in the economy, we consider the extent of state ownership of enterprises, state ownership of banks, costs imposed on start-up firms, and the risk of expropriation of firms' wealth by the state. Collectively, there are at least three ways such political involvement in the economy can affect transparency.

First, states that directly own economic enterprises may suppress firm-specific information to hide expropriation activities by politicians and their cronies. It also is possible that a benevolent government uses its state ownership of enterprise to directly govern and manage firms, obviating the need for public information.[15] These arguments imply a negative relation between corporate transparency and the extent of state-owned enterprises. The measure used is the share of country-level output supplied by state-owned enterprises (*SOE*), where countries with more *SOE* investment receive higher ratings. The variable is the average of 1990 and 1995 share of ownership.

The second means of exploitation does not involve direct state ownership of the factors of production. Instead, politicians exploit their control over banks and regulatory policies to favor cronies in return for bribes, nepotism, political support, and such. We consider two forms of this potential exploitation. First, politicians may exploit state ownership of banks to supply cronies with preferential financing. Second, politicians may exploit regulatory powers to impose entry costs on start-up firms to benefit politically connected incumbents by shielding their economic rents from competition.[16] Politicians may thus seek to restrict the flow of information to prevent public scrutiny of their business dealings with cronies and to protect their economic interests by suppressing information flows to potential entrants. To this end, the government can promulgate weak accounting and disclosure requirements, weakly enforce existing disclosure requirements, or use influence over the media to retard dissemination of firm-specific information in the economy.

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[15] We thank the referee for bringing this alternative to our attention. See Shleifer and Vishny [1994] for a conceptual discussion of these two possibilities.

[16] Fisman [2001] documents the significant value that can accrue to a politically connected elite in an economy with significant concentration of political power. He uses the Jakarta Stock Exchange's reaction to news about former President Suharto's health to get at the value of political connections. He infers a market valuation of the proportion of a firm's value derived by political connections. The value of political connections can account for as much as a quarter of a firm's share price.

However, the implications of these political connections for voluntary disclosure are unclear because of the potentially opposing effects of these connections on two types of proprietary costs: (1) competitive proprietary costs (i.e., revealing information to competitors) and (2) proprietary costs due to public exposure of cronyism. Advantages gained over competitors through high start-up costs and preferential access to state-owned bank financing reduce the competitive costs of disclosure. In contrast, the costs of public disclosure of cronyism increase in the extent of political connections (Leuz and Oberholzer-Gee [2003]).

We measure state ownership of banks (*ST_BANK*) as the share of the assets of the top 10 banks in a given country owned by the government of that country in 1995. We measure the costs imposed on entrants (*COST_ENTRY*) by a combination of three variables drawn from Djankov et al. [2002]: number of procedures, amount of time, and direct financial expenditure (as a fraction of GDP per capita) required to obtain a business permit. It is a measure of direct barriers to entry erected by the government. In light of the potentially opposing forces discussed earlier, we refrain from making directional predictions concerning the relation between corporate transparency and *ST_BANK* and *COST_ENTRY*.

The third means of exploitation is direct expropriation of firms' assets and profits by the state. As argued by Watts and Zimmerman [1986], transparency with respect to profitability can elicit scrutiny by politicians and the assessment of windfall profit taxes or other forms of government expropriation of a firm's wealth. When governments exhibit a high propensity to expropriate wealth from firms, it creates incentives for highly profitable firms to limit the disclosure and dissemination of firm-specific financial information to hide the existence of wealth from the government. At the same time, however, relatively unprofitable firms may have incentives to voluntarily disclose more to keep the government away. Furthermore, governments with a propensity to expropriate may attempt to mandate higher corporate transparency to aid them in identifying assets to expropriate. Given these competing forces, we are unable to make directional predictions concerning the relation between corporate transparency and the risk of expropriation. We measure the risk of outright confiscation of firms' wealth or forced nationalization by the state with the variable *LRISK_EX,* whereby high levels of this variable represent relatively low risk of expropriation.

4.2 DESCRIPTIVE STATISTICS: EXPLANATORY VARIABLES FOR TRANSPARENCY

Table 3 presents descriptive statistics for our proxies for legal/judicial regimes and political economy. Table 3, panel B reports the correlation matrix of political economy and legal regime variables. First, with respect to legal regime variables, we see that *PATENT* and *EFF_JUD* are correlated (Pearson correlation = .566), whereas both are unrelated to legal origin as measured by *CIVILLAW*. The political variables are generally correlated, ranging from a high correlation of .565 (Pearson) between *SOE*

TABLE 3

Political Economy and Legal/Judicial Regime Variables

Panel A: Descriptive statistics

Description	Variable	*N*	Mean	Std. Dev.	Median	Minimum	Maximum
Per capita GNP	log(*GNP*)	180	7.01	1.58	7.35	4.70	10.71
Legal/judicial regimes							
Legal origin	*CIVILLAW*	49	0.633	0.487	1.00	0.00	1.00
Protect patent rights	*PATENT*	57	2.817	1.01	2.90	0	4.86
Effect of judicial system	*EFF_JUD*	49	7.67	2.05	7.25	2.50	10.00
Political economy							
Autocracy	*AUTOCRACY*	163	3.90	3.06	4.34	0.00	10.00
State-owned enterprises	*SOE*	124	6.39	3.00	6.50	0.00	10.00
Cost of entry	*COST_ENTRY*	76	0.00	1.51	0.11	−5.22	2.50
State-owned banks	*ST_BANK*	87	0.39	0.30	0.32	0.00	1.00
Low risk of expropriation	*LRISK_EX*	49	8.05	1.59	8.25	5.22	9.98

TABLE 3— *Continued*

Panel B: Correlation matrix of political and legal/judicial regime variables

	CIVILLAW	*PATENT*	*EFF_JUD*	*AUTOCRACY*	*SOE*	*COST_ENTRY*	*ST_BANK*	*LRISK_EX*	log(*GNP*)
CIVILLAW	1.000	0.032	−0.183	0.145	−0.024	0.489	0.235	0.067	0.221
	–	(0.849)	(0.209)	(0.325)	(0.867)	(0.000)	(0.104)	(0.648)	(0.128)
PATENT	0.073	1.000	0.566	−0.589	−0.428	−0.496	−0.469	0.716	0.780
	(0.663)	–	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)
EFF_JUD	−0.200	0.609	1.000	−0.237	−0.237	−0.539	−0.382	0.656	0.643
	(0.168)	(0.000)	–	(0.101)	(0.101)	(0.000)	(0.007)	(0.000)	(0.000)
AUTOCRACY	0.143	−0.615	−0.296	1.000	0.426	0.356	0.283	−0.416	−0.587
	(0.333)	(0.000)	(0.039)	–	(0.000)	(0.003)	(0.008)	(0.003)	(0.000)
SOE	0.033	−0.427	−0.296	0.410	1.000	0.356	0.565	−0.416	−0.587
	(0.821)	(0.001)	(0.039)	(0.000)	–	(0.003)	(0.000)	(0.003)	(0.000)
COST_ENTRY	0.551	−0.471	−0.553	0.269	0.269	1.000	0.329	−0.502	−0.488
	(0.000)	(0.001)	(0.000)	(0.025)	(0.025)	–	(0.007)	(0.000)	(0.000)
ST_BANK	0.327	−0.484	−0.421	0.289	0.570	0.301	1.000	−0.444	−0.437
	(0.022)	(0.000)	(0.003)	(0.007)	(0.000)	(0.014)	–	(0.001)	(0.000)
LRISK_EX	0.058	0.706	0.682	−0.509	−0.409	−0.436	−0.453	1.000	0.880
	(0.690)	(0.000)	(0.000)	(0.004)	(0.004)	(0.002)	(0.001)	–	(0.000)
log(*GNP*)	0.183	0.788	0.712	−0.582	−0.582	−0.398	−0.431	0.877	1.000
	(0.209)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	–

Panel C: Correlation matrix of transparency and political economy and legal/judicial regime variables

	Legal/Judicial Regime				Political Economy				
	CIVILLAW	*PATENT*	*EFF_JUD*	*AUTOCRACY*	*SOE*	*COST_ENTRY*	*ST_BANKS*	*LRISK_EX*	log(*GNP*)
Pearson correlations									
FACTOR1	0.196	0.606	0.548	−0.436	−0.564	−0.331	−0.514	0.799	0.780
(Financial)	(0.198)	(0.000)	(0.000)	(0.003)	(0.000)	(0.028)	(0.000)	(0.000)	(0.000)
FACTOR2	−0.519	0.215	0.456	−0.186	−0.049	−0.403	−0.402	0.258	0.046
(Governance)	(0.000)	(0.222)	(0.002)	(0.226)	(0.747)	(0.007)	(0.007)	(0.091)	(0.762)
Spearman correlations									
FACTOR1	0.185	0.625	0.569	−0.510	−0.459	−0.262	−0.482	0.787	0.751
(Financial)	(0.224)	(0.000)	(0.000)	(0.000)	(0.002)	(0.085)	(0.001)	(0.000)	(0.000)
FACTOR2	−0.538	0.258	0.491	−0.220	−0.077	−0.568	−0.430	0.265	0.116
(Governance)	(0.000)	(0.141)	(0.001)	(0.151)	(0.615)	(0.000)	(0.004)	(0.082)	(0.448)

In panel B, Pearson (Spearman) correlations are presented above (below) the diagonal of the matrix. Two-tailed *p*-values are presented in parentheses. All variables are as defined in appendix A.

and *ST_BANK* to a low of .283 between *AUTOCRACY* and *ST_BANK*. Although the political variables are not significantly correlated with *CIVILLAW* (except *COST_ENTRY,* Pearson correlation = .489), there are significant correlations with the other legal variables, ranging from a high of .716 between *PATENT* and *LRISK_EX* to a low (absolute value) of −.237 between *EFF_JUD* and *SOE*. Thus, as is common in other cross-country research, multicollinearity poses a hurdle to isolating the relative strength of individual explanatory variables.

Table 3, panel C presents univariate correlations of our two transparency factors with the legal and political variables. These correlations provide suggestive evidence that our two dimensions of corporate transparency are not largely driven by common country-level factors.

Financial transparency is not significantly correlated with *CIVILLAW,* whereas governance transparency is significantly lower in civil law countries (Pearson correlation = −.519, Spearman correlation = −.538). Financial transparency is negatively correlated with *AUTOCRACY* and *SOE* (Pearson correlation = −.436 and −.564, respectively), whereas governance transparency is not significantly correlated with these two political variables. In addition, financial transparency, but not governance transparency, is positively correlated with *PATENT* (consistent with a proprietary cost of firm-specific financial information interpretation). Although both financial and governance transparency are positively correlated with *LRISK_EX,* the size of the coefficient is larger and the *p*-value more significant for financial relative to governance transparency. Finally, financial transparency, but not governance transparency, is positively correlated with per capita wealth, log(*GNP*) (Pearson correlation = .780). We turn next to multivariate analysis of these relations.

4.3 CROSS-COUNTRY REGRESSION RESULTS

Table 4, panel A explores the relation between our two transparency factors and legal origin before and after controlling for gross national product (GNP) per capita.[17] Following LaPorta et al. [1998], each country's legal origin is classified into one of four categories: British, French, German, or Scandinavian. The regression uses Scandinavian legal origin as the base category; therefore, three binary indicator variables are included for the British, French, and German legal origins. The *p*-value associated with each regression coefficient represents the two-tailed probability level for the difference in the transparency measure from that in countries with a Scandinavian legal origin. The superscripts B, F, and G (b, f, and g) denote that a given estimated coefficient is significantly different from the British, French, and German coefficient, respectively, at the 95% (90%) confidence level (two-tailed). Several results emerge.

First, the *F*-test for inclusion of the three legal origin indicator variables is statistically significant for the governance factor but not for the financial

[17] Hereafter, we use GNP to refer to GNP per capita.

TABLE 4

Relation Between Corporate Transparency Factors and Political Economy and Legal/Judicial Regime Variables

Panel A: Relation between corporate transparency factors and legal origin

Model: $FACTOR1_i$ or $FACTOR2_i = \alpha + \beta_1 \log(GNP_i) + \beta_2 BRITISH_i + \beta_3 FRENCH_i + \beta_4 GERMAN_i + \varepsilon_i$,

	log(*GNP*)	*BRITISH*	*FRENCH*	*GERMAN*	*F*-test	Adj. R^2	Observations
FACTOR1	–	−0.738	−0.574	−0.026	1.39	0.026	45
(Financial)	–	(0.135)	(0.242)	(0.965)	(0.259)		
	0.489	0.187	0.078	−0.016	0.21	0.576	45
	(0.000)	(0.586)	(0.816)	(0.967)	(0.891)		
FACTOR2	–	-0.023^{F}	$-1.258^{B,G}$	-0.531^{F}	11.40	0.415	45
(Governance)	–	(0.952)	(0.002)	(0.243)	(0.000)		
	0.064	$0.100^{F,g}$	$-1.172^{B,g}$	$-0.530^{b,f}$	11.50	0.411	45
	(0.407)	(0.803)	(0.004)	(0.245)	(0.000)		

TABLE 4— *Continued*

Panel B: Relation between corporate transparency factors and political economy and legal/judicial regimes

Patent rights model: $FACTOR1 \text{ or } FACTOR2 = \alpha + \beta_1 \log(GNP) + \beta_2 CIVILLAW + \beta_3 PATENT + \varepsilon.$

Full estimation model: $FACTOR1 \text{ or } FACTOR2 = \alpha + \beta_1 \log(GNP) + \beta_2 CIVILLAW + \beta_3 EFF\_JUD + \beta_4 AUTOCRACY + \beta_5 SOE + \beta_6 COST\_ENTRY + \beta_7 ST\_BANK + \beta_8 LRISK\_EX + \varepsilon,$

		Legal/Judicial Regime				Political Economy					
	log(*GNP*)	*CIVILLAW*	*PATENT*	*EFF_JUD*	*AUTOCRACY*	*SOE*	*COST_ENTRY*	*ST_BANK*	*LRISK_EX*		
Predict:	–	–	?	+	?	–	?	?	?	Adj. R^2	*N*
Dependent variable: *FACTOR1* (financial)											
	–	0.122	0.692	–	–	–	–	–	–	0.332	34
	–	(0.642)	(0.000)	–	–	–	–	–	–		
	0.509	−0.115	0.036	–	–	–	–	–	–	0.646	34
	(0.000)	(0.562)	(0.838)	–	–	–	–	–	–		
	0.279	0.004	–	−0.006	0.075	–	–	–	0.283	0.667	43
	(0.042)	(0.983)	–	(0.924)	(0.265)	–	–	–	(0.026)		
	0.155	0.066	–	−0.011	–	−0.078	–	–	0.274	0.695	44
	(0.275)	(0.728)	–	(0.856)	–	(0.037)	–	–	(0.016)		
	0.310	−0.017	–	−0.033	–	–	−0.009	–	0.222	0.657	44
	(0.020)	(0.940)	–	(0.611)	–	–	(0.902)	–	(0.058)		
	0.275	0.084	–	−0.022	–	–	–	−0.681	0.191	0.686	44
	(0.031)	(0.671)	–	(0.714)	–	–	–	(0.068)	(0.089)		

Dependent variable: *FACTOR2* (governance)										
–	−0.898	0.328	–	–	–	–	–	–	0.334	34
–	(0.000)	(0.030)	–	–	–	–	–	–		
0.006	−0.900	0.321	–	–	–	–	–	–	0.312	34
(0.960)	(0.001)	(0.131)	–	–	–	–	–	–		
−0.194	−0.699	–	0.201	0.083	–	–	–	0.213	0.369	43
(0.284)	(0.013)	–	(0.032)	(0.353)	–	–	–	(0.201)		
−0.244	−0.664	–	0.175	–	−0.027	–	–	0.193	0.366	44
(0.220)	(0.017)	–	(0.042)	–	(0.591)	–	–	(0.215)		
−0.181	−0.760	–	0.174	–	–	0.035	–	0.182	0.364	44
(0.290)	(0.017)	–	(0.045)	–	–	(0.709)	–	(0.234)		
−0.236	−0.553	–	0.180	–	–	–	−0.851	0.134	0.410	44
(0.159)	(0.041)	–	(0.030)	–	–	–	(0.087)	(0.366)		

The variables are defined in appendix A. Two-tailed *p*-values are presented in parentheses. In panel A, superscripts B, F, and G (b, f, and g) denote that the coefficient estimate is significantly different from the British, French, or German coefficient estimate, respectively, at the 95% (90%) confidence level. The base group consists of countries with Scandinavian legal origin.

transparency factor. Second, governance transparency is ranked British > German > French, and differences across regimes are statistically significant. It is interesting that the ordering of governance transparency relative to legal origin is consistent with the ordering of investor protections relative to legal origin documented in LaPorta et al. [1998], who also ranked British > German > French. Similarly, LaPorta et al. document that Scandinavian civil law countries rank between British and French legal origins with respect to investor protections, whereas we find that Scandinavian civil law countries rank higher than French civil law countries with respect to governance transparency and find no significant differences between British or German legal origins and Scandinavian legal origin. Last, note again that the level of financial, but not governance transparency, is significantly and positively associated with GNP. Panel B extends this analysis.

Table 4, panel B reports results of regressing our two transparency factors against the variables capturing legal/judicial regimes and political economy. In addition to the full models, we report results for two limited models that only include our measure of patent protection along with legal origin and GNP. We exclude patent protection from the full models because of the relatively small number of countries for which we have these data. To conserve degrees of freedom, we replace the three indicator variables for legal origin by *CIVILLAW,* equal to 1 if the country has a French, German, or Scandinavian legal tradition, and 0 otherwise.

We expect GNP to be a function of the political, legal, and judicial systems in place as well as a function of the information environment. For example, autocratic political regimes that suppress information flow are less likely to be associated with the efficient resource allocation. Inclusion of GNP as a control variable, therefore, may disguise the hypothesized relations between our transparency measures and the underlying political, legal, and judicial systems. Nevertheless, we think it is useful to consider the robustness of the results with respect to the addition of GNP to control for the general level of countries' economic development. Our main results basically get stronger if we exclude GNP.

Table 4, panel B documents that financial transparency is not significantly related to legal origin or efficiency of the judicial system but is significantly related to three of the five political economy variables: state-owned enterprises, state-owned banks, and low risk of expropriation.[18] Financial transparency is significantly lower when the extent of state ownership of enterprises and banks is higher and significantly higher when the risk of expropriation by the state is lower. The positive association with low risk of expropriation is consistent with the political cost theory of Watts and

[18] A related result is documented by Khanna, Palepu, and Srinivasan [2003]. Using transparency and disclosure scores from Standard & Poor's, they document that a composite measure of disclosure (combining financial and governance disclosures) is positively related to common law legal origin, whereas a measure of financial disclosure quality is unrelated to legal origin.

Zimmerman [1986], but given our inability to measure separately mandatory and voluntary disclosure, we leave the interpretation open. In fact, what is probably most interesting here is not the interpretation placed on any single significant coefficient but rather the differential results obtained when regressing these same variables against the governance transparency factor.

In contrast to financial transparency, the results in table 4, panel B reveal that the governance transparency factor is significantly and positively related to judicial efficiency and is significantly lower in civil law countries. This result is consistent with stronger judicial efficiency, investor protections, and property rights, and a potentially more adaptable legal system increasing the availability of firm-specific information that enhances the accountability of those governing the firm. Also in contrast to financial transparency, governance transparency is not significantly related to any of the political variables, with the exception of state-owned banks.[19] We explore this last relation further in section 4.4 by including a variable capturing the relative importance of bank financing to equity financing across countries.

Overall, the results in table 4 suggest that governance transparency is more robustly related to the legal/judicial regime, whereas in contrast, financial transparency appears more robustly associated with political variables, including risk of expropriation. In the next section, we document that the results in table 4 are generally robust to the inclusion of several additional institutional variables. We include additional variables to examine the potential role of banks versus markets in monitoring managers, the direct effects of investor protections, the monitoring role of concentrated shareholdings, the role of foreign direct investment, and the differences in firm size across countries. We also check the sensitivity of our results to whether a country has liberalized its capital market.

4.4 INCLUSION OF OTHER EXPLANATORY VARIABLES

We examine six additional explanatory variables: (1) the ratio of deposit money bank assets to stock market capitalization in 1995 to measure the importance of banks relative to the stock market financing (*BNK_MKT*) (from Beck, Demirguc-Kunt, and Levine [1999]); (2) an index of the strength of anti-director rights (*RIGHTS*) (from LaPorta et al. [1998]); (3) the average percentage of common shares owned by the three largest shareholders in the 10 largest nonfinancial, non-state-owned domestic firms in a given country (from LaPorta et al. [1998]); (4) an indicator variable equal to 1 if a country's capital markets were liberalized before 1994, and 0 otherwise (*LIBERAL*) (from Bekaert, Harvey, and Lundblad [2002]); (5) the amount of foreign direct investment in a country during calendar year 1995, scaled by the country's GDP; and (6) the log of the average market capitalization of the 30 largest firms in a country measured at the end of fiscal year 1996 in $US (millions) (from Chang, Khanna, and Palepu [2000]).

[19] Both financial transparency and the governance transparency factor are significantly and positively related to patent protection before controlling for GNP, and insignificant after.

Table 5, panel A presents descriptive statistics on these variables, and panel B presents an expanded correlation matrix. Table 6 reports regressions including these additional variables. Because of our small sample size we retain only three of the five political variables, dropping autocracy and cost of entry, and add the six additional variables individually to the baseline models. These tests indicate that the general pattern of relations between our two transparency factors and proxies for the legal/judicial regime and political economy are not altered by the inclusion of these variables.

Table 6, panel A reveals several relations concerning the importance of bank relative to market financing (*BNK_MKT*). First, economies with high bank relative to market financing are associated with lower governance transparency, consistent with a limited role for monitoring by outside investors in bank-centric settings. Second, the extent of state ownership of banks becomes insignificant in the governance transparency regression when *BNK_MKT* is added. Thus, the result that state ownership of banks has a negative and significant coefficient in the governance transparency regression in table 4, panel B appears to reflect that state-owned banks capture the general importance of banking in the economy (recall from table 5, corr(*BNK_MKT, ST_BANK*) = .351, p equals; .02). Last, the relations between governance transparency and both legal origin and efficiency of the judicial system are unaffected by the inclusion of *BNK_MKT* in the model. This emphasizes the positive relation between the availability of firm-specific information that enhances the accountability of those governing the firm and the legal/judicial regime, even after controlling for the relative importance of bank financing in the economy.

In table 6, panel F we include the variable *FIRMSIZE,* which represents the average market capitalization of the largest 30 companies in each country. More firm-specific information is likely to be available for large firms, as documented in the United States. For example, in the United States, analyst following is documented to be higher for large firms. We add *FIRMSIZE* to the regressions to check the robustness of our results. Table 6, panel F reveals that *FIRMSIZE* is an important variable for financial transparency but not for governance transparency. The coefficient on *FIRMSIZE* is positive and significant in the financial transparency (*FACTOR1*) regressions, and its inclusion significantly increases adjusted R^2. The political variables (state-owned enterprises, state-owned banks, and risk of expropriation) retain their significance after inclusion of *FIRMSIZE*.

Overall, the analysis in table 6 provides additional insight into the nature of financial and governance transparency, and supports our prior findings that governance transparency is robustly related to the legal/judicial regime, and financial transparency is robustly associated with the political economy.

4.5 CROSS-COUNTRY REGRESSION RESULTS FOR INDIVIDUAL ASPECTS OF CORPORATE REPORTING

Table 7 presents regression models for the six individual properties of corporate reporting described in table 1, plus the *CIFAR* aggregate score

TABLE 5

Additional Explanatory Variables

Panel A: Descriptive statistics

Description	Variable	*N*	Mean	Std. Dev.	Median	Minimum	Maximum
Banks vs. markets	*BNK_MKT*	45	0.986	0.569	0.880	0.281	3.315
Anti-director rights	*RIGHTS*	44	2.500	1.229	3.000	0.000	5.000
Ownership structure	*CLOSEHLD*	42	0.459	0.126	0.485	0.180	0.670
Market liberalization	*LIBERAL*	45	0.844	0.367	1.000	0.000	1.000
Foreign direct investment	*FDI*	43	1.990	2.013	1.273	0.001	10.538
Log of average firm size	log(*FIRMSIZE*)	45	7.185	1.614	7.028	3.219	11.075

Panel B: Correlation matrices

	RIGHTS	*CLOSEHLD*	*LIBERAL*	*FDI*	*FIRMSIZE*	*FACTOR1*	*FACTOR2*	log(*GNP*)	*CIVILLAW*	*EFF_JUD*	*SOE*	*ST_BANK*	*LRISK_EX*
Pearson correlations													
BNK_MKT	−0.453	0.135	−0.123	−0.371	−0.184	0.049	−0.451	0.190	0.353	−0.010	0.201	0.351	0.175
	(0.002)	(0.394)	(0.420)	(0.014)	(0.225)	(0.748)	(0.002)	(0.211)	(0.017)	(0.950)	(0.186)	0.020	(0.255)
	44	42	45	43	45	45	45	45	45	44	45	44	44
RIGHTS	1.000	−0.406	−0.026	0.193	0.085	0.035	0.421	−0.071	−0.609	0.127	−0.215	−0.376	−0.063
	–	(0.008)	(0.869)	(0.216)	(0.586)	(0.822)	(0.004)	(0.646)	(0.000)	(0.413)	(0.162)	(0.012)	(0.687)
	–	42	44	43	44	44	44	44	44	44	44	44	44
CLOSEHLD	–	1.000	−0.174	−0.016	−0.384	−0.362	−0.384	−0.327	0.183	−0.434	0.203	0.403	−0.467
	–	–	(0.269)	(0.921)	(0.012)	(0.018)	(0.012)	(0.035)	(0.247)	(0.004)	(0.198)	(0.008)	(0.002)
	–	–	42	41	42	42	42	42	42	42	42	42	42
LIBERAL	–	–	1.000	0.072	0.477	0.445	0.085	0.449	0.275	0.179	−0.290	−0.160	0.494
	–	–	–	(0.648)	(0.001)	(0.002)	(0.557)	(0.002)	(0.067)	(0.245)	(0.053)	(0.299)	(0.001)
	–	–	–	43	45	45	45	45	45	44	45	44	44
FDI	–	–	–	1.000	0.068	0.114	0.412	0.113	−0.212	0.275	−0.271	−0.317	0.103
	–	–	–	–	(0.664)	(0.467)	(0.006)	(0.471)	(0.172)	(0.061)	(0.079)	(0.038)	(0.491)
	–	–	–	–	43	43	43	43	43	43	43	43	43
FIRMSIZE	–	–	–	–	1.000	0.723	0.188	0.528	0.124	0.372	−0.396	−0.374	0.620
	–	–	–	–	–	(0.000)	(0.216)	(0.000)	(0.418)	(0.013)	(0.007)	(0.012)	(0.000)
	–	–	–	–	–	45	45	45	45	44	45	44	44

TABLE 5— *Continued*

	RIGHTS	*CLOSEHLD*	*LIBERAL*	*FDI*	*FIRMSIZE*	*FACTOR1*	*FACTOR2*	log(*GNP*)	*CIVILLAW*	*EFF_JUD*	*SOE*	*ST_BANK*	*LRISK_EX*
Spearman correlations													
BNK_MKT	−0.434	0.007	−0.005	−0.402	−0.125	0.091	−0.206	0.206	0.346	−0.011	0.326	0.366	0.256
	(0.003)	(0.967)	(0.975)	(0.008)	(0.415)	(0.553)	(0.174)	(0.176)	(0.020)	(0.944)	(0.029)	(0.014)	(0.093)
	44	42	45	43	45	45	45	45	45	44	45	44	44
RIGHTS	1.000	−0.365	−0.015	0.291	0.084	0.021	0.409	−0.049	−0.626	0.144	−0.314	−0.483	−0.031
	–	(0.017)	(0.922)	(0.058)	(0.588)	(0.891)	(0.006)	(0.753)	(0.000)	(0.350)	(0.038)	(0.001)	(0.840)
	–	42	44	43	44	44	44	44	44	44	44	44	44
CLOSEHLD	–	1.000	−0.176	−0.099	−0.414	−0.378	−0.396	−0.409	0.196	−0.484	0.246	0.456	−0.521
	–	–	(0.265)	(0.540)	(0.007)	(0.014)	(0.009)	(0.007)	(0.213)	(0.001)	(0.116)	(0.002)	(0.000)
	–	–	42	41	42	42	42	42	42	42	42	42	42
LIBERAL	–	–	1.000	0.096	0.340	0.444	0.000	0.406	0.275	0.187	−0.276	−0.135	0.478
	–	–	–	(0.538)	(0.022)	(0.002)	(1.000)	(0.006)	(0.067)	(0.225)	(0.067)	(0.383)	(0.001)
	–	–	–	43	45	45	45	45	45	44	45	44	44
FDI	–	–	–	1.000	0.054	0.118	0.295	0.058	−0.165	0.324	−0.302	−0.331	−0.014
	–	–	–	–	(0.732)	(0.453)	(0.055)	(0.711)	(0.291)	(0.034)	(0.049)	(0.030)	(0.931)
	–	–	–	–	43	43	43	43	43	43	43	43	43
FIRMSIZE	–	–	–	–	1.000	0.756	0.139	0.471	0.056	0.431	−0.357	−0.499	0.553
	–	–	–	–	–	(0.000)	(0.363)	(0.001)	(0.715)	(0.004)	(0.016)	(0.001)	(0.000)
	–	–	–	–	–	45	45	45	45	44	45	44	44

All variables are defined in appendix A. Two-tailed *p*-values are presented in parentheses.

TABLE 6

Regression Results: Additional Explanatory Variables

Panel A: Banks versus markets

Model: $FACTOR1$ or $FACTOR2 = \alpha + \beta_1 BNK\_MKT + \beta_2 \log(GNP) + \beta_3 EFF\_JUD + \beta_4 CIVILLAW + \beta_5 SOE + \beta_6 ST\_BANK + \beta_7 LRISK\_EX + \varepsilon$

	BNK_MKT	log(*GNP*)	*CIVILLAW*	*EFF_JUD*	*SOE*	*ST_BANK*	*LRISK_EX*	Adj. R^2	Incr. Adj. R^2	*N*
FACTOR1	−0.180	0.194	0.111	−0.022	−0.060	–	0.274	0.6971	0.002	44
	(0.261)	(0.185)	(0.568)	(0.719)	(0.131)	–	(0.016)			
	−0.189	0.290	0.118	−0.031	–	−0.467	0.213	0.6887	0.003	44
	(0.260)	(0.024)	(0.555)	(0.604)	–	(0.258)	(0.062)			
FACTOR2	−0.541	−0.192	−0.456	0.153	–	−0.241	0.197	0.4887	0.079[a]	44
	(0.013)	(0.219)	(0.072)	(0.049)	–	(0.637)	(0.162)			

Panel B: Anti-director rights

Model: $FACTOR1$ or $FACTOR2 = \alpha + \beta_1 ANTI\_RTS + \beta_2 \log(GNP) + \beta_3 CIVILLAW + \beta_4 EFF\_JUD + \beta_5 SOE + \beta_6 ST\_BANK + \beta_7 LRISK\_EX + \varepsilon$

	ANTI_RTS	log(*GNP*)	*CIVILLAW*	*EFF_JUD*	*SOE*	*ST_BANK*	*LRISK_EX*	Adj. R^2	Incr. Adj. R^2	*N*
FACTOR1	0.080	0.136	0.200	−0.012	−0.069	–	0.295	0.6939	−0.001	44
	(0.347)	(0.342)	(0.402)	(0.840)	(0.074)	–	(0.012)			
	0.075	0.246	0.199	−0.023	–	−0.563	0.222	0.6837	−0.002	44
	(0.404)	(0.062)	(0.412)	(0.709)	–	(0.157)	(0.063)			
FACTOR2	0.101	−0.274	−0.397	0.179	–	−0.692	0.176	0.4053	−0.004	44
	(0.398)	(0.116)	(0.222)	(0.031)	–	(0.191)	(0.263)			

TABLE 6— *Continued*

Panel C: Ownership structure

Model: *FACTOR1* or *FACTOR2* = $\alpha + \beta_1 CLOSEHLD + \beta_2 \log(GNP) + \beta_3 CIVILLAW + \beta_4 EFF\_JUD + \beta_5 SOE + \beta_6 ST\_BANK + \beta_7 LRISK\_EX + \varepsilon$

	CLOSEHLD	log(*GNP*)	*CIVILLAW*	*EFF_JUD*	*SOE*	*ST_BANK*	*LRISK_EX*	Adj. R^2	Incr. Adj. R^2	*N*
FACTOR1	−0.279	0.172	0.089	−0.013	−0.077	–	0.243	0.6601	−0.008	42
	(0.713)	(0.263)	(0.655)	(0.838)	(0.046)	–	(0.055)			
	−0.144	0.270	0.090	−0.023	–	−0.655	0.183	0.6462	−0.010	42
	(0.855)	(0.058)	(0.661)	(0.712)	–	(0.106)	(0.141)			
FACTOR2	−0.752	−0.145	−0.521	0.173	–	−0.508	0.025	0.4005	−0.005	42
	(0.406)	(0.361)	(0.032)	(0.021)	–	(0.267)	(0.858)			

Panel D: Market liberalization

Model: *FACTOR1* or *FACTOR2* = $\alpha + \beta_1 LIBERAL + \beta_2 \log(GNP) + \beta_3 CIVILLAW + \beta_4 EFF\_JUD + \beta_5 SOE + \beta_6 ST\_BANK + \beta_7 LRISK\_EX + \varepsilon$

	LIBERAL	log(*GNP*)	*CIVILLAW*	*EFF_JUD*	*SOE*	*ST_BANK*	*LRISK_EX*	Adj. R^2	Incr. Adj. R^2	*N*
FACTOR1	0.091	0.159	0.054	−0.007	−0.076	–	0.258	0.6875	−0.007	44
	(0.720)	(0.270)	(0.784)	(0.913)	(0.045)	–	(0.036)			
	0.172	0.276	0.066	−0.013	–	−0.690	0.163	0.6816	−0.005	44
	(0.501)	(0.032)	(0.744)	(0.829)	–	(0.067)	(0.176)			
FACTOR2	0.441	−0.232	−0.600	0.202	–	−0.874	0.061	0.4213	0.012	44
	(0.191)	(0.161)	(0.028)	(0.017)	–	(0.076)	(0.695)			

Panel E: Foreign direct investment

Model: $FACTOR1$ or $FACTOR2 = \alpha + \beta_1 FDI + \beta_2 \log(GNP) + \beta_3 CIVILLAW + \beta_4 EFF\_JUD + \beta_5 SOE + \beta_6 ST\_BANK + \beta_7 LRISK\_EX + \varepsilon$

	FDI	log(*GNP*)	*CIVILLAW*	*EFF_JUD*	*SOE*	*ST_BANK*	*LRISK_EX*	Adj. R^2	Incr. Adj. R^2	*N*
FACTOR1	0.003	0.145	0.083	−0.015	−0.075	–	0.286	0.6821	−0.009	43
	(0.946)	(0.328)	(0.684)	(0.822)	(0.063)	–	(0.022)			
	0.005	0.256	0.106	−0.027	–	−0.648	0.212	0.6741	−0.009	43
	(0.917)	(0.063)	(0.612)	(0.680)	–	(0.108)	(0.098)			
FACTOR2	0.094	−0.264	−0.517	0.137	–	−0.619	0.200	0.4269	0.026	43
	(0.120)	(0.135)	(0.062)	(0.114)	–	(0.231)	(0.222)			

Panel F: Average market capitalization of listed firms with analyst coverage

Model: $FACTOR1$ or $FACTOR2 = \alpha + \beta_1 \log(FIRMSIZE) + \beta_2 \log(GNP) + \beta_3 CIVILLAW + \beta_4 EFF\_JUD + \beta_5 SOE + \beta_6 ST\_BANK + \beta_7 LRISK\_EX + \varepsilon$

	log(*FIRMSIZE*)	log(*GNP*)	*CIVILLAW*	*EFF_JUD*	*SOE*	*ST_BANK*	*LRISK_EX*	Adj. R^2	Incr. Adj. R^2	*N*
FACTOR1	0.106	0.095	0.069	0.010	−0.058	–	0.211	0.7449	0.050[a]	44
	(0.006)	(0.468)	(0.691)	(0.861)	(0.090)	–	(0.046)			
	0.111	0.177	0.092	0.003	–	−0.559	0.144	0.7438	0.058[a]	44
	(0.004)	(0.133)	(0.606)	(0.953)	–	(0.099)	(0.160)			
FACTOR2	0.038	−0.269	−0.550	0.188	–	−0.809	0.117	0.4018	−0.008	44
	(0.481)	(0.125)	(0.044)	(0.026)	–	(0.107)	(0.435)			

All variables are defined in appendix A. Two-tailed *p*-values are presented in parentheses.

TABLE 7

Regression Results: Individual Properties of Corporate Reporting

Full estimation model: $CT_i = \alpha + \beta_1 \log(GNP) + \beta_2 CIVILLAW + \beta_3 EFF\_JUD + \beta_4 SOE + \beta_5 ST\_BANK + \beta_6 LRISK\_EX + \varepsilon$,

where CT_i represents one specific dimension of corporate transparency (i.e., *CIFAR, DISCL, GOVERN, MEASURE, TIME,* or *AUDIT*) for country *i*. Two-tailed *p*-values are presented in parentheses. All variables are defined in appendix A.

		Legal/Judicial Regime		Political Economy				
		CIVILLAW	*EFF_JUD*	*SOE*	*ST_BANK*	*LRISK_EX*		
Prediction:	log(*GNP*)	–	+	–	?	?	Adj. R^2	*N*
CIFAR	0.770	−5.677	1.968	−0.670	–	−0.729	0.427	41
	(0.672)	(0.024)	(0.012)	(0.161)	–	(0.619)		
	1.203	−4.562	1.901	–	−10.889	−1.417	0.495	41
	(0.429)	(0.056)	(0.009)	–	(0.012)	(0.300)		
DISCL	−4.092	−9.332	2.456	−1.667	–	8.980	0.467	45
	(0.367)	(0.133)	(0.199)	(0.145)	–	(0.014)		
	−2.342	−6.627	2.259	–	−26.904	6.872	0.520	45
	(0.529)	(0.268)	(0.209)	–	(0.013)	(0.038)		
GOVERN	−3.215	−9.437	2.831	−0.408	–	2.407	0.327	45
	(0.307)	(0.031)	(0.036)	(0.602)	–	(0.323)		
	−3.051	−8.016	2.804	–	−10.668	1.767	0.357	45
	(0.253)	(0.064)	(0.032)	–	(0.155)	(0.444)		
MEASURE	17.135	−19.257	0.010	0.974	–	−11.648	0.064	45
	(0.025)	(0.061)	(0.997)	(0.600)	–	(0.048)		
	14.742	−16.890	0.235	–	−5.508	−11.064	0.059	45
	(0.027)	(0.107)	(0.939)	–	(0.760)	(0.054)		
TIME	2.532	−6.848	0.508	−3.283	–	2.050	0.207	45
	(0.699)	(0.441)	(0.853)	(0.050)	–	(0.686)		
	7.048	−4.599	0.034	–	−36.426	−1.597	0.233	45
	(0.211)	(0.606)	(0.990)	–	(0.024)	(0.742)		
AUDIT	0.133	−0.254	0.113	−0.070	–	0.061	0.256	41
	(0.614)	(0.443)	(0.274)	(0.262)	–	(0.779)		
	0.106	0.061	0.109	–	−2.044	−0.014	0.470	41
	(0.601)	(0.832)	(0.207)	–	(0.000)	(0.937)		

as an alternative measure of corporate reporting. This detailed analysis has two purposes. First, it is intended to provide a more textured understanding of factors associated with corporate transparency while highlighting the validity of our interpretation of our two transparency factors. Second, it is intended to provide a deeper understanding of the *CIFAR* score used in prior research. For parsimony, our tables and discussion focus on full model results including *GNP* as a control variable. Estimations excluding *GNP* yield similar inferences with stronger, statistically significant relations.

The first conclusion gleaned from table 7 is that the individual estimations confirm the results using factor analysis. Specifically, table 4 documents that the financial transparency factor is significantly related to the country's political economy and not significantly related to the country's legal/judicial

regime. In contrast, our governance factor is shown to be stronger in countries with strong legal and judicial regimes whereas it is related to only one political economy variable: the presence of state-owned banks.

Consistent with those conclusions, table 7 documents that our primary, self-constructed measure of the intensity of financial disclosures, *DISCL*, is negatively related to state-owned enterprises and state-owned banks and significantly and positively related to a low risk of expropriation by the state. Moreover, *DISCL* is unrelated to our measures of legal/judicial regimes.[20] In contrast, our underlying governance disclosure variable, *GOVERN*, displays a significant and negative relation to our civil legal origin variable and a positive relation to the efficiency of judicial systems. Moreover, *GOVERN* is unrelated to all political economy variables except state-owned banks. Together, the individual estimations using *DISCL* and *GOVERN* generate a pattern of associations and inferences similar to those obtained using our financial and governance transparency factors, respectively, confirming that our primary results in table 4 are not strictly an artifact of the factor analysis methodology.

The second conclusion drawn from table 7 relates to an interpretation of *CIFAR*. Recent research uses *CIFAR* to measure accounting standards in a country (e.g., La Porta et al., [1998], Rajan and Zingales [1998]). Our tests indicate that *CIFAR* behaves less like a measure of financial transparency and more like a measure of governance transparency. Specifically, *CIFAR* is significantly associated with our legal regime variables and displays a significant and negative association with state-owned banks. Thus, the individual *CIFAR* estimations are similar to our baseline governance factor estimations. These similarities have two important implications for current and future research. First, studies relying on *CIFAR* to measure differences in the development of financial reporting regimes across countries may instead be proxying for differences in investor protection, legal regimes, or the level of governance transparency in a country. Second, studies using *CIFAR* need to control carefully for other dimensions of the country's legal and judicial regimes before attributing observed economic effects to better governance-related transparency.

4.6 SENSITIVITY ANALYSIS AND CAVEATS

The preceding regressions are based on a single cross-section and are thus likely to suffer from omitted correlated variables. We attempt to address this issue by exploring the cross-country relation between changes in our individual transparency measures and changes in our political economy and legal regime variables. However, such a change analysis is severely constrained by data availability. As a result of these data constraints, the power of any change analysis is limited both by reduced sample sizes and by the relatively small variation in some explanatory variables. Despite these limitations, we

[20] Untabulated results show that our analyst coverage variable behaves in a fashion similar to *DISCL* with respect to our political economy and legal regime variables.

implemented this specification for completeness. These change estimations yield few insights and are omitted for parsimony.

We verify that the factor analysis and subsequent regressions are robust to several specifications. Specifically, we re-estimate the factors for various perturbations and verify that, in general, the two-factor interpretation survives and all subsequent regression results are qualitatively similar under the perturbation. In this regard, we re-estimate the transparency factors after excluding media and after substituting alternative definitions of analyst following. The alternative analyst following definitions include the average number of analysts following firms reported on IBES in 1995, the proportion of firms listed on a country's domestic exchange with IBES coverage in 1995, and the natural log of these two variables. All results survive under these perturbations.

We also try the variable *NANALYST ÷ FIRMSIZE* (number of analysts following the largest 30 companies in each country in 1996 scaled by the average market capitalization of the 30 largest firms measured at the end of fiscal year 1996 in $US (millions); see appendix A for detailed descriptions of variables and sources) to control for size-related analyst following effects. Using this measure of analyst following, we cannot generate two distinct transparency factors. In terms of explaining this outcome, we find that this analyst following variable is uncorrelated with *DISCL* (and unrelated to the other analyst coverage variables); in contrast, our other measures of analyst following are all highly positively correlated with *DISCL*. By being unrelated to *DISCL,* this analyst variable potentially lacks the necessary correlation structure to yield the two-factor separation. We note, however, that our main regression results using our two transparency factors are robust to the inclusion of *FIRMSIZE* as an independent variable.

Because the judicial efficiency variable we used in the main analysis applies particularly to foreign firms (see description in appendix A), we check robustness using purely domestic measures of legal efficiency. Using the exact procedures for resolving two specific disputes in 109 countries (eviction of a residential tenant for nonpayment of rent and collection of a bad check) Djankov et al. [2003a] construct indexes of procedural formalism of dispute resolution and expected duration of dispute resolution in calendar days, for each country. The results using these measures of legal efficiency are qualitatively similar to those we report using our judicial efficiency measure.

We acknowledge that a potential correlated omitted variable is cross-country differences in the complexity of business firms. For example, complex firms may face a demand for segment reporting whereas more simple firms would not; therefore, our measures of transparency may vary with complexity. Although we cannot come up with a direct measure of firm complexity, our main results are robust to the inclusion of firm size, GNP, and ownership structure, all of which likely capture some aspects of firm complexity.

It is also important to note that our method forces the factors to be orthogonal. We believe the use of orthogonal factors cleanly isolates the underlying nature of corporate transparency factors. In particular, note that for our orthogonal factors (see table 2), *DISCL* (which measures the intensity of financial disclosures) loads prominently in both factors. This suggests that financial disclosures serve an important role both in providing financial information to those outside the firm to aid in estimating the intrinsic value of the firm and in providing governance information to outside investors to hold officers and directors accountable. Specifically, orthogonalization yields factors that capitalize on the dual-use role of such information, whereas the use of nonorthogonal factors would likely obscure this information. Moreover, our conclusions are not an artifact of the orthogonalization process. For example, as we report in table 7, when we perform separate regressions using the raw measures *DISCL* and *GOVERN* (positively correlated at 0.525 from table 1), *DISCL* is seen to be associated with both the legal/judicial regime (marginally) and political economy, whereas *GOVERN* is only associated with the legal/judicial regime. As such, the raw, individual regression results effectively confirm our factor analysis choice and the dual-use role that *DISCL* plays.

Finally, interpretation of our findings is subject to several important caveats. First, theories are incomplete concerning the supply and demand for firm-specific information in economies. Hence, we cannot turn to theory to specify the complete set of explanatory variables that should be included in our cross-country regressions. Moreover, because various domestic factors are interrelated, our regression results are likely to be affected by omitted correlated variables. We expect that future research into the factors related to corporate transparency will be enhanced by more complete theories and databases. Second, the explanatory variables included in our regressions are highly correlated and measured with error, further limiting the interpretation of results. Third, causal inferences are not possible. Although it is highly unlikely that cross-country differences in corporate transparency cause cross-country differences in political, legal, and judicial systems, it is possible that both corporate transparency and political, legal, and judicial systems are caused by the same omitted factors. Fourth, our results are based on a single cross-section with a relatively small sample size, constrained by the number of countries with available data for the model variables.

The limitations of the cross-country design used here are well recognized in the economics literature. Levine and Zervos [1993] conclude that studies that rely on the cross-country design can be "very useful" as long as the reader interprets the empirical regularities as suggestive of the hypothesized relations. Levine and Zervos also argue that not finding hypothesized cross-country relations would cast meaningful doubt on the hypothesized relations. This is the spirit in which we intend for our results to be interpreted.

5. *Summary*

We develop a framework for conceptualizing and measuring corporate transparency at the country level. Our transparency framework is neither complete nor fully developed. A recent body of research in economics and finance documents a significant relation between the CIFAR index and a variety of economic phenomena. We expect that improved measures of corporate transparency will enable more powerful tests of the economic effects of the widespread availability of firm-specific financial and governance information. In addition, more comprehensive measurement schemes will facilitate research into the interactions among components of transparency, and between components of corporate transparency and other institutions (see Bushman and Smith [2001, 2003], Ball [2001]).

We provide new evidence of how information systems covary around the world by presenting a correlation matrix and results using factor analysis. Generally, our correlation matrix suggests a positive association in the quality of information systems that allegedly contribute to financial transparency. These information systems include high-quality financial reporting, financial analysts, institutional investors, and well-developed media channels. The exception is insider trading activities, the suppression of which is positively related to several other information systems that contribute to financial transparency, including the timeliness and intensity of financial disclosures, analyst following, and information dissemination as measured by media penetration.

Two main factors emerge from factor analysis of six individual measures of information systems, including the timeliness, intensity, and measurement of financial disclosures, and the intensity of governance disclosures, analyst following, and per capital media penetration. The first factor, interpreted as financial transparency, primarily captures the strong comovement among the intensity and timeliness of financial disclosures, analyst following, and media penetration. The second factor, interpreted as governance transparency, primarily captures the comovement among the intensity of governance disclosures and the intensity and timeliness of financial disclosures.

We also provide new evidence of *why* corporate transparency varies across countries. Our main multivariate result is that governance transparency is primarily related to the legal/judicial regime, whereas financial transparency is primarily related to the political regime. Specifically, our cross-country regressions document that governance transparency is higher in countries with a legal/judicial regime characterized by a common law legal origin and high judicial efficiency. In contrast, financial transparency is higher in countries with low state ownership of enterprises, low state ownership of banks, and low risk of state expropriation of firms' wealth. These results are robust to inclusion of various additional institutional variables.

We also document that governance transparency is significantly and negatively related to the importance of bank financing relative to external equity financing, consistent with a limited monitoring role for outside investors in bank-centric settings. Finally, using the average market capitalization of the 30 largest firms in a country to proxy for firm size, we find that financial transparency is significantly higher where firms are larger. However, we find that governance transparency is not related to firm size.

There are two natural extensions to our analysis of how and why corporate transparency varies. One is to extend our cross-sectional analysis to consider intertemporal analyses. For example, Bushman, Piotroski, and Smith [2004] examine whether the enforcement of insider trading restrictions increases the amount of analyst activity in a country. A second natural extension is to distinguish between mandatory and voluntary corporate reporting, and explore how each varies with political and legal/judicial regimes.

APPENDIX A

Description and Source of Variables

Variable	Description	Source
Corporate Transparency		
Corporate reporting environment		
CIFAR	Index created by examining and rating companies' 1995 annual reports on their inclusion or omission of 90 items. These items fall into seven categories: general information, income statements, balance sheets, funds flow statement, accounting standards, stock data, and special items. A minimum of 3 companies in each country were studied.	International Accounting and Auditing Trends, Center for Financial Analysis and Research (CIFAR)
DISCL	Average ranking of the answers to the following questions: A6g (R&D), B3f (capital expenditure), Ca (subsidiaries), Cb (segment-product), Cc (segment-geographic), and D1 (accounting policy).	Internally constructed from data contained in CIFAR
GOVERN	Average ranking of the answers to the following questions: B2a (range of shareholdings), B2b (major shareholders), Ce (management information), Cf (list of board members and their affiliations), Cg (remuneration of directors and officers), and Ch (shares owned by directors and employees).	Internally constructed from data contained in CIFAR
MEASURE	Average ranking of the answers to the following questions: A3 (consolidation) and A6p (discretionary reserves).	Internally constructed from data contained in CIFAR
TIME	Average ranking of the answers to the following interim reporting questions: Ea (frequency of reports), Ed–Ef (count of disclosed items), and Eb (consolidation of interim reports).	Internally constructed from data contained in CIFAR

APPENDIX A— *Continued*

Variable	Description	Source
AUDIT	Variable indicating the percentage of firms in the country audited by the Big 5 accounting firms. AUDIT equals 1, 2, 3, or 4 if the percentage ranges between (0, 25%), (25%, 50%), (50%, 75%), and (75%, 100%), respectively.	International Accounting and Auditing Trends, CIFAR
Private information acquisition		
NANALYST	Number of analysts following the largest 30 companies in each country in 1996.	Chang, Khanna, and Palepu [2000]
IT_ENF	Indicator variable equal to 1 if the country enforced insider trading laws before 1995, 0 otherwise.	Bhattacharya and Daouk [2001]
POOL_INV	Average of total assets of pooled investment schemes to GDP between 1993 and 1995.	Beck, Demirguc-Kunt, and Levine [1999]
Dissemination of information		
MEDIA	Average rank of the countries' media development (print and television) between 1993 and 1995.	World Development Indicators
Legal Origin		
BRITISH	Indicator for English common law tradition.	LaPorta et al. [1998]
FRENCH	Indicator for French civil law tradition.	LaPorta et al. [1998]
GERMAN	Indicator for German civil law tradition.	LaPorta et al. [1998]
CIVILLAW	Indicator variable equal to 1 if the country has a civil law tradition (i.e., French, German, or Scandinavian legal tradition), 0 otherwise.	LaPorta et al. [1998]
Political Suppression		
AUTOCRACY	A measure of the general closedness of political institutions ranging from 0 (open) to 10 (closed). Measured as the average between years 1960 and 1994.	Polity III
SOE	Share of country-level output supplied by state-owned enterprises (*SOE*), where countries with more *SOE* investment receive higher ratings. Ratings range from 0 to 10. Variable is the average of 1990 and 1995 share of ownership.	Economic Freedom of the World: 2001 Annual Report
COST_ENTRY	A linear combination of three measures of the cost of entry into the country's markets. The three measures are: (1) number of procedures or steps with which a start-up has to comply to obtain legal status, (2) time it takes to become operational (in business days), and (3) cost of becoming operational as a share of per capita GNP. Weights for linear combination are calculated using principal components factor analysis.	Internally constructed using data from Djankov et al. [2002]
ST_BANK	Share of the assets of the top 10 banks in a given country owned by the government of that country in 1995. The percentage of assets owned by the government in a given bank is calculated by multiplying the share	LaPorta, Lopez-de-Silanes, and Shleifer [2002]

APPENDIX A— *Continued*

Variable	Description	Source
	of each shareholder in that bank by the share the government owns in that shareholder, then summing the resulting shares.	
Proprietary Costs		
LRISK_EX	International Country Risk Guide's assessment of the risk of outright confiscation or forced nationalization by the state. Average of April and October of the monthly index between 1982 and 1995. Scale from 0 to 10, with higher scores for lower risks.	LaPorta et al. [1998]
PATENT	Index measuring the strength of patent rights. Each country's patent system is scored from 0 to 5, where higher values indicate stronger levels of protection.	Economic Freedom of the World: 2001 Annual Report
Contracting Demand for Information		
EFF_JUD	Assessment of the "efficiency and integrity of the legal environment as it affects business, particularly foreign firms," produced by the country-risk rating agency Business International Corporation. It "may be taken to represent investors' assessments of conditions in the country in question." Average between 1980 and 1993. Scale between 0 to 10, with lower scores equal to lower efficiency levels.	LaPorta et al. [1998]
Country-Level Attributes		
log(*GNP*)	Log of per capital GNP in calendar year 1995.	World Development Indicators
BNK_MKT	Measured as the log of 1 plus the ratio of financial-institution-related GDP to the country's market capitalization of equity securities.	Beck, Demirguc-Kunt, and Levine [1999]
ANTI_RTS	Measure of anti-director rights, scored from 0 to 5, with higher scores for stronger rights.	LaPorta et al. [1998]
CLOSEHLD	The average percentage of common shares owned by the three largest shareholders in the 10 largest nonfinancial, privately owned domestic firms in a given country. A firm is considered privately owned if the state is not a known shareholder in it.	La Porta et al. [1998]
LIBERAL	An indicator variable equal to 1 if the country's capital market liberalization date preceded 1994, 0 otherwise.	Bekaert, Harvey, and Lundblad [2002]
FDI	Amount of foreign direct investment in country *i* during calendar year 1995, scaled by the country's GDP.	World Development Indicators
log(*FIRMSIZE*)	Log of the average market capitalization of the 30 largest firms measured at the end of fiscal year 1996 in $US (millions).	Chang, Khanna, and Palepu [2000]

APPENDIX B

Measures of Corporate Transparency

Panel A: Measures of financial reporting and transparency factors

Country	*CIFAR*	*FACTOR1*	*FACTOR2*	*DISCL*	*GOVERN*	*MEASURE*
Argentina	68	0.217	−0.604	70.65	68.12	100.00
Australia	80	0.355	1.080	100.00	93.84	100.00
Austria	62	−0.110	−0.078	70.29	78.99	68.48
Belgium	68	0.497	−0.067	92.75	76.45	39.13
Brazil	56	0.098	−0.869	57.25	65.94	100.00
Canada	75	1.171	−0.571	100.00	65.58	76.09
Chile	78	−0.085	0.210	92.75	76.45	100.00
Colombia	58	−1.205	−1.338	14.49	65.58	22.83
Denmark	75	0.475	−0.082	86.96	76.81	68.48
Finland	83	0.557	0.752	100.00	89.49	68.48
France	78	1.265	−0.628	100.00	65.58	70.65
Germany	67	1.617	−0.383	100.00	72.83	39.13
Greece	61	−0.874	−1.021	44.57	65.58	100.00
Hong Kong	73	0.663	0.568	79.71	91.30	100.00
India	61	−0.640	0.039	79.35	76.45	54.35
Ireland	81	−0.179	1.046	100.00	91.67	100.00
Israel	74	0.093	−0.399	100.00	65.58	76.09
Italy	66	1.157	−0.582	100.00	65.58	68.48
Japan	71	0.684	0.355	100.00	82.61	36.13
Kenya	.	−1.533	0.149	79.71	76.45	23.91
Korea	68	−0.493	−0.252	65.22	77.90	39.13
Luxembourg	.	−0.511	0.937	55.43	65.58	51.09
Malaysia	79	0.234	1.241	100.00	96.74	100.00
Mexico	71	0.386	−0.808	68.12	65.58	100.00
Netherlands	74	1.342	0.380	100.00	85.87	46.74
Nigeria	70	−1.709	0.503	71.01	84.06	68.48
New Zealand	80	−0.028	1.160	100.00	94.57	100.00
Norway	75	0.279	0.553	76.45	90.22	68.48
Pakistan	73	−1.393	0.894	68.48	92.75	46.74
Peru	.	−0.644	−0.837	53.99	65.58	54.35
Philippines	64	−0.122	−0.616	80.07	65.58	23.91
Portugal	56	−0.260	−0.338	81.16	70.29	70.65
Singapore	79	0.459	1.336	100.00	100.00	100.00
South Africa	79	−0.407	1.131	88.41	94.20	100.00
Spain	72	0.877	0.154	92.75	79.71	100.00
Sri Lanka	74	−1.361	1.120	63.41	97.83	46.74
Sweden	83	0.801	1.062	100.00	96.74	39.13
Switzerland	80	0.814	0.558	100.00	86.96	68.48
Taiwan	58	.	.	59.78	69.93	46.74
Thailand	66	−0.362	−0.815	51.07	68.12	23.91
Turkey	58	−0.789	−0.779	59.06	67.03	68.48
United Kingdom	85	0.754	1.029	100.00	94.57	100.00
United States	76	1.590	−0.341	87.32	75.72	46.74
Uruguay	.	−0.810	−2.868	33.33	33.33	100.00
Venezuela	.	−1.377	−0.812	36.23	69.57	100.00
Zimbabwe	72	−1.493	0.705	66.67	87.68	100.00

APPENDIX B— *Continued*
Measures of Corporate Transparency

Panel B: Measures of timeliness, Credibility, private in formation collection, and media

Country	*TIME*	*AUDIT*	*ANALYST*	*IT_ENF*	*POOLINV*	*MEDIA*
Argentina	91.30	.	12.73	1	.	68.29
Australia	89.13	4	12.30	0	0.103	89.25
Austria	68.12	3	8.63	0	0.109	87.53
Belgium	63.04	3	15.33	1	0.059	86.73
Brazil	86.96	3	16.10	1	0.184	56.14
Canada	99.28	4	16.90	1	.	93.37
Chile	94.20	4	5.53	0	0.069	62.46
Colombia	62.32	3	3.31	0	.	58.13
Denmark	73.91	4	12.87	0	0.033	95.52
Finland	78.99	4	14.90	1	0.013	94.82
France	78.26	3	23.20	1	0.371	86.14
Germany	68.12	4	32.40	1	0.135	90.99
Greece	17.39	1	6.10	0	0.047	72.07
Hong Kong	69.57	4	25.00	1	.	87.44
India	45.65	1	11.90	0	0.072	29.51
Ireland	69.57	4	5.43	0	0.262	83.34
Israel	66.67	2	3.19	1	0.123	82.47
Italy	86.96	4	21.57	0	0.072	78.98
Japan	86.23	4	14.87	1	.	91.79
Kenya	17.39	.	0.00	0	.	23.05
Korea	17.39	3	9.90	1	.	83.50
Luxembourg	60.87	4	0.00	0	.	92.43
Malaysia	65.22	3	19.90	0	.	63.83
Mexico	84.78	3	18.53	0	.	59.95
Netherlands	78.26	4	29.53	1	0.156	92.00
New Zealand	68.12	4	8.87	0	.	85.67
Nigeria	17.39	3	0.00	0	.	27.29
Norway	94.20	4	12.83	1	0.038	95.31
Pakistan	51.45	2	3.40	0	.	32.47
Peru	71.74	.	8.10	1	.	40.33
Philippines	75.36	1	10.87	0	.	44.26
Portugal	62.32	3	5.33	0	0.101	70.59
Singapore	63.77	4	20.90	1	.	83.72
South Africa	86.96	4	7.40	0	0.035	59.56
Spain	89.13	4	22.73	0	0.163	75.31
Sri Lanka	73.91	.	2.40	0	.	37.86
Sweden	86.23	4	20.60	1	0.097	95.47
Switzerland	73.91	3	19.97	1	0.155	93.78
Taiwan	17.39	2	6.80	1	.	.
Thailand	89.13	3	9.77	1	.	52.26
Turkey	17.39	1	7.97	0	.	58.55
United Kingdom	86.96	4	20.10	1	0.126	90.81
United States	97.83	4	30.23	1	0.225	96.72
Uruguay	17.39	4	0.00	0	.	71.83
Venezuela	17.39	3	1.67	0	0.067	62.64
Zimbabwe	60.87	4	0.00	0	.	28.71

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