

PROTECTIONISM WITHIN DISCLOSURE REGULATION: EVIDENCE FROM NATIONAL TRANSPARENCY AND GAAP CHOICES

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Abstract

The arguments used thus far in the literature to justify disclosure regulation are that it increases global economic efficiency and that it redistributes wealth among investors. In this paper, we depart from this view and propose that disclosure regulation may also be used by national authorities as a protectionist mechanism to indirectly charge for access to national scarce resources and thereby extract economic rents from resources-needy entities. This increases national welfare, but is inefficient globally. We find empirical support for our proposition through a cross-sectional analysis of financial reporting standards of 62 countries. Results suggest that national objectives in implementing disclosure regulation represent a major obstacle for the global convergence of accounting standards and that disclosure regulation's purpose may not be limited to solving the separation of ownership and control dilemma.

Keywords: Disclosure regulation; protectionism; disclosure theory; International Accounting Standards; government policy; corporate governance

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I. Introductionⁱ

Our objective is to provide a new theoretical argument to justify disclosure regulation, and to support our claim empirically. Economic arguments that support regulation in favor of investors are not only limited, but extent theory on voluntary disclosure also shows that, absent market imperfections or externalities, firm managers have incentives to optimally trade off the costs and benefits of voluntary disclosure and to provide the efficient level of information for investors in the economy (Healy and Palepu 2001)¹. Why then does regulation of disclosure exist? We argue that governments create disclosure regulation, at least in part, as a protectionist tool to indirectly tax access to their scarce resources, not to help investors.

The literature provides three theoretical arguments to justify disclosure regulation, and leaves many unanswered empirical questions. A first way to explain the occurrence of disclosure regulation is to identify market imperfections or externalities that lead to sub-optimal welfare and that disclosure regulation can mitigate. For example, Leftwich (1980), Watts & Zimmerman (1986), and Beaver (1998) argue that accounting information can be viewed as a public good because stockholders implicitly pay for it but they can not charge potential investors who use the information. This leads to underproduction of

information in the economy because prospective investors and other stakeholders can free-ride on the information. But if disclosure regulation corrects market failures and increases global economic efficiency, why then are there still so many regulation differences among countries that have increasingly interdependent economies? Do potential market failures really matter? Does disclosure materially improve the situation? Are there negative consequences of regulation?

A second explanation for the occurrence of disclosure regulation concerns the welfare of uninformed investors (Leftwich 1980, Watts and Zimmerman 1986, and Beaver 1998). By creating minimum disclosure requirements, regulators reduce the information gap between informed and uninformed investors. This implies that the objective of regulation is to redistribute wealth among investors, rather than to improve economic efficiency because, absent regulation, uninformed investors can still pay for better information. But if disclosure regulation provides informed and uninformed investors with comparable information, why then has the market for securities analysis flourished so? Is the financial securities market not sufficiently efficient to ensure that uninformed investors obtain their fair share of wealth?

A third common explanation for regulation is that strict disclosure requirements lead to liquid and

efficient markets in financial securities and reduce the cost of capital for firms (Levitt 1997) because they permit issuers to commit to a permanent level of disclosure (Rock 2002) that represents an important step in solving the investor-manager's agency problem (Coffee 1984; Mahoney 1995; Verrecchia 2001). However, Admati & Pfleiderer (2000) note that the question remains:

If disclosure is good, why don't firms do it voluntarily? Regulation should not be necessary if disclosure is in the firm's best interest. The need for disclosure regulation is further brought into question by the well-known "unraveling" results of Ross (1979), Grossman (1981), and Milgrom (1981), whereby lack of disclosure is taken to be bad news, forcing the informed party to reveal its information in equilibrium. If this is the case, again, regulation that requires that certain information be disclosed seems to be redundant.

In this paper, we propose a new argument. We challenge the premises presented thus far in the literature whereby disclosure regulation is used primarily to increase global economic efficiency or to redistribute wealth among investors. We build on the work of Foster (1980), Dye (1990), Easterbrook and Fischel (1991), Barth, Clinch and Shibano (1998), Admati and Pfleiderer (2000) and Verrecchia (2001) who study disclosure regulation in multi-firm/multinational contexts. Their work is important because contexts that include more than a single firm open the path to disclosure regulation insights beyond the investor-manager relationship. We suggest that governments create disclosure regulation to increase national welfare by generating "make-work" economic activity. To achieve this, legislators mandate costly country-specific disclosure, above the efficient amount of information that firms would produce and disclose voluntarily, to force local and foreign firms to spend their economic surpluses in the local economy. For firms, disclosure is the price (the indirect tax) they must pay to access a country's scarce resources. We find empirical support for our argument.

This study is important for three reasons. First, it provides a new theoretical explanation for disclosure regulation. Second, Healy and Palepu (2001:412) affirm that "empirical research on the regulation of disclosure is virtually non-existent." This study thus pioneers empirically. Finally, in a time where disclosure rules are reassessed following major corporate scandals, this study's results show that governments have incentives to reinvent and multiply rules that do not serve investors' interests better.

We emphasize that for the purpose of this paper, we focus on the *amount* of information that regulation requires firms to disclose. We do not focus on the choice of regulated information items, on their potential value to investors, on reporting choices given to managers in presenting information items, or on the requirement that disclosed information be

truthful. We define disclosure regulation as the set of rules that require firms to make any information publicly available. The object of our inquiry is however restricted to national GAAP. We define scarce resources as any circumstances that could be valuable for a firm.

The following section presents the argument that disclosure regulation is protectionist mechanism analogous to an indirect tax, the theoretical framework, and hypotheses. Section III discusses the field context. The research design and empirical specifications are presented in Section IV. Section V presents results, and Section VI a summary and discussion.

II. Theoretical Framework and Hypotheses Development

Protectionism: The Indirect Tax Argument

Three parties are active in disclosure regulation. Firms disclose information; investors receive information; and governments create regulation. Abundant voluntary disclosure literature affirms that disclosure regulation is redundant if we assume that it exists to optimize relationships between managers and investors.ⁱⁱ Consequently, because managers and investors do not need regulation on disclosure, it seems appropriate to investigate how disclosure regulation benefits the only other party involved: governments.

We argue that protectionist governments indirectly tax access to their national resources using disclosure regulation in a manner similar to how they do with severance taxes. Resource-rich governments levy severance taxes in the form of a percent of the value of the resources removed or sold by firms (an ad valorem tax), or sometimes tax the volume of the resource removed on a dollar-per-unit basis (EIA 1997). The literature shows that taxing a country's resources can be a lucrative policy. Testa (1984) and Kolstad and Wolak (1985) affirm that severance taxes on energy production have prompted large wealth flows from consuming to producing regions. The tax burden is ultimately shared mostly between investors and customers. The higher the proportion of foreigners, the more wealth the tax extracts from abroad. However, Olson (1984) demonstrates that on a global basis, the tax-induced curtailment of production is inefficient. Countries that consume resources suffer a decrease in welfare that exceeds the gain to taxing countries.

Similarly, disclosure regulation allows a government to collect a tax indirectly from firms accessing a country's scarce resources (i.e., having economic activities in the country). Tax payments are not made directly to governments, but rather implicitly from the additional economic activity created by producing information disclosure above the efficient level that firms would voluntarily disclose. In other words, national governments benefit

from forcing the use of local disclosure professionals (e.g., accountants) who pay income and sales taxes. Protectionism increases as a country's disclosure rules diverge from international standards to force information producers to be trained, to reside, to pay income and sales taxes, and to have most of their economic activity inside the country. Further wealth flows in the economy when foreign investors hire local information producers to assess the merits of potential investments in local economic entities. Disclosure regulation therefore begets private benefits to information producers (employees and suppliers) as well as public benefits from income taxes paid by information producers and the net additional general economic activity.

Theoretical Framework

Consider that governments are either transparent or corrupted (non-transparent) when they indirectly tax scarce resources. This assumption mirrors reality because Transparency International's (2001) Corruption Perceptions Index scores vary significantly among countries. Like Kolstad and Wolak (1985:240), we assume that transparent governments try to maximize total net benefits, both private and public, from the indirect tax.ⁱⁱⁱ Like Shleifer and Vishny (1993:601), we assume that corrupted governments act as "above-the-law" monopolistic officials that try to maximize indirect tax payments. The decision variable is the amount of indirect tax that governments levy. From a behavioral perspective, we assume that each country sets its indirect tax optimally, knowing that other countries will also follow their optimal strategy. Kolstad and Wolak (1985:240) report that such an oligopolistic behavior is the most likely in a taxation context, and that it leads to a Nash equilibrium in a game theoretic context.

Consider that governments elaborate their indirect tax on scarce resources in two steps. Initially, they analyze the supply and demand for access to their scarce resources, as well as disclosure regulation and corruption around the world, to find the optimal amount of indirect tax that they will levy.

Secondly, governments select *how* the value of the indirect tax will be levied. The collection mechanism can be either transparent or corrupted. Disclosure regulation is the transparent collection mechanism. It forces firms to spend to comply with a set of disclosure rules in return for access to national scarce resources. Bribery is the corrupted indirect tax collection mechanism, as per Shleifer and Vishny's (1993) argument. The government does not force firms to comply with a set of disclosure rules. Instead, it obtains the value of the indirect tax on scarce resources from firms informally, and grants access to national scarce resources in return.

Assuming that the cost of disclosure regulation (i.e., the indirect tax payment) increases as the amount of disclosure regulation increases, the theoretical

framework suggests that the amount of disclosure regulation in the countries of the world can be described by the following equation:

$$\text{Amount of Disclosure Regulation} = f(\text{Scarce Resources, Governmental Transparency})$$

Hypotheses

On the basis of the similarities between severance taxes and disclosure regulation, the economic literature suggests that the optimal amount of protectionism (indirect tax) that governments should implement through disclosure regulation varies with the level, the elasticity, and the origin of the demand for access to their national scarce resources. Fain and Gade (1995) integrate considerable literature to show that, under conditions like to those presented in the theoretical framework, the higher and the more inelastic the foreign demand, the higher the optimal protectionism (indirect tax) will be because governments can then export the tax burden and increase national welfare. Consistently, we expect governments of countries with a scarce resource competitive advantage to create a greater amount of disclosure regulation than other governments. In contrast, we anticipate that governments of countries with relatively modest scarce resources must develop a competitive advantage to attract firms by *not* implementing any disclosure rules to spare firms of costly compliance obligations. This leads to our first hypothesis:

H1: The amount of disclosure regulation in a country is positively related to the amount of national scarce resources.

Further, because corrupted (non-transparent) governments can directly charge for access to scarce resources using bribes without formally implementing disclosure regulation, we expect that corrupted governments will have less elaborate disclosure rules than transparent governments. This leads to our second hypothesis:

H2: The amount of disclosure regulation in a country is positively related to the level of governmental transparency in that country.

III. Field Context: International Accounting Standards

The globally efficient way to regulate financial reporting would be that all countries require firm managers to comply with a common set of standards which serves the objectives of issuers and users across the world. Created to promote the convergence of financial reporting methods for the benefit of investors, the International Forum on Accountancy Development recommends the worldwide adoption of the International Accounting Standards (IAS).

Paul Volcker, Chairman of the Trustees of the International Accounting Standards Committee (IASC) Foundation, voiced this view in June 2001, when he said, "the rapid development of global financial markets has greatly reinforced the

desirability of [...] international consistency in accounting standards and auditing approaches.” Strong support for high quality international standards has come from a number of other sources, including the European Commission’s Commissioner on Internal Markets, Frits Bolkestein, who, in commenting on the EC’s proposal for a Regulation on the application of IAS said: “The adoption of a common financial reporting language for listed companies throughout Europe will greatly benefit both companies and investors in bringing about more transparency and a higher degree of comparability.” And, one of the Commissioners of the United States Securities and Exchange Commission, Isaac Hunt, commented recently, “... I can think of no greater gift to the investing public than establishing a set of world wide accounting standards.” (Excerpt from IFAD GAAP 2001 Survey 2003)

But as of 2001, the IFAD 2001 GAAP Survey reports that only three national governments (Cyprus, Kenya, and Romania), in a sample of 62, mandated compliance with IAS. Other countries mandated the disclosure of more, less, or different information items. Significant progress has been made since, but convergence is still much slower and requires more compromises than investors would like. This is not surprising in the context of this paper’s theoretical framework, which suggests that resource-rich governments gain from disclosure regulation divergence.

The IFAD GAAP survey monitors the worldwide convergence of accounting standards towards IAS. It also provides a great opportunity and context to operationalize the amount of disclosure regulation in different countries around the world, Equation 1’s dependent variable.

IV. Data and Empirical Model Specification

We rely on the IFAD 2001 GAAP survey to develop the dependent variable and consequently select the survey’s sample of 62 countries. The rest of this section presents the measures we use to proxy the model’s variables, as well as the empirical model’s specification.

Amount of Disclosure Regulation

To obtain the data necessary to compile the GAAP 2001 survey, the IFAD asked partners in the large accountancy firms to benchmark their national written requirements against some 80 accounting measures, focusing on standards (both IAS and national) in force for the financial reporting period ending on December 31st, 2001. For each country, the survey report presents high level summaries identifying, for the selected accounting measures, those instances in which a country would not allow (because of inconsistent requirements) or would not require (because of missing or permissive requirements) the

IAS treatment. Gaps between national requirements and IAS are divided, in the survey report, in five categories that we label for ease of further reference:

1. *Type A absence*: Key area where the absence of national rules leads to important differences from IAS.
2. *Type B absence*: Instance where national accounting may differ from that required by the IAS because of the absence of national rules on recognition and measurement.
3. *Type C absence*: Instance where there are no specific rules requiring disclosures of information items.
4. *Type A inconsistency*: Instance where there are inconsistencies between national and IAS rules that could lead to differences for many enterprises in certain areas.
5. *Type B inconsistency*: Other issue that could lead to differences from IAS in certain enterprises.

We developed a Disclosure Regulation Index to proxy the amount of disclosure regulation in each country. Our approach is to add points to the Index score for instances where national standards require more disclosure than IAS (inconsistencies), and to deduct points from the Index score for instances where national standards require less disclosure than IAS (absences). We attribute an index score of zero to the three countries that require compliance with IAS. For each other country, we start from an Index score of zero and we add one point for each *type A inconsistency* and one point for each *type B inconsistency* that the survey reports in a bullet point format. We do this because each inconsistency inventoried in the survey report represents one additional information item that firms must produce and disclose beyond IAS to comply with national standards. In a second step, we subtract one point for each *type B absence* and one point for each *type C absence*. We do this because each absence inventoried represents one IAS with which firms are not required to comply. Finally, for each *type A absence*, we subtract a number of points equal to the number of standards that this key absence allows firms not to comply with. Only four of the 62 countries in the sample (Latvia, Morocco, Slovenia, and Turkey) have *type A absences*. For example, Morocco’s *type A absence* is that national standards and regulations make no requirements to prepare consolidated financial statements. The 2001 GAAP survey reports that this allows firms not to comply with IAS 22, IAS 27, IAS 28, and IAS 31, and we therefore subtract four points from Morocco’s score for this particular *type A absence*. We emphasize that other absences (B & C) and inconsistencies (A & B) each pertain to a single standard, which is why we invariably deduct or add one point only for each item reported.

The United Kingdom obtains the highest Disclosure Regulation Index score with +21 and Saudi Arabia the lowest with -15. This means that among the “80 key measures” that the surveyors examined, the net number of items that firms must disclose in the U.K. over and above the amount of disclosure required for compliance with IAS is 21, whereas the net amount of disclosure required in Saudi Arabia is below IAS compliance by 15 items. Appendix A presents the list of countries in the sample and their final Disclosure Regulation Index scores.

Scarce Resources

Countries have a lot of different scarce resources. We split them in two broad categories: microeconomic resources, and natural resources. Porter (2003) studies microeconomic resources that he describes as the complex array of national circumstances that support a high and sustainable level of productivity. Porter inventoried 65 measures that he classified in the following categories: company operations and strategy; national business environment (physical infrastructure, administrative infrastructures, human resources, technology infrastructures, capital market, and demand conditions); related and supporting industries; and the context for firm strategy and rivalry (incentives and competition). All of the inventoried national circumstances can individually be valuable for firms. However, each of the 65 competitiveness measures inventoried by Porter is highly, significantly ($p < 0.05$), and positively correlated with the country’s gross domestic product (GDP) per capita. Therefore, a first measure of a country’s scarce resources that we include in the empirical model as a proxy for the amount of microeconomic resources available in the country is the natural logarithm of national GDP per capita.

Porter (2003) noted that GDP per capita is the “best single summary measure of microeconomic competitiveness available across all countries.” We calculated GDP per capita using 2001 data from the United Nation Statistics Database, namely the following two fields: GDP at market prices, current prices, US\$ (UN estimates) [code 19450], and Population, official mid-year estimates [code 15070]. For Taiwan, we used complementary information from The World Factbook, 2001 edition, prepared by the CIA. Like de Soysa and Oneal (1999), Tsai (1999), Curtis, Baer and Grabb (2001), and Fatas and Rose (2001), we select the logarithmic form to scale GDP per capita data and to correct its highly skewed distribution in inter-country studies.

For the natural resources measure, we focused on the country’s energetic *potential*, as opposed to its actual production, to avoid redundancy with the microeconomic resources’ measure. We rely on data published by the World Energy Council (2001) with respect to:

- Coal: Total proved recoverable reserves, plus estimated additional recoverable reserves, in million of tons. Tables 1.1, 1.2i, 1.2ii, and 1.2iii.
- Oil: Total proved recoverable reserves, plus estimated additional recoverable reserves of crude oil and natural gas liquids, in million of tons. Tables 2.1, 2.2i, and 2.2ii
- Natural Gas: Total proved recoverable reserves, plus estimated additional recoverable reserves, in billion of cubic meters. Tables 5.1 and 5.2.
- Nuclear Energy: Capacity in MWe. Table 6.4.
- Hydro Power: Economically exploitable capability in TWh/year. Table 7.1.
- Wood: Forest area in thousands of square km. Table 9.1.

We selected those six energy sources because they are the most economically viable. To simplify the proxy for natural resources to a single measure, we first calculated the per capita amount of potential energy available from each energy source in each country. We then ranked each country from lowest (1) to highest (62) six times on the basis of their per capita amount of potential energy available from each energy source. Finally, in the empirical model, we proxy a country’s amount of natural resources with the geometric average of its six ranks.

Governmental Transparency

We rely on the 2001 Corruption Perceptions Index (CPI) prepared by Transparency International (2001) to elaborate a proxy for governmental transparency. Including CPI scores directly into the empirical model would create collinearity problems because the CPI scores are highly correlated with GDP per capita data. Instead, we use CPI scores to create a dummy variable that takes a value of 1 for governments that obtained a CPI score above the sample’s median (i.e., the most transparent half), and a value of 0 otherwise. The resulting empirical specification is the following OLS model:

$$\begin{aligned} \text{Amount_of_Disclosure_Regulation}_i = & a_0 + a_1 \\ & \text{Microeconomic_Resources}_i + (2) \\ & a_2 \text{Natural_Resources}_i + \\ & a_3 \text{Governmental_Transparency}_i + \varepsilon_i \end{aligned}$$

where all variables are as defined earlier in this section, for a country i . Based on the theoretical framework, we expect a_1 , a_2 , and a_3 to be positive.

Except for *Natural Resources*, we rely on 2001 data for each variable because the dependent variable is measured as of the end of 2001. *Natural Resources* is measured as of the end of 1999 due to data availability. We are confident that this two-year lag is inconsequential because we do not think that national energetic potentials varied significantly between the end of 1999 and year 2001, on the basis that this information was published in 2001 by the World Energy Council.

V. Results

Table 1 provides descriptive statistics and a correlation matrix. The positive median value of *Amount_of_Disclosure_Regulation* indicates that mandatory disclosure requirements were greater than IAS in a majority of countries in the sample. Consistent with both hypotheses, this variable is positively correlated with scarce resources ($r = 0.52$ and $r = 0.32$) and transparency ($r = 0.52$) variables. Interestingly, governmental transparency is highly correlated ($r = 0.78$) with the amount of national microeconomic resources, but negatively correlated ($r = -0.20$) with the amount of national natural resources. This could indicate that it is easier for governments to use bribery to charge for access to natural resources than to implement protectionist mechanisms to charge for access to microeconomic resources.

Insert Table 1 about here

Regression results for the OLS model are in Table 2. Coefficients a_1 on microeconomic resources and a_2 on natural resources are reliably positive ($p = 0.057$ and $p = 0.000$, one-tailed). This provides support for H1. Coefficient a_3 on governmental transparency is also reliably positive ($p = 0.006$, one-tailed). This provides support for H2. The OLS regression's F statistic value of 17.376 ($p = 0.000$) provides assurance that the empirical model is well specified. Overall, results provide strong support for the theoretical framework. The OLS regression's *adjusted R*² statistic indicates that the argument that disclosure regulation is a protectionist tool for transparent governments can explain 45 percent of the variance in national amounts of disclosure regulation around the world.

Insert Table 2 about here

Using a dummy governmental transparency measure instead of the actual national score in the Corruption Perceptions Index maintains collinearity to an acceptable maximum *VIF* statistic value of 2.7. The tradeoff is, as usual, a slightly lower explanatory power of the empirical model as a whole in return for a better understanding of the role of each variable individually in explaining the amount of disclosure regulation. We have no doubt however that both microeconomic resources and governmental transparency variables must be included in the model's specification simultaneously because the presence of the governmental transparency dummy variable into the model increases its explanatory power significantly ($p = 0.012$) from an *adjusted R*² of 39 percent to a fully specified model *adjusted R*² of 45 percent.

VI. Summary and Discussion

The most important finding of this study is that the existence of disclosure regulation could be explained in terms of protectionism as a tool to charge for access to national scarce resources. A specific context, an empirical analysis of the accounting standards of 62 countries, supports that claim. Indeed, the argument that disclosure regulation is a form of indirect tax on national scarce resources can explain 45 percent of the variations in national amounts of financial reporting regulation. This argument is consistent with GAAP being a form of protectionism in favor of information producers, such as the accounting profession.

Results have important implications for investors, information producers, regulators, and the academic community. For investors, findings suggest a new way of looking at disclosure regulation because, contrary to common belief, it can be argued and defended empirically that disclosure regulation is not primarily established to help any of them. In contrast, disclosure regulation is a way to transfer wealth from investors and consumers to governments and population strata; and governments' gains increase as they implement rules that diverge from international standards. It is not surprising then that progress to converge to a common set of international accounting standards is not obtained without work and compromises despite its many benefits. Globally, our results suggest that if investors wish to have better and more consistent information, they are significantly more likely to succeed by asking firms directly, with all the weight of their voting power, instead of turning towards regulators who have economic incentives *not* to help.

For regulated information producers (e.g., accountants, lawyers, actuaries, etc.), results imply that many who are employed by non-governmental firms actually fill government-sponsored jobs. An interesting question is whether and how this can impair their commitment to the success of the firms they serve as employees or suppliers.

For governmental regulators, findings imply that it is necessary to re-evaluate periodically how well disclosure regulation serves national interests. For example, Kolstad and Wolak (1985) suggest that a regional (e.g., continental) cartel behavior could maximize joint profits successfully if side-payments are allowed. Should it be considered? Does national disclosure regulation serve the interests of those it targets? Is disclosure regulation an optimal way to extract wealth from firms and consumers? Does it repatriate enough wealth? Could resources protected differently and information producers' skills be used more efficiently? Does the current trend to outsource information production activities offshore (Boomer 2003; Gupta 2002) make disclosure regulation less effective? Is disclosure regulation a protectionist mechanism impairing the spirit of free trade

agreements? If so, should something be done about it? Finally, like Posner (1974) and Watts and Zimmerman (1986) argue, are governmental regulators captured by information producers they regulate? Is this an important problem?

For the academic community, results open the door to several research opportunities. An analysis of optimal national, continental, and global disclosure regulation in various contexts would certainly be welcome because it might provide insights about deadweight losses that disclosure regulation creates or about countries' positions relative to their national optima. Future research might also provide empirical support for the current theoretical framework by analyzing the longitudinal evolution of the amount of disclosure regulation in pace with the evolution of its determinants.

This study is limited to a convenience sample of 62 countries that does not include many of the world's most corrupted countries. On average, countries in the convenience sample have a 2001 Corruption Perceptions Index (CPI) score of 5.6. Lambsdorff (2001) notes that a larger sample of 149 countries, many of which are excluded from the 2001 CPI due to insufficient data reliability, would on average score 4.0 (lower = more corrupted). It is therefore possible that the empirical results are limited to the most transparent countries. We do not perceive this possibility as a serious concern however. It seems almost certain that empirical results from an analysis of all of the world's countries would be consistent with those presented in this study. The reason is that it is well documented that corrupted governments use discretionary powers to sell their natural resources corruptibly, leading to the underdevelopment of national microeconomic resources (see Schloss 2002). Therefore, if governments that charge for access to natural resources corruptibly can not charge for microeconomic resources because they are insufficient to be attractive on an after-tax basis, there is no reason for them to elaborate and enforce disclosure regulation. This is consistent with this paper's theoretical framework and empirical findings.

Interestingly, results suggest that regulated information producers live in the best of both worlds because they are called to work for two incongruent purposes. On the one hand, local governments try to increase information producers' national income (and income and sales tax payments) by maintaining disclosure regulations that diverge from international standards. On the other hand, investors have incentives to request information aligned with international standards that best serve their interests.

References

- Admati, A.R. and P. Pfleiderer. 2000. Forcing firms to talk: Financial disclosure regulation and externalities. *The Review of Financial Studies* 13, 479-519.
- Barth, M.E., G. Clinch and T. Shibano. 1998. International accounting harmonization and global equity markets. Research Report 1463. Stanford University.
- Beaver, W. 1998. *Financial reporting: an accounting revolution*. Prentice-Hall, Englewood Cliffs, NJ.
- Boomer, L.G. 2003. Indian outsourcers' standards higher than U.S. firms'. *Accounting Today*, September 22-October 5.
- Coffee, J.C. 1984. Market failure and the economic case for a mandatory disclosure system. *Virginia Law Review* 70 (4), 717-750.
- Curtis, J.E., Baer, D.E., and E.G. Grabb. 2001. Nations of jointers: Explaining voluntary association membership in democratic societies. *American Sociological Review* 66 (6), 783-805.
- de Soysa, I. and J.R. Oneal. 1999. Boon or bane? Reassessing the productivity of foreign direct investment. *American Sociological Review* 64 (5), 766-781.
- Dye, R.A. 1990. Mandatory versus voluntary disclosures: The case of financial and real externalities. *The Accounting Review* 65, 1-24.
- Easterbrook, F. and D. Fischel. 1991. *The economic structure of corporate law*. Harvard University Press. Cambridge, Mass.
- Energy Information Administration (EIA). 1997. *State Energy Severance Taxes, 1985-1993*.
- Fain, J.R. and M.N. Gade. 1995. The relative ability to tax coal in the western states. *Southern Economic Journal* 62 (1), 236-246.
- Fatas, A. and A.K. Rose. 2001. Do monetary handcuffs restrain leviathan? Fiscal policy in extreme exchange rate regimes. *IMF Staff Papers* 47, 40-61.
- Foster, G. 1980. Externalities and financial reporting. *Journal of Finance* 35, 521-533.
- Grossman, S.J. 1981. The informational role of warranties and private disclosure about product quality. *Journal of Law and Economics* 24, 461-483.
- Gupta, S. 2002. Demystifying offshore outsourcing. *CMA Management*, November, 36-38.
- Healy, P. and K. Palepu. 2001. Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics* 31, 405-487.
- International Forum on Accountancy Development (IFAD). 2003. GAAP 2001.
- Kolstad, C.D. and F.A. Wolak Jr. 1985. Strategy and market structure in western coal taxation. *The Review of Economics and Statistics* 67 (2), 239-249.
- Lambsdorff, J.G. 2001. Background paper to the 2001 Corruption Perceptions Index – Framework document. Transparency International (TI) and Göttingen University.
- Leftwich, R. 1980. Market failure fallacies and accounting information. *Journal of Accounting and Economics* 2, 193-211.
- Levitt, A. 1997. Remarks from the Chairman of the U.S. Securities and Exchange Commission at the Inter-American Development Bank. Washington, D.C. September 29.
- Mahoney, P.G. 1995. *Mandatory disclosure as a solution to agency problems*. The University of Chicago Law Review 62 (3), 1047-1103.

23. Milgrom, P.R. 1981. Good news and bad news: Representation theorems and applications. *Bell Journal of Economics* 12, 380-391.
24. Olson, D.O. 1984. The interregional incidence of energy-production taxes. *International Regional Science Review* 9 (2), 109-124.
25. Porter, M.E. 2003. Building the microeconomic foundations of prosperity: Findings from the microeconomic competitiveness index. In *World Economic Forum, Global Competitiveness Report 2002-2003*, chapter 1.2.
26. Posner, R. 1974. Theories of economic regulation. *Bell Journal of Economics and Management Science* 5, 335-358.
27. Rock, E. 2002. Securities regulation as lobster trap: A credible commitment theory of mandatory disclosure. *Cardozo Law Review* 23 (2), 675-704.
28. Rose-Ackerman, S. (1999). *Corruption and government. Causes, consequences and Reform*. Cambridge University Press, Cambridge.
29. Ross, S.A. 1979. Disclosure regulation in financial markets: Implications of modern finance theory and signaling theory. In F.R. Edwards (eds.), *Issues in Financial Regulation*, McGraw-Hill, New York.
30. Schloss, M. 2002. Mining and corruption paper/Transparency International presented at the Global Mining Initiative Conference held in Toronto May 12-15, 2002.
31. Shleifer, A. and R.W. Vishny. 1993. Corruption. *The Quarterly Journal of Economics* 108 (3), 599-617.
32. Testa, W.A. 1984. State taxation of energy production: regional and national issues. *FRB Chicago Economic Perspectives* 8 (5), 3-12.
33. Transparency International. 2001. *The Corruption Perceptions Index 2001*.
34. Tsai, M.-C. 1999. State power, state embeddedness, and national development in less developed countries: A cross-national analysis. *Studies in Comparative International Development* 33 (4), 66-88.
35. Verrecchia, R. 2001. Essays on disclosure. *Journal of Accounting and Economics* 32 (1-3), 97-180.
36. Watts, R., and J. Zimmerman. 1986. *Positive Accounting Theory*. Prentice-Hall, Englewood Cliffs, NJ.
37. World Energy Council. 2001. *Survey of Energy Resources*.

APPENDIX A. Sample and Disclosure Regulation Index^a

Country	Disclosure Regulation Index	Country	Disclosure Regulation Index
Argentina	13	Lithuania	-13
Australia	10	Luxembourg	-5
Austria	10	Malaysia	-8
Belgium	15	Mexico	13
Brazil	5	Morocco	-11
Bulgaria	-3	Netherlands	10
Canada	17	New Zealand	11
Chile	5	Norway	5
China	-2	Pakistan	3
Cyprus	0	Peru	4
Czech Republic	5	Philippines	-3
Denmark	7	Poland	7
Egypt	-1	Portugal	1
Estonia	-4	Romania	0
Finland	8	Russia	6
France	18	Saudi Arabia	-15
Germany	16	Singapore	6
Greece	7	Slovak Republic	-4
Hong Kong	6	Slovenia	0
Hungary	10	South Africa	-1
Iceland	1	Spain	8
India	0	Sweden	11
Indonesia	8	Switzerland	-5
Iran	-1	Taiwan	7
Ireland	20	Thailand	-8
Israel	6	Tunisia	-7
Italy	11	Turkey	-4
Japan	6	Ukraine	-9
Kenya	0	United Kingdom	21
Korea	3	USA	14
Latvia	-7	Venezuela	-8

^a Disclosure Regulation Index scores are calculated based on the results in the IFAD 2001 GAAP Survey (IFAD 2003). Calculation details are presented in the Data and Empirical

Model Specification section of this paper.

TABLE 1. Descriptive Statistics and Correlation Matrix (n = 62)

Variables ^a	Mean	Percentiles			Correlation with ^b		
		25 th	50 th	75 th	1.	2.	3.
1. Amount of Disclosure Regulation	3.5	-2.8	5.0	9.5			
2. Microeconomic Resources	8.8	7.7	8.9	10.0	0.52		
3. Natural Resources	19.5	6.4	17.7	28.0	0.32	-0.11	
4. Governmental Transparency	0.5	0.0	0.5	1.0	0.52	0.78	-0.20

^a Variable definitions are in the Data and Empirical Model Specification section of this paper.

^b Correlations are significant at the .10 level (one-tailed), except -0.11.

TABLE 2. OLS Regression of a Measure of a Country's Amount of Disclosure Regulation on Measures of Its Scarce Resources and Governmental Transparency (n = 62)

$$\text{Amount_of_Disclosure_Regulation}_i = a_0 + a_1 \text{Microeconomic_Resources}_i + a_2 \text{Natural_Resources}_i + a_3 \text{Governmental_Transparency}_i + \varepsilon_i$$

Variables ^a [Coefficients]	Predicted Coefficient Signs	Value	t-value	Prob. ^b
Intercept [a_0]	?	-18.366	-2.417	$p = .019$
Microeconomic Resources [a_1]	+	1.555	1.606	$p = .057$
Natural Resources [a_2]	+	0.249	4.375	$p = .000$
Governmental Transparency [a_3]	+	6.669	2.592	$p = .006$
OLS Statistics		Value		Prob.^b
Adjusted R ²		0.446		n.a.
F		17.376		$p = 0.000$

^a Variable definitions are in the Data and Empirical Model Specification section of this paper.

^b All p-values are one-tailed where coefficient signs are predicted and two-tailed tests otherwise.

ⁱ For the introductory part of this paper, we are very much indebted to Healy and Palepu (2001) from whom we borrow many words because their section 3.1, *Regulation of disclosure*, presents the justification for this paper.

ⁱⁱ See Verrecchia (2001) for a review of the theoretical literature on voluntary disclosure, and Healy and Palepu (2001) for a review of the empirical literature on voluntary disclosure.

ⁱⁱⁱ The authors study coal taxation at the state level within the United States and implicitly assume transparency. Similarly, we study charges for access to scarce resources at the national level within the world.