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Level of Multinationality, Growth Opportunities, and Size as Determinants of Analyst Ratings of Corporate Disclosures

Ahmed Riahi-Belkaoui

INTRODUCTION

This paper examines the cross-sectional variation in analysts' published evaluations of firm's disclosure practices and provides evidence the analysts' ratings are increasing in firm size, growth opportunities as measured by the investment opportunity set and the degree of multinationality.

The extent to which mandatory disclosure requirements are exceeded differs from firm to firm, with a great latitude existing for both voluntary and discretionary disclosures. The primary users of these information are the analysts. In fact, analyst ratings of these varied corporate disclosures are included in the *Report of Financial Analysts Federation Corporate Information Committee* (FAF Reports), providing an overall measure of the firm's effectiveness in communicating with investors. The main objective of this study is to explain these analysts' ratings of firm disclosure, with the assumption that the analyst ratings measure disclosure informativeness. Theoretical research on motivations for disclosure is used to link the analysts ratings to firm characteristics. The study builds on previous research on cross-sectional determinants of analysts ratings of corporate disclosure to add as potential determinants the variables of size, growth opportunities, and multinationality (Sutley, 1992; Imhoff, 1992; Imhoff and Thomas, 1989; Burg and Ludholm, 1993; Healy et al., 1999; Piotroski, 1999; Bloomfield and Wilks, 1999).

LITERATURE AND MOTIVATION

As in Lang and Lundholm (1993), the empirical

analysis is based on a survey of the theoretical and empirical literatures rather than relying on any particular model. Three potential explanatory variables are considered and grouped into three categories --- *growth* variables (growth opportunities), *structural* variable (firm size), and a *multinationality* variable (the degree of internationalization or foreign involvement).

Disclosure and Growth Opportunities

The firm may be viewed as a combination of assets-in-place and future investment options. Assets-in-place refer to the actual assets recognized in the balance sheet. Future investment options refers to the unobservable growth opportunities or options. The lower the proportion of firm value represented by assets-in-place, the higher the growth opportunities. Myers (1977) describes these potential investment opportunities as call options whose values depend on the likelihood that management will exercise them. Like call options, the growth options represent value to the firm (Kester, 1984). These growth options are intangible assets or ownership advantages that represent the investment opportunity set (IOS). The higher these growth options, the more likely there will be a good firm performance. In fact, theoretical models developed by Bushman and Indjejikian (1993) and Kim and Suh (1993) suggest that as a firm's IOS increases, stock price becomes relatively more informative about firm performance. One implication is that firms that have experienced an expansion in

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investment opportunities will increase their disclosures to match their market performance. In addition, the expansion of new investment opportunities or product markets may adversely impact accounting earnings in the short term (Abbott, 1999). The development of investment opportunities requires immediate outlays of capital while the payoffs may not be immediately reflected in accounting earnings. This is generally consistent with Yermack (1995) who finds evidence of an unexpectedly negative relationship between a firm's market-to-book-ratios (a known IOS proxy) and the granting of stock options. The implication is that firms experiencing an expansion in investment opportunities with no present payoffs should increase their disclosures to counteract any adverse effect to the accounting earnings in the short run. This is generally consistent with Skinner (1993) who finds evidence suggesting that the IOS affects the 'accepted set' of accounting procedures.

Taken as a whole, the results from both theoretical and empirical research suggest disclosure could be positively related to firm growth opportunities as measured by the investment opportunities set.

Disclosure and Firm Size

There are a number of reasons why we might expect a positive association between disclosure and firm size. One main reason is provided by *agency theory*. The proportion of outside capital tends to be higher for larger firms (Leftwich, Watts and Zimmerman, 1981). Similarly, agency costs increase with the amount of outside capital (Jensen and Meckling, 1976). Accordingly, the potential benefits from shareholder-debtholder-manager contracting--- including the extent of financial disclosure--- would also increase with firm size (Chow and Wong-Boren, 1987; Riahi-Belkaoui, 2000).

Other reasons include:

- a) *the disclosure cost hypothesis*, which maintains that the decreasing costs associated with larger firm size leads to more affordable disclosure (Lang and Lundholm, 1993),
- b) *the transactions cost hypothesis*, which maintains that the incentives for private information acquisitions are greater for large firms resulting in disclosure increasing with firm size (King, et al., 1990), and,
- c) *the legal cost hypothesis*, which maintains that the dollar values of damages in securities litigations are a function of firm size leading to higher disclosure with larger size (Skinner, 1992).

Disclosure and Multinationality

There are basically two main reasons why we

might expect a positive association between disclosure and multinationality.

A first reason is provided by the *capital-need hypothesis* whereby much of the impetus for voluntary disclosure by multinational firms surrounds the need to raise capital at the lowest possible cost (Choi, 1973; Spero, 1979). The pressure for information associated with global competition for capital manifest itself in the supplemental voluntary disclosures that multinational firms have been found to make (Meek and Gray, 1989; Meek, Roberts and Gray, 1995; Riahi-Belkaoui, 1994).

A second reason is provided by the *multiple listing hypothesis* (Cooke, 1989). Multinational firms are generally listed in more than one stock exchange. The firms with multiple listings are more likely to have a greater number of shareholders thereby making monitoring costs more significant. One way of reducing shareholders' monitoring costs and of alleviating the moral hazard problem is through disclosure in corporate annual reports.

METHOD

Model

This study examines the cross-sectional variations in analysts' published evaluation of firm's disclosure practices and hypothesizes that the analysts' ratings are increasing in the degree of multinationality, the level of growth opportunities as measured by the investment opportunity set and size. The model to be tested is as follows:

$$DISC_{it} = a_{0t} + a_{1t}MULTY_{it} + a_{2t}IOS_{it} + a_{3t}LR_{it} + e_{it} \quad (1)$$

Where:

$DISC_{it}$ = Average of total FAF disclosure score over the year t, t-1, and t-2.

$MULTY_{it}$ = Degree of multinationality of firm in year t as measured by foreign profit / total profit.

IOS_{it} = Investment opportunity set of firm i in year t.

LR_{it} = logarithm of total revenues at the end of year t.

The model was run for the 1986-1990 period and for each individual year in that period.

Sample

To ensure the greatest sample of firms for which data would be available for all variables, the initial sample chosen was for all firms included in *Forbes'* 1986 to 1990 survey of the largest US multinationals and in the annual volumes of the *Report of the Financial Analysts Federation Corporate Information Committee* (FAF, 1986-1990). A sample of 313 observations was

obtained. The disclosure scores for each firm were averaged over three consecutive years (year t, t-1, t-2) to obtain the disclosure metric (DISC) capturing a firm's current and past disclosure performance. Multinationality was measured by foreign profit / total profit. Size was measured by the logarithm of the total revenues at the end of the year. Both the measurement of corporate disclosure (DISC) and investment opportunity set (IOS) are explained in the next two sections.

The Disclosure Quality Measure (DISC)

To measure disclosure, this study uses data from the annual volumes of the *Report of the Financial Analysts Federation Corporate Information Committee* (FAF 1986-1990). It is generally considered as a comprehensive measure of the informativeness of a firm's disclosure policy (Lang and Lundholm, 1993, 1996; Farragher et al., 1984; Welker, 1995; Sengupta, 1998; Botosan, 1997). The data measure the firm's effectiveness in communicating with investors and the extent to which the firm provides information so that investors have the information necessary to make informed judgment across all types of disclosures. The disclosures provided through annual reports, quarterly reports, proxy statements, published information in the form of press releases and fact books, and direct disclosures to and communication with analysts are used for the evaluation of the firm's disclosure practices. In the FAF report, analysts evaluate the complete range of a firm's disclosures, summarizing their evaluations by score (out of 100 possible points) on the firm's total disclosure efforts and separate scores for the different disclosure categories. Although these scores are based on analysts' perceptions of corporate disclosures practices any potential biases or errors are minimized by a procedure that a) requires the reporting of average scores (across industry analysts), and b) rests on the use of detailed

guidelines and a comprehensive checklist of a criteria that allows a standardization of the rating process both within and across industries.

Because corporate audiences may be expected to consider both past and present disclosures in their reputation assessments, the disclosure metric, DISC, to be used in this study is the average of the total disclosure score of a firm over three consecutive years (years t, t-1, t-2).

Measuring the Investment Opportunity Set

There has not been a consensus on an appropriate proxy variable for the investment opportunity set. Similar to Smith and Watts (1992) and Gaver and Gaver (1993) we use an ensemble of variables to measure the investment opportunity set. The three measures of the investment opportunity set used are: market-to-book assets (MASS), market-to-book equity (MQV), and the earnings/ price ratio (EP). These variables are defined as follows:

$$\begin{aligned} \text{MASS} &= [(\text{Assets} - \text{Total Common Equity}) + (\text{Shares Outstanding} * \text{Share Closing Price})] / \text{Assets} \\ \text{MQV} &= [\text{Shares Outstanding} * \text{Share Closing Price} / \text{Total Common Equity}] \\ \text{EP} &= [\text{Primary EPS before Extraordinary Items}] / \text{Share Closing Price} \end{aligned}$$

The results of a factor analysis of the three measures of the investment opportunity set are shown in Table 1. One common factor appears to explain the intercorrelations among the three individual measures. The factor score for each firm is used as the measure of the investment opportunity set.

RESULTS

Descriptive Statistics and Correlation Analysis

Table 2 presents the descriptive statistics for all the variables used in the study. The median disclosure

TABLE 1
Selected Statistics Related to a Common Factor Analysis of Three Measures of the Investment Opportunity Set for Forbes' The Most International 100 US Firms

1. Eigenvalues of the Correlation Matrix		1	2	3
	Eigenvalue	1.0540	0.9868	0.9592
2. Factor Pattern				
	Factor	MASS	NQV	EP
		0.62821	0.66411	0.46722
3. Final Communality Estimates:		Total = 1.053944		
		MASS	MQV	EP
		0.394651	0.441045	0.218299
4. Standardized Scoring Coefficients				
	Factor	MASS	MQV	EP
		0.59603	0.63009	0.44329
6. Descriptive Statistics of the Common Factor Extracted from the Three Measures of the Investment Opportunity				
	Maximum	Third Median	First Quartile	Minimum Mean
	9.3595	3.2200	2.0450	1.5085
				2.5209
				1.9812

score is 56.31. A wide dispersion is present with a minimum of 47.31, a maximum of 76.73 and a standard deviation of 6.85. The median of the revenues of 15012 (in millions) indicates a sample of large U.S. firms, with a wide variation as indicated by the minimum and maximum values. The investment opportunity set varies from a minimum of 0.187 to a maximum of 7.383. Finally the multinationality variable, as measured by foreign profits / total profits varies widely from a minimum of 0.1 to a maximum of 7.5.

Table 3 presents the rank-order correlations for the variables used in this study. The low intercorrelations among the predictor variables used in the model indicate no reasons to suspect multicollinearity, and various diagnostic tests run on

could be a problem in these regressions. Accordingly, the reported t-statistics are based on White's (1980) heteroscedasticity corrected covariance matrix. The results, in all cases, corroborate the significance of size, multinationality and investment opportunity set as determinants of voluntary disclosure choice measured by the disclosure scores prepared by the Financial Analysts Federation.

To test the validity of the model, OLS regressions were also run with current disclosure as dependent variable and multinationality measured as either foreign revenues over total revenues or foreign assets over total assets. The results indicated again a positive relationship between disclosure quality on one hand and multinationality, size and growth opportunities on the other hand.

TABLE 2
Panel A: Summary Statistics

Variables	Number of Observations	Mean	Standard Deviation	Median	Minimum	Maximum
MULTY	313	48.375	58.131	38	0.1	87.5
DISC	313	57.868	6.895	56.312	47.315	76.730
IOS	313	0.561	0.821	0.511	0.187	7.383
R	313	1,5012.65	18,953.44	8331	2318	126,932

Panel B: Variable Definitions

MULTY : Multinationality measured as foreign profits / Total profits
DISC : FAF disclosure scale
IOS : Investment Opportunity set score
R : Total revenues

TABLE 3
Correlation among Selected Variables*

	DISC	MILTY	IOS	R
DISC	1.000 (0.00)	0.019 (0.698)	0.1799 (0.0009)	0.674 (0.0001)
MULTY		1.000 (0.00)	-0.1657 (0.0032)	0.0319 (0.5195)
IOS			1.000 (0.00)	0.0181 (0.3385)
R				1.000 (0.00)

* p-Values for two-tailed tests are provided in parentheses. Variables are defined in panel B of Table 2.

the derived regression models confirmed that it was not a problem.

Regression Analysis

To examine the incremental explanatory power of the variables expressed in equation (1), multiple regressions were estimated. Table 4 presents the results of the regression coefficients for all the independent variables, using measures of corporate disclosure as dependent variables. The Breusch and Pagan (1979) test for heteroscedasticity yielded a X^2 with a minimum of 133.82 and a maximum of 162.32 for all the regressions, indicating that heteroscedasticity

CONCLUSION

The paper investigated the determinants of voluntary disclosure choice, as measured by disclosure scores prepared by the Financial Analysts Federation. The empirical results are consistent with existing theories and theses on voluntary disclosure choice.

First, the result that the disclosure scores increase in firm size, as measured by the logarithm of revenues, is consistent with agency theory considerations, the disclosure cost hypothesis, the transaction costs hypothesis and the legal cost hypothesis.

Second, the result that disclosure scores increase

TABLE 4
Explaining Corporate Disclosure Quality

Independent / Dependent Variables	Intercept	MULTY	IOS	LR	F	Adjusted R ²
DISC (1986-1990)	-7.474 (-3.496)*	0.010 (2.348)*	1.026 (4.058)*	7.228 (26.203)*	240.24*	75.31
DISC 1986	-9.952 (-3.920)	0.011 (2.457)	1.026 (4.058)	7.228 (26.203)*	240.24*	70.66
DISC1987	-10.112 (-3.878)*	0.011 (2.510)*	1.049 (4.147)*	7.242 (25.591)*	228.47*	69.60
DISC 1988	-10.761 (-4.187)*	0.011 (2.515)*	0.998 (3.935)*	7.319 (96.149)*	241.99*	70.81
DISC 1989	-11.275 (-4.463)*	0.011 (2.659)*	1.007 (94.002)*	7.373 (26.925)*	253.33*	71.75
DISC 1990	-10.684 (-4.211)*	0.011 (2.593)*	1.021 (4.048)*	7.307 (26.536)*	245.83*	71.21

Variables are defined in Panel B of Table 2.

*Absolute value of t-statistics is parentheses, significant at $\alpha = 0.01$.

in growth opportunities, as measured by the investment opportunity set, is consistent with the role of the expansion of growth opportunities in leading firms to be more informative.

Finally, the result that disclosure scores increase in multinationality, as measured by foreign profits/total profits, is consistent with the capital-need hypothesis and the multiple listing hypotheses.

The results show that disclosure informativeness differs between firms as a result of growth, structural and multinationality variables. Future research is needed to examine the use of different proxies for the variables as well as to expand the number of variables most likely to influence the analyst ratings of corporate disclosure, as a measure of disclosure informativeness.

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