

**THE EFFECT OF MULTINATIONALITY ON
MANAGEMENT EARNINGS FORECASTS**

A Dissertation

by

BRUCE WAYNE RUNYAN

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2005

Major Subject: Accounting

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ABSTRACT

The Effect of Multinationality on Management Earnings Forecasts. (May 2005)

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This study examines the relationship between a firm's degree of multinationality and its managers' earnings forecasts. Firms with a high degree of multinationality are subject to greater uncertainty regarding earnings forecasts due to the additional risk resulting from the more complex multinational environment. Prior research demonstrates that firms that fail to meet or beat market expectations experience disproportionate market losses at earnings announcement dates. The complexities and greater uncertainty resulting from higher levels of multinationality are expected to be negatively associated with management earnings forecast precision, accuracy, and bias (downward versus upward).

Results of the study are mixed. Regarding forecast precision, two measures of multinationality (foreign sales / total sales and the number of geographic segments) are significantly negatively related to management earnings forecast precision. This was the expected relationship. Regarding forecast accuracy, contrary to expectations, forecast accuracy is positively related to multinationality, with regard to the number of geographic segments a firm discloses. Regarding forecast bias, unexpectedly, two measures of multinationality (foreign sales / total sales and number of countries with

foreign subsidiaries) are significantly positively related to more optimistic management earnings forecasts.

DEDICATION

I dedicate this dissertation to:

- my wife, Dana. It would not have happened without her support.

- my parents, Jim and Inez Runyan of Glenwood, Arkansas with my gratitude.

- Richard Wallace of the University of Arkansas at Monticello and Murphy Smith of Texas A&M University. They are men of faith and exemplars of Accounting faculty.

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I. INTRODUCTION

Business firms compete in a global marketplace. The more areas of the globe in which a firm operates, the more multinational it becomes. “Degree of multinationality” refers to the joint effects of the number of countries in which a firm has operations and the significance of those operations. This idea has also been referred to as “degree of internationalization” (Sullivan 1994), “international diversification” (Hitt et al. 1994), “foreign diversification” (Erwin and Perry 2000), and “multinational firm complexity” (Grant et al. 2000). The impact of operating in a multinational setting is multifaceted.

Management earnings forecasts are very important to perceptions about the financial strength of a company, particularly those companies publicly traded in the capital markets. Meeting or exceeding earnings forecasts is a widely accepted goal of corporate management. This study examines the effect of multinationality on the precision, accuracy, and bias of management earnings forecasts. The study seeks to answer the question: Do higher levels of multinationality lead to less precision, less accuracy, and downward bias in management earnings forecasts?

An extensive research stream has examined management earnings forecasts. A management earnings forecast is a voluntary disclosure of management’s estimate of firm profits or earnings per share for a period. Theory suggest that management is motivated to issue an earnings forecast to adjust earnings expectations that arise due to the information asymmetry between management and investors (Ajinkya and Gift 1984;

McNichols 1989; King et al. 1990). The desired expectation adjustment may be either positive (Miller 2002) or negative (e.g., Kasznik and Lev 1995; Skinner 1994). Other theories on management incentives to voluntarily disclose earnings forecasts include 1) to signal investors regarding management's ability to anticipate economic changes and adjust production plans (Trueman 1986), 2) to avoid litigation (Skinner 1994; Kasznik and Lev 1995; Baginski et al. 2002), 3) to reduce asymmetry before new capital offerings (Ruland et al. 1990), and 4) to reduce information asymmetry prior to a management sale of firm securities to both increase the stock price and prevent charges of trading on inside information (Noe 1999).

This study is motivated by the growing importance of multinationality in the economy (Meek and Thomas 2004). There has been little research to date on how the increase in multinationality has affected management earnings forecasts. While multinationality is an obvious proxy for complexity, it is a particular type of complexity. Both domestic and international business firms with multilayered operations are subject to environmental complexities that make the task of forecasting more difficult, but the complexities associated with international trade are experienced only by multinational firms.

Figure 1 presents a model of information flows mediated by the various border crossings inherent in global operations. Information asymmetry between management and outside stakeholders is more pronounced for firms operating in a complex

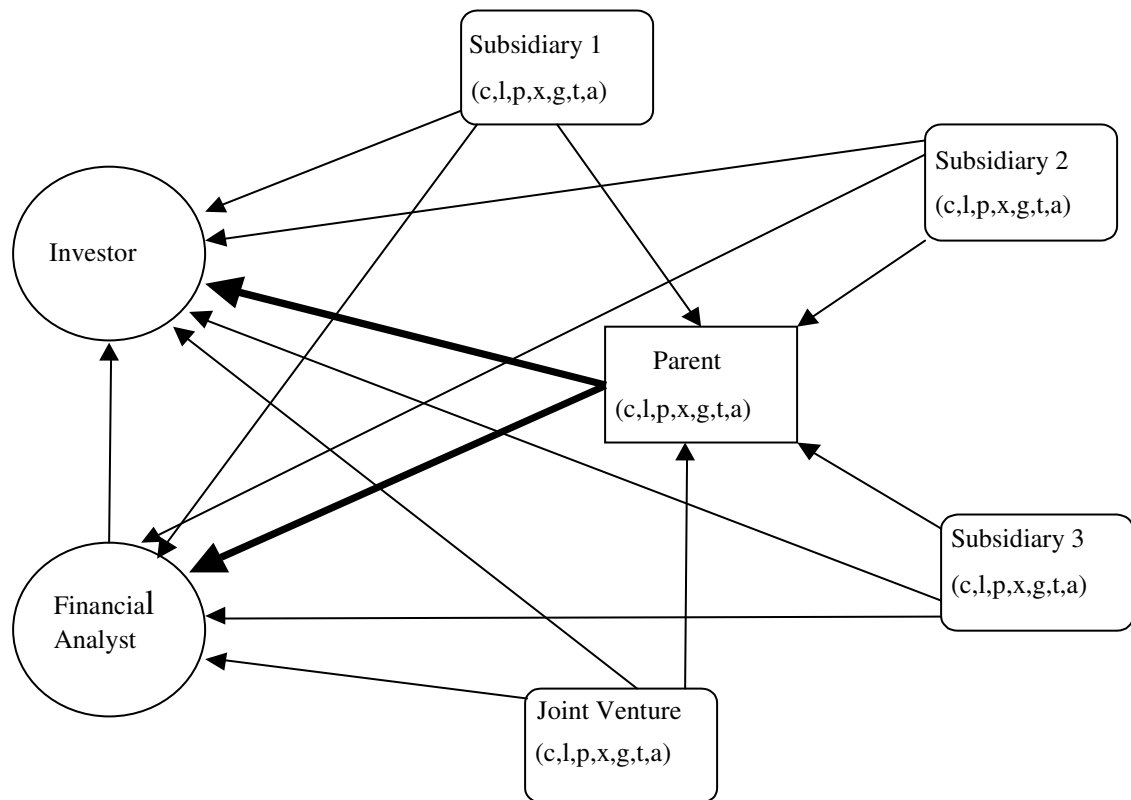
environment. Multinational firms operate in a more complex environment relative to strictly domestic firms (Cheng et al. 1997; Duru and Reeb 2002).

The costs of information to outside stakeholders increase as the degree of multinationality increases (Grant et. al 2000; Duru and Reeb 2002). The degree of multinationality increases with the number of border crossings, i.e., the extent to which foreign subsidiaries operate in environments that differ significantly from that of the parent. Geographic distance, cultural, legal, political and economic differences between the home and host countries, and differences in information infrastructure increase the costs of gathering and analyzing information. “Information infrastructure” in this sense refers to the presence of international business news organizations. Associated Press, Reuters, CNN, and other news providers cover some geographic areas more thoroughly than others. This difficulty of gathering and analyzing information is particularly pronounced for foreign subsidiaries using a business model that differs from the parent firm’s business model (i.e., unrelated diversification).

FIGURE 1

Information Flows of Subsidiary and Parent Information to Investors and Analysts

Each subsidiary operates in an environment that may differ substantially from the parent creating a complex operating, reporting, and information environment. Environmental differences that may contribute to complexity are cultural (c), legal system (l), political risk (p), exchange rate variability (x), geographic distance between parent and subsidiaries (g), differences in information technology (t), and differences in accounting standards (a).



While not specifically a factor associated strictly with international operations, unrelated diversification has been cited as affecting multinational performance and increases complexity and difficulty of financial analysis (Erwin and Perry 2000).

Given a higher cost of information to analysts relative to management, information asymmetry and investor uncertainty increase with an increase in the degree of firm multinationality. Miller (1972) hypothesizes that environmental complexity beyond an optimal level reduces the conceptual level with which investors comprehend financial information. Plumlee (2003) finds evidence to support the hypothesis that analysts find it difficult to assimilate relatively more complex information. As in the earlier studies, more recent studies indicate that information asymmetry increases as environmental complexity increases.

The same factors that contribute to increasing stakeholder uncertainty regarding earnings, and potentially cause investor expectations to diverge from management expectations, also complicate the process of producing an earnings estimate. Multinational firms must communicate with subsidiaries and aggregate subsidiary earnings across different operating environments. The challenges of communicating across borders are further exacerbated by the principal-agent relationship between the parent and foreign subsidiaries (Jensen and Meckling 1976; O'Donnell 1996; Roth and O'Donnell 2000). Foreign subsidiaries are in competition for firm resources and act in the best interest of the subsidiary.

Table 1 lists some of the factors that impede information flow across borders. Poor information flow increases management uncertainty due to reduced information.

This management uncertainty may work against finding the hypothesized relationships. Verrecchia (1990) shows analytically that management uncertainty increases the voluntary disclosure threshold. In other words, as the quality of managers' private information decreases, managers are less likely to voluntarily disclose. This suggests that firms with higher quality information will have a higher propensity to issue earnings forecasts. Since firms with high multinationality are hypothesized to have lower quality information, they are less likely to be included in the sample because they are less likely to forecast earnings.

The degree of multinationality increases the divergence of earnings expectations between analysts and management, and the same factors responsible for this divergence also make earnings forecast more difficult. This study examines the proposition that management will issue less accurate and more conservative forecasts as the degree of multinationality increases. Forecast precision is also affected. Studies have shown that forecast precision decreases as uncertainty increases (King et al. 1990; Hassell et al. 1988). Due to greater uncertainty in earnings, earnings forecasts are expected to be less precise as the degree of multinationality increases.

TABLE 1

**Impediments to the Collection and Transmission of Accounting Information Across
Cultural Borders or Geographic Distance**

<u>Structural Issues</u>	<u>Cultural Issues</u>
Weekends and Time Zones	Regional Credit Practices
Computer Compatibility	Local Business Standards
English Language Skills	Bargaining
Payroll	Bureaucracy
Country-specific GAAP	Personal Connections
Documentation	Lack of Transparency
<u>Price Differentials</u>	

From Beard and Al-Rai (1999).

The impact of multinationality on earnings forecast bias is particularly important in light of the Das et al. (1998) study. They find that analysts issue more optimistic forecasts for low predictability firms than for high predictability firms. Conservative forecasts are biased downward in that they are systematically less than earnings realization. Management is motivated to issue pessimistically biased earnings forecasts to avoid negative earnings surprises (Degeorge et al. 1999; Brown 2001). Negative earnings surprises have a disproportionate effect on stock prices (Lopez and Rees 2002; Bartov et al. 2002; Matsumoto 2002). In the presence of optimistic earnings forecasts, managers are motivated to adjust analysts' and investors' expectation downward to avoid disproportionate stock price effects.

This study is important because it extends the literature regarding the effect of foreign operations on business reporting as it pertains to management earnings forecasts (Meek and Thomas 2004). As globalization of firm operations increases the portion of earnings from foreign operations, investors and analysts should have an awareness of the effect, if any, that foreign operations have on voluntary management disclosure.

Prior studies (Duru and Reeb 2002; Erwin and Perry 2000) have shown that international diversification is associated with less accurate analysts' forecasts. The effect of multinationality on management earnings forecasts, however, has not been examined. Studies have considered multinational forecasts (Das and Saudagaran 1998; Fulkerson and Meek 1998), but these studies have focused on other aspects of the multinational firm such as Form 20-F reconciliations or the relationship of market cross-listings to analysts' forecasts. Other multinational-oriented studies have examined the

ability of geographic segment disclosures in SFAS 14 and SFAS 131 to add to forecast accuracy (Nichols, et. al. 1995; Nichols, et. al. 1996; Herrmann and Thomas 2000).

Herrmann and Thomas (2000) present a model of forecast precision using segment disclosures. Segment disclosures speak to the degree of multinationality. Herrmann and Thomas (2000), however, do not specifically address management earnings forecasts. International voluntary disclosure studies (Meek, et. al 1995; Frost and Pownall 1994) have been in the context of annual report voluntary disclosures and not management forecasts.

This study builds on a model developed by Baginski and Hassell (1997) to examine forecast precision. This model sets forecast precision as a function of the degree of multinationality. Models of forecast accuracy and bias are common in this literature (Duru and Reeb 2002; Das et al. 1998) and similarly set accuracy and bias as a function of the predictor variable, in this case the degree of multinationality. Control variables for size, length of forecast horizon, analysts following, firm diversification, and earnings volatility are consistent with prior research.

The remainder of this dissertation is organized as follows: Section II addresses relevant literature. Section III discusses attributes of multinational operations that affect information flows. Section IV develops the hypotheses. Section V presents the research methodology. Section VI presents the results of the tests of hypotheses. Section VII provides the summary, limitations, and future extensions of the study.

II. RELEVANT LITERATURE

This study is at the intersection of research on the effects of multinationality on firm operations and performance, and management earnings forecasts. This section reviews relevant literature in these two areas. This section also reviews literature on the meaning and measurement of multinationality.

This study posits that the degree of multinationality decreases earnings forecast precision and accuracy, and increases downward bias because of an increase in complexity and uncertainty of firm operations. This increased complexity and uncertainty arises from three distinct but related effects of multinationality that all contribute to making forecasting more difficult for the parent firm. Effects of multinationality include the following: (1) difficulties in communicating across borders, (2) a principal-agent relationship between the domestic parent and foreign subsidiary, and (3) an increase in various risks associated with increasing the degree of multinationality. This section presents prior relevant research concerning operational complexities inherent in multinational operations that may affect management earnings forecasts.

Management Earnings Forecasts

Baginski et al. (1993) show an association between management forecast precision and uncertainty. Managers who have a higher degree of certainty regarding earnings issue more precise earnings estimates. The implication is that those events and environmental factors that contribute to uncertainty result in less precision and accuracy in management forecasts.

An extensive management forecast literature has examined both upstream and downstream issues relevant to management forecasts. These studies have examined the determinants of management forecast accuracy, precision, venue, and timing, and consequences of management forecasts for analysts, investors, and security prices. Recent research has focused on the relationship of management forecast to financial analysts forecasts revisions (Hassell et. al. 1988; Baginski and Hassell 1990), equity valuation (Baginski et. al. 1993), auditor quality (McConomy 1998), earnings management (Kaznik 1999), and the effect on other firms in the industry (Baginski 1987).

Studies have examined the effect of prior management forecast accuracy on investor expectations (Hirst et al. 1999) and management forecast as warnings in the face of earnings surprise (Kaznik and Lev 1995). Hirst et al. (1999) provide evidence that investor expectations are influenced by prior management's forecast accuracy interacting with the forecast form.

Most earnings forecast studies fit into a three-stage model of voluntary disclosure developed by King et al. (1990). The first decision managers must make is whether to voluntarily disclose earnings forecasts or other information. The second decision in their model is whether to issue private forecast through analysts or used public channels. Regulation Fair Disclosure (FD) precludes sharing information with only analysts so this option and decision point is no longer a consideration. The last decision in their model, "tertiary choices regarding public forecast disclosure," is concerned with the details of the disclosure such as precision, venue, timing, and ancillary information. The current

study examines whether the degree of multinationality influences the precision, accuracy, and bias of management forecasts.

Early papers (Patell 1976, Ainkya and Gift 1984) showed that management earnings forecasts move markets, i.e., are new information to the markets. Like other disclosures, both voluntary and mandatory, management earnings forecasts reduce information asymmetry and, in turn, reduce investor uncertainty and ultimately reduce the costs of capital to the firm.

The effect of management earnings forecasts to lower the costs of capital is of particular importance to corporations. On the one hand, firms that have the greatest information asymmetry can benefit the most by reducing that asymmetry. On the other hand, the very reasons that create the asymmetry make accumulating the information needed to make forecasts more costly. Arguably, those firms whose operations cross multiple borders may be motivated to issue conservative and less precise earnings forecasts because of the additional costs of aggregating earnings information across borders. Due to greater information asymmetry as firms increase in multinationality, firms would receive greater benefit from making more precise, more accurate, and less biased forecasts and could therefore afford greater costs to provide these forecasts.

Effects of Multinationality on Firm Operations and Performance

Past studies have examined information flows across borders (e.g. Egelhoff 1991). A basic assumption of this study is that the process of aggregating information across borders degrades the signal and increases the difficulty of accurately forecasting earnings.

Management literature is filled with research on multinational performance and voluntary disclosure. Information asymmetry occurs between management and other stakeholders. Management will voluntarily disclose information and reduce this information asymmetry for a variety of reasons (e.g., lower cost of capital; reduce liability in case of losses). A key insight is that foreign subsidiaries are motivated to manage the information flow to the home office for many of the same reasons as the parent seeks to manage information flow to investors. Agency issues exist between the foreign subsidiary and parent. Foreign subsidiaries have their own agenda. While this is true of all parent-subsidiary relations, the border-crossing aspect of multinational operations adds a unique aspect to the relationship not present in purely domestic organizations. Foreign subsidiaries are likely to have varying degrees of “truthful upward communication of private information” (Chow et al. 2000).

Measurement and Meaning of Multinationality

Sullivan (1994) convincingly argues that the degree of multinationality is a complex concept and that traditional measures of multinationality such as “Foreign Sales/Total Sales” or “Foreign Assets/Total Assets” do not fully capture this complexity. He states, “Notwithstanding variation in their [multinational firms’] absolute and relative internationalization, scholars typically treat multinational corporations (MNCs) as isomorphic in their sampling method.” He goes on to suggest that this introduces error into the sampling. He prefers the use of a “Degree of Internationalization” index composed of the factors that he found to be significantly related to the multifaceted concept. These factors are Foreign Sales/Total Sales, Foreign Assets/Total Assets, top

managers' international experience, overseas subsidiaries as a percentage of total subsidiaries, and the psychic dispersion of international operations (measured by location of firm subsidiaries within the ten psychic zones identified by prior research). Some accounting researchers (Duru and Reeb 2002; Belkaoui 2002) have embraced the use of an index to capture the degree of multinationality.

This study uses various measures of the degree of multinationality to capture the depth and breadth facets of multinational operations. Two frequently used measures of multinationality are Foreign Sales/Total Sales and Foreign Assets/Total Assets. This may not accurately reflect the number of "border crossings" with which the firm must contend. For example, a Detroit firm with significant foreign sales and assets only in Windsor, Canada will not have the communication and coordination problems of a firm with subsidiaries in several countries. The number of geographic segments is suggestive of firm breadth; other studies have used the number of countries in which a firm has a subsidiary. Firms operating in a number of geographic segments will have greater operational complexity, but the effect on firm operations is moderated by the contribution each of these makes to total firm operations. The number of countries in which a firm lists a subsidiary is another measure of firm breadth. Nguyen and Crosset (1995) caution researchers against comparing results across studies that use different measures of multinationality, and show that different measures can lead to different results.

III. ATTRIBUTES AFFECTING INFORMATION FLOW IN MULTINATIONAL FIRMS

Several attributes of multinationality affect information flow in multinational firms. Among these are geographic and cultural distance, legal system and accounting standards, technological standards, and agency and monitoring considerations. Each of these attributes of information flow in multinational firms increases the costs of aggregating information necessary to provide earnings forecasts. Besides data collection and processing, Gray et al. (1990) list several other factors that constrain voluntary information disclosure in U.S. and U.K. firms. These include the cost of competitive disadvantage, cost of auditing, possibility of claims from employees or trade unions, threat of takeover or merger, cost of publication, technical processing problems, the possibility of intervention by government agencies, the possibility of claims from political or consumer groups, and the possibility of intervention by taxation authorities.

Geographic and Cultural Distance

Geographical and cultural distance affects management communications to the home office and increase uncertainty with regard to foreign subsidiary performance. George and Jones (1996), in their discussion of communication and decision-making, indicate:

Global expansion greatly increases the problems associated with organizational communication and decision-making. Basic language differences make encoding and decoding messages difficult, and physical distances and differences in time zones further complicate the communication process. (George and Jones 1996, 565)

Similarly, Gomez-Mejia and Palich (1997) point out:

As cultural distance increases, the challenges for the organizational control system increase proportionately because complete and accurate information about agent performance becomes more difficult and expensive to obtain.

A major global communication issue facing business firms is cross-cultural understanding and diversity (Geddie 1999). The reduced understanding associated with greater multinationality manifests itself in two ways. First, referring to the additional risk incurred by investors in MNCs, Caves (1996) points out,

These include the political risks of being unable to deter the hostile action of a foreign government, the economic risks implicit in the higher costs of information about the foreign environments (one buys less than complete information, and so faces greater risks)... (Caves 1996, 150)

Second, management's understanding of subsidiary operations is affected by the degree of multinationality. Beard and Al-Rai (1999) describe communication and coordination problems associated with a U.S. parent, a low-context culture, and subsidiaries located in a high-context culture (Hall 1976). These studies detail structural and cultural issues that impede the flow of information from subsidiary to parent (cf., Table 1). Structural issues include weekends and time zones, computer compatibility, English language skills, country-specific GAAP, documentation, and price differentials. Cultural issues include regional credit practices, local business standards, bargaining, bureaucracy, personal connections, and lack of transparency.

Chow et al. (2000) provide evidence that the degree of misrepresentation in information flows from subordinates to superiors varies by culture. The difficulties of integrating culturally diverse operations are also explored in Park et al. (1996). Their study of communication difficulties is in the context of U.S. firms with subsidiaries in South Korea. They state:

Communication problems in foreign subsidiaries stem from a variety of sources and lead to a number of negative consequences for both parent country and host country managers. (Park 1996, 79)

Legal System and Accounting Standards

Differences in legal systems, including tax systems, restrictions on capital movement, changing trade agreements and developments in international laws and court cases, between the two countries increase the complexity of preparing accurate earnings estimates. Differences in accounting standards add even more complexity in doing business between two countries (Salter and Smith 1996).

Patricia L. O'Malley (2004), board member of the International Accounting Standards Board, in her address to the International Accounting section of the American Accounting Association, cited reduction of financial statement preparation costs as a benefit of standards harmonization. Conversion of multiple GAAPs can be a substantial cost. Firms with tens and even hundreds of subsidiaries must deal with converting host country financial statements into home country financial statements. The knowledge of both home and host country GAAP required of financial statement preparers to accomplish the roll up of subsidiary statements is challenging and may increase the rate of error occurrence.

Technological Standards

Rapid advances in information technology have had a revolutionary impact on global business. Linking information networks across borders often involves different hardware and software standards (Smith et al. 2003). As technology has become

available to link systems using differing configurations of hardware and software, this difficulty besetting cross-border communications is easing to some extent.

Basic financial data transmitted to the home office on a routine basis should not be subject to noise in the communication channel to the same extent as qualitative information (Egelhoff 1991). Qualitative information that does not easily fit in a standardized format, but is valuable to the home office in predicting future performance, is much more subject to noise in the communication process. This communication is also generally via an “information poor” medium of written communications as opposed to the more “information rich” medium of face-to-face communication. Firms that have a high degree of multinationality generally have a higher degree of both cumulative geographic and cultural distance between the home office and subsidiaries. The resulting “noise” in intra-MNC communications reduces the reliability with which managers can predict earnings. MNC communications with analysts and shareholders will reflect this reduced reliability.

Agency and Monitoring Considerations

Foreign subsidiaries and employees on different sides of various borders from the domestic parent firm are much more difficult to monitor and are likely to have agendas of their own that may or may not be congruent with parent firm goals. While the firm as a whole may have policies against earnings manipulation, subsidiaries sequestered behind numerous monitoring-impairing borders (e.g., geographic and linguistic) may be motivated to manipulate earnings, particularly in light of competition between subsidiaries for scarce resources (Mudambi and Navarra 2004). This line of reasoning

ties the paper to the question about the efficacy of multinational audits. Prior studies indicate that auditing across borders is more susceptible to audit failures. Research shows that audit quality is affected by different cultures (Salter and Smith 1996).

Multinational enterprises operate in a variety of geographically, culturally, technologically, politically, legally and economically diverse environments, and are subject to risks beyond those of domestic firms. These antecedent conditions require complex management information, reporting and control systems (Hamilton and Kashlak 1999; Egelhoff 1991). Figure 1 illustrates the information flows necessary for management, investors, and analysts to arrive at earnings expectations. Information regarding foreign operations flows to both management and to investors and analysts. As firms increase their level of multinationality, geographic and cultural distance, legal systems (including capital restrictions and corporate governance issues), political risks, exchange rate risks, and differences in information infrastructure (i.e., availability and sophistication of business news media covering firm operations) all contribute to operational and reporting complexity. This diversity of operating environments and complexity of accounting information systems makes forecasting foreign earnings difficult for management, financial analysts and investors.

Grant et al. (2000) show that the number of analysts following a firm decreases with the level of multinationality as measured by lines of businesses and geographic operating regions. Complexity drives up the costs of information acquisition and analysis and generates “results in multiple-earnings-return relationships that are more difficult to understand,” (p. 5). Since fewer analysts follow MNCs with greater breadth,

the information available to shareholders is reduced. The complexity of extreme multinationality that drives analysts away similarly affects management in their efforts to acquire and analyze information from foreign subsidiaries.

Jensen and Meckling (1976, 308) define an agency relationship as, “a contract under which one or more (principals) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent.” Agency theory suggests that managers of foreign subsidiaries, as agents for the domestic parent/shareholder, are motivated to pursue strategies that maximize their own wealth. This may include many of the same strategies that the parent firm uses in relations with current and prospective owners (earnings and expectations management). Firms operating in a diversity of cultural and technological environments may find it more difficult to arrive at efficient contracts and monitor subsidiary operations. This will increase uncertainty with regard to estimating earnings.

Kwok and Reeb (2000), Reeb et al. (1998), Bartov et al. (1996) have provided evidence that the effect of international diversification on risk depends on the combination of home and host countries. Kwok and Reeb (2000) find evidence that firms from stable economies increase their risk when they invest in less stable economies and firms from less stable economies decrease their risk when they invest in more stable economies. Since the sample is U. S. firms, a stable economy, this finding suggests that nearly all U.S. investments abroad will increase risk. Firms with a greater degree of multinationality are more likely to be invested in increasingly less stable economies. This suggests that volatility increases with the degree of multinationality. Earnings

volatility should decrease forecast accuracy and precision and encourage management to guide earnings downward.

IV. HYPOTHESES

The hypotheses are based on the expectation that the degree of multinationality will increase management uncertainty with regard to earnings, which will in turn affect management forecasts. Greater uncertainty is associated with a range forecast (Hirst, et al. 1999, Rapoport et al. 1990) rather than a point forecast. The predicted relationship is similar to that found by Duru and Reeb (2002) for analysts' forecasts and is consistent with the Das et al. (1998) finding that forecast bias is a function of the predictability of earnings. The hypotheses are as follows:

Hypothesis 1: Firms with a higher degree of multinationality will issue less precise earnings forecasts.

Hypothesis 2: Firms with a higher degree of multinationality will issue less accurate earnings forecasts.

Hypothesis 3: Earnings forecasts of firms with a higher degree of multinationality will be biased downwards.

These hypotheses are rooted in the proposition that the additional costs of aggregating earnings information across borders will be problematic given the uncertainty created by multiple border-crossings. Gray et al. (1990) find that quantified forecasts are perceived by managers in the U.S. and U.K. as incurring major net costs. Firms that desire the benefits associated with voluntary disclosure will choose a lower level of precision and accuracy, and hedge their quantified forecasts by intentionally indicating lower than expected earnings.

V. RESEARCH METHODOLOGY

Methodology

This study uses four alternative specifications of the variable of interest, i.e., multinationality. The degree of multinationality is measured by Foreign Sales/Total Sales, Foreign Assets/Total Assets, the number of geographic segments listed by the firm, and the number of countries in which the firm lists subsidiaries.

The hypotheses are tested using the following regression:

$$(H1) \text{ PRE}_i \text{ (H2) ACC}_i, \text{ (H3) BIAS}_i = \alpha_0 + \alpha_1 \text{DOM}_i + \alpha_2 \text{FHORIZON}_i + \\ \alpha_3 \text{VOLAT}_i + \alpha_4 \text{LSIZE}_i + \alpha_5 \text{DIV}_i + \alpha_6 \text{ANL}_i + \varepsilon_i$$

where:

PRE _i	= 3 for point estimates, 2 for range estimates, 1 for open-interval forecasts, and zero for general impression forecasts.
ACC _i	= the absolute value of (forecasted earnings less actual earnings)/actual earnings).
BIAS _i	= (forecasted earnings less actual earnings)/actual earnings.
DOM _i	= FS/TS, FA/TA, number of geographic segments, and number of foreign subsidiaries, respectively.
FHORIZON _i	= number of days between forecast date and the end of the forecasted divided by 30.
VOLAT _i	= the standard deviation of the return on assets for the previous five-year period.
LSIZE _i	= the log of firm size. Total sales for the forecasted period.
DIV _i	= the number of primary and secondary SIC codes in which the firm had operations.
ANL _i	= number of I/B/E/S analysts issuing forecasts for the firm in the month prior to the forecast.

Hypothesis 1 concerns the relationship between the degree of multinationality and management earnings forecast precision, and is tested by the methodology described in Baginski and Hassell (1997). As in Baginski and Hassell (1997), logistic regression is used to examine the relationship between the ordinal dependent variable and the variable

of interest. Logistic regression is the appropriate statistical technique given that the dependent variable is ordinal (McCullagh 1980), displays multivariate nonnormality (Press and Wilson 1978), and that the sample size is large relative to the number of variables (Stone and Rasp 1991).

Management forecast can be either quantitative or qualitative. Quantitative forecasts can be a point estimate, range, or an open-interval estimate (greater than or less than forecasts). Qualitative forecasts are general expressions of good or bad news. These forecasts represent a decreasing order of precision. As in Baginski and Hassell (1997), point, range, open-interval, and general impression forecasts are coded 3, 2, 1, and 0.

Hypothesis 2 predicts that forecast accuracy will be reduced as the degree of multinationality increases. Forecasts accuracy is calculated as the absolute value of the forecast less the actual earnings for the period and divided by the actual earnings. Scaling forecast error by actual earnings is consistent with prior research (Erwin and Perry 2000; Hassell and Jennings 1986; Richards et al. 1977).

$$\text{ACCURACY}_i = \text{abs. value } \frac{\text{FORECAST}_i - \text{EARN}_i}{\text{EARN}_i}$$

Hypothesis 3 predicts that earnings forecasts will become increasingly negatively biased as the degree of multinationality increases. Bias is calculated as:

$$\text{BIAS}_i = \frac{\text{FORECAST}_i - \text{EARN}_i}{\text{EARN}_i}$$

ACC measures the absolute error in the forecast without regard to sign. It is expected to be negatively associated with the degree of multinationality.

BIAS measures the sign of the forecast error. Conservative forecasts are below realized earnings. As the degree of multinationality increases, forecasts are expected to become more conservative.

Size (LSIZE) is a proxy for the amount of public information available (Atiase 1985). Multinational firms are usually larger than strictly domestic firms. Size is associated with a more complex environment, which should increase uncertainty and forecast variability. This variable is calculated as the natural log of the firm's total sales.

FHORIZON is the time between the forecast and the period end. Prior studies (Das and Saudagaran 1998; Brown 1993) have shown that forecasts with a greater horizon are less accurate. Kang et al. (1994) and Das et al. (1998) provide evidence that forecasts over a longer horizon are more optimistic. Forecast horizon is calculated as the number of days between the management forecasts and the year-end divided by 30.

VOLAT measures earnings volatility. Earnings volatility increases the difficulty in making an accurate forecast. Firms with higher volatility are more likely to issue conservative earnings guidance given the penalties for missing earnings targets. In a study of analysts' forecasts, Das et al. (1998) found that forecast bias is a function of earnings predictability. VOLAT is measured by the standard deviation of the return on assets for the previous five-year period before the period forecasted.

DIV measures firm industrial diversification. Prior research on the effect of multinationality on analysts' forecasts suggests that accuracy declines with greater

diversification (Erwin and Perry 2000). Arguably, this additional complexity would also affect manager's ability to forecast earnings. This variable is measured by the number of unique primary and secondary SIC codes listed for the firm in the Mergent Online database.

ANL is the number of analysts forecasting earnings per share for the month immediately preceding the management forecast. This variable is consistent with both Baginski and Hassell (1997) and Duru and Reeb (2002). Baginski and Hassell found a statistically significant positive relationship between analysts following and management forecast precision. This is somewhat counterintuitive. By producing more precise forecast, managers may be seen to drive out private information production and reduce the number of analysts following the firm. Higher precision, however, attracts additional analysts. A higher degree of precision allows analysts to reduce the weighting of privately acquired information and reduces uncertainty in the forecast revision process. Following a firm with more precise forecasts reduces analysts' risk of producing a significantly deviant forecast. Multinationality increases the costs of private information production. As firms become more multinational, fewer analysts should be willing to incur the additional costs of information acquisition across borders. The DOM variable is expected to include some of the variation that previously would have been captured in the ANL variable.

Data

Sample management earnings forecasts are drawn from the First Call "Company Issued Guidance" database. The database provides data for 19,757 management

forecasts of annual earnings. Forecasts in the initial sample include only U.S. firms that do not have a significant event such as a merger or accounting change during the period covered by the forecast. Starting at the beginning of the alphabetical list of companies, companies with some degree of Foreign Sales were selected. Of the sample of 313 firms selected, 38 firms were eliminated due to incomplete information. An additional 12 observations were eliminated as being influential observations as determined by standard diagnostic statistics (studentized residuals, dffits, dfbetas). Firms operating in financial and regulated industries are excluded from the sample. These firms have additional reporting requirements that may affect the type, accuracy and bias of management forecasts.

Data necessary for calculating the Foreign Sales / Total Sales, Foreign Assets / Total Assets, and the number of geographic segments were obtained from Compustat, as was actual earnings for the period forecasted. The number of foreign subsidiaries, return on asset data, and SIC code information was obtained from Mergent Online.

Accuracy (ACC) and Bias (BIAS) are calculated from the forecasted earnings from First Call and the actual earnings from Compustat. Prior research uses an unscaled measure of accuracy and bias (Das and Saudagaran 1998).

The precision variable (PRE) is coded 0, 1, 2, 3 based on the Company Issued Guideline (CIG) codes in First Call (see Appendix). “0” represents general impression forecasts; “1” represents open-ended forecasts (forecasts that set an upper or lower bound); “2” represent range forecasts; and “3” represents point forecasts. Codes were assigned by a panel of four accounting and finance faculty using a one-iteration Delphi

technique. Table 2 presents the sample distributions for tests of management forecasts by year, precision, and firms. Appendix provides the coding of First Call Management Earnings Forecasts.

TABLE 2**Sample Distributions for Tests of Management Earnings Forecasts**

By Forecast Year:

2001	105
2002	<u>158</u>
Total	<u>263</u>

By Forecast Precision (sample code):

Point (3)	64
Closed-interval (range) (2)	175
Open-interval (1)	21
General impression (0)	<u>3</u>
Total	<u>263</u>

VI. RESULTS

Multinationality and Management Forecast Precision

Descriptive statistics for the tests of earnings forecast precision are presented in Table 3. Correlation statistics are presented in Table 4.

Results of tests of management forecast precision using various measures of multinationality are provided below. The dependent variable (PRE) is coded as 0, 1, 2, 3 as management earnings forecasts go from least precise (general impression forecasts) to the most precise (point estimates).

Table 5 specifies degree of multinationality as Foreign Sales/Total Sales (n=241). The Chi-Square Likelihood Ratio is 24.513 (p=0.0004) for this model. The coefficient for this degree of multinationality measure is significantly negative (p=0.0190) indicating that as multinationality increases firms issue less precise forecasts. This is consistent with Hypothesis 1. FHORIZON is significantly positive (p=0.0358). This indicates that as the time between the management earnings forecast and the end of the period forecasted increases the forecast becomes more precise. This is a surprising result inconsistent with the direction predicted and prior research. Bagniski and Hassell (1997) found a strongly significant negative relationship between forecast horizon and forecast precision. DIV is also significantly positive in this model specification (p=0.0206). This is also a surprising result. A positive relationship suggests that as the operational diversity increases (the number of SIC codes increases) management earnings forecast become more precise.

TABLE 3

Descriptive Statistics for Tests of Management Earnings Forecasts, for a Sample of 263 Firm-Year Observations for the Period 2001-2002

	<u>Mean</u>	<u>Standard Deviation</u>	<u>Minimum</u>	<u>Median</u>	<u>Maximum</u>
<i>Dependent Variables</i>					
Forecast Precision (PRE)	2.16	0.59	0	2	3
Negative Absolute Forecast Error (ACC)	0.42	1.70	0	0.08	21.22
Signed Forecast Error (BIAS)	0.33	1.72	-1.75	0.00	21.22
<i>Hypothesized Variable</i>					
Degree of Multinationality (DOM)					
Foreign Sales/Total Sales	0.33	0.17	0.03	0.31	0.71
Foreign Assets/Total Assets	0.24	0.14	0.03	0.17	0.71
# Geographic Segments	2.61	1.81	1.00	3.00	9.00
# Countries	21.30	18.25	1.00	15.00	82.00
<i>Control Variables</i>					
Forecast Horizon (FHORIZON)	7.16	4.14	0.11	6.96	24.49
Earnings Volatility (VOLAT)	5.35	7.54	0.90	3.63	42.29
Firm Size (LSIZE)	8.10	1.19	5.51	8.12	10.11
Industry Diversification (DIV)	3.22	1.60	1.00	3.00	6.00
Number of Analysts (ANL)	12.77	7.69	1.00	12.00	32.00

Note: Precision (PRE) is forecast precision coded 3 for point forecasts, 2 for range forecasts, 1 for open -interval forecasts, and zero for general impression forecasts. Accuracy (ACC) is the absolute forecast error; BIAS is the signed forecast error, defined as the difference between the management earnings forecast and the actual earnings, divided by the actual earnings; Degree of multinationality (DOM) is computed using four separate measures – the foreign sales ratio (Foreign Sales/ Total Sales), foreign asset ratio (Foreign Assets/ Total Assets), the number of geographic segments, and the # of countries in which the firm has a subsidiary; Industrial diversification (DIV) is the number of SIC codes in which the firm had operations; Firm size (LSIZE) is the log of total sales for the period; Forecast horizon (FHORIZON) is the number of days between forecast date and the end of the forecasted period divided by 30; Earnings volatility (VOLAT) is the standard deviation of the return on assets for the five year period preceding the forecasted year during the month preceding the month of the forecast; Analysts following (ANL) is the number of I/B/E/S analysts following the firm at the time of the forecasts.

TABLE 4

Results of Correlation Analysis

	<u>ACC</u>	<u>BIAS</u>	<u>FS/TS</u>	<u>FA/TA</u>	<u>#CTY</u>	<u>#GS</u>	<u>FHORIZON</u>	<u>VOLAT</u>	<u>LSIZE</u>	<u>DIV</u>	<u>ANL</u>
ACC		0.98***	0.19***	-0.02	-0.04	-0.02	0.16***	0.01	-0.05	-0.13**	0.03
BIAS	0.98		0.21***	-0.04	-0.01	-0.00	0.16**	0.02	-0.04	-0.09	0.04
DOM	0.19***	0.21***		0.67***	0.52***	0.37**	0.05	0.07	0.07	-0.01	0.30***
FS/TS											
FA/TA	-0.02	-0.04	0.67***		0.41***	0.20	0.02	0.16	0.07	-0.10	0.11
#CTY	-0.04	-0.01	0.52***	0.41***		0.10	0.01	-0.08	0.44***	0.08	0.36***
#Geographic Segments (GS)	-0.02	-0.00	0.37***	0.20	0.09		0.01	0.07	-0.06	0.09	0.07
FHORIZON	0.16***	0.16**	0.05	0.02	0.01	0.01		0.01	-0.01	-0.02	0.01
VOLAT	0.01	0.02	0.08	0.16	-0.08	0.07	0.01		0.12**	0.10	0.11*
LSIZE	-0.05	-0.04	0.07	0.07	0.44***	-0.06	-0.01	0.12**		0.22***	0.55***
DIV	-0.13**	-0.09	-0.01	-0.10	0.09	0.09	-0.02	0.10	0.22***		-0.16**
ANL	0.03	0.04	0.30***	0.11	0.36***	0.07	0.01	0.11*	0.55***	-0.16**	

Note: ***, **, * Significant at the 1 percent, 5 percent, and 10 percent levels respectively.

TABLE 5

**Cross-sectional Logistic Regression Tests of the Association between
Multinaionality and Management Forecast Precision, after Controlling for Other
Determinants of Forecast Precision - DOM = Foreign Sales/ Total Sales (n= 241)**

$$PRE_i = \alpha_0 + \alpha_1 DOM_i + \alpha_2 FHORIZON_i + \alpha_3 VOLAT_i + \alpha_4 LSIZE_i + \alpha_5 DIV_i + \alpha_6 ANL_i + \varepsilon_i$$

<i>Hypothesized Variable</i>	<u>Estimate</u>	<u>Chi-square</u>	<u>p-value</u>
Degree of Multinationality (DOM – FS/TS)	-2.102	5.501	0.0190
<i>Control Variables</i>			
Forecast Horizon (FHORIZON)	0.0738	4.405	0.0358
Earnings Volatility (VOLAT)	0.003	0.011	0.9164
Firm Size (LSIZE)	0.1561	0.9005	0.3426
Operational Diversity (DIV)	0.246	5.358	0.0206
Analyst Following (ANL)	-0.027	1.133	0.2871

Likelihood Ratio Chi-square = 24.513 (p = 0.0004)

PRE _i	= 3 for point estimates, 2 for range estimates, 1 for open-interval forecasts, and zero for general impression forecasts.
DOM _i	= Foreign Sales / Total Sales.
FHORIZON _i	= number of days between forecast date and the end of the forecasted period divided by 30.
VOLAT _i	= the standard deviation of the return on assets for the previous five-year period.
LSIZE _i	= the log of firm size. Firm size is the log of total sales during the period.
DIV _i	= the number of primary and secondary SIC codes in which the firm had operations.
ANL _i	= the number of I/B/E/S analyst issuing forecast in the month preceding the management earnings forecast.

Table 6 specifies degree of multinationality as Foreign Assets/Total Assets (n=37, number of sample firms with available data =11). The small sample size results from the unavailability of foreign asset data for the selected firms. This model is not significant (Chi-Square Likelihood Ratio $p=0.4932$). The small number of total observations and small number of sample firms with foreign asset data preclude drawing any inferences from this model specification.

Table 7 specifies degree of multinationality as the number of geographic segments listed by the company for the forecasted period. DOM is significantly negative ($p=0.0873$) indicating that as the number of geographic segments increase management issues less precise earnings forecasts. This is consistent with Hypothesis 1. As in the first model, FHORIZON ($p=0.0376$) and DIV ($p=0.0305$) are significantly positively related to forecast horizon. This is counterintuitive and inconsistent with the predicted direction and prior research. ANL is significantly negative in this model specification ($p=0.0922$). This is inconsistent with Baginski and Hassell (1997). They found that higher precision was associated with more analysts following the firm's forecasts.

TABLE 6

**Cross-sectional Logistic Regression Tests of the Association between
Multinationality and Management Forecast Precision, after Controlling for Other
Determinants of Forecast Precision - DOM = Foreign Assets/ Total Assets (n=37)**

$$PRE_i = \alpha_0 + \alpha_1 DOM_i + \alpha_2 FHORIZON_i + \alpha_3 VOLAT_i + \alpha_4 LSIZE_i + \alpha_5 DIV_i + \alpha_6 ANL_i + \varepsilon_i$$

<i>Hypothesized Variable</i>	<u>Estimate</u>	<u>Chi-square</u>	<u>p-value</u>
Degree of Multinationality (DOM - FA/TA)	-1.798	0.531	0.4663
<i>Control Variables</i>			
Forecast Horizon (FHORIZON)	0.0996	0.9877	0.3203
Earnings Volatility (VOLAT)	0.0206	0.0167	0.8972
Firm Size (LSIZE)	0.3274	0.1965	0.6575
Operational Diversity (DIV)	-0.2589	0.2749	0.6001
Analyst Following (ANL)	-0.1130	0.7883	0.3746

Likelihood Ratio Chi-square = 5.403 (p=0.4932)

PRE _i	= 3 for point estimates, 2 for range estimates, 1 for open-interval forecasts, and zero for general impression forecasts.
DOM _i	= Foreign Assets / Total Assets.
FHORIZON _i	= number of days between forecast date and the end of the forecasted period divided by 30.
VOLAT _i	= the standard deviation of the return on assets for the previous five-year period.
LSIZE _i	= the log of firm size. Firm size is the log of total sales during the period.
DIV _i	= the number of primary and secondary SIC codes in which the firm had operations.
ANL _i	= the number of I/B/E/S analyst issuing forecast in the month preceding the management earnings forecast.

TABLE 7

**Cross-sectional Logistic Regression Tests of the Association between
Multinationality and Management Forecast Precision, after Controlling for Other
Determinants of Forecast Precision - DOM = # Geographic Segments (n=241)**

$$PRE_i = \alpha_0 + \alpha_1 DOM_i + \alpha_2 FHORIZON_i + \alpha_3 VOLAT_i + \alpha_4 LSIZE_i + \alpha_5 DIV_i + \alpha_6 ANL_i + \varepsilon_i$$

<i>Hypothesized Variable</i>	<u>Estimate</u>	<u>Chi-square</u>	<u>p-value</u>
Degree of Multinationality (DOM - # Geographic Segments)	-0.0130	2.924	0.0873
<i>Control Variables</i>			
Forecast Horizon (FHORIZON)	0.073	4.322	0.0376
Earnings Volatility (VOLAT)	0.014	0.311	0.5769
Firm Size (LSIZE)	0.184	1.237	0.2623
Operational Diversity (DIV)	0.229	4.680	0.0305
Analyst Following (ANL)	-0.040	2.836	0.0922

Likelihood Ratio Chi-square = 21.850 (p = 0.013)

PRE _i	= 3 for point estimates, 2 for range estimates, 1 for open-interval forecasts, and zero for general impression forecasts.
DOM _i	= the number of geographic segments in which the firm indicates operations.
FHORIZON _i	= number of days between forecast date and the end of the forecasted period divided by 30.
VOLAT _i	= the standard deviation of the return on assets for the previous five-year period.
LSIZE _i	= the log of firm size. Firm size is the log of total sales during the period.
DIV _i	= the number of primary and secondary SIC codes in which the firm had operations.
ANL _i	= the number of I/B/E/S analyst issuing forecast in the month preceding the management earnings forecast.

Table 8 specifies degree of multinationality as the number of countries in which the firm has subsidiaries. While the model is significant ($p=0.0037$), the variable of interest is not significant ($p=0.5884$). Significant control variables FHORIZON ($p=0.0367$) and DIV ($p=0.0633$) are positively associated with forecast precision. ANL ($p=0.0494$) is significantly negatively associated with forecast precision.

Overall results show mixed support for Hypothesis 1. Two of the model specifications for degree of multinationality show significant DOM variables. One of the remaining specifications has insufficient data. Findings regarding the control variables are consistent across specifications but inconsistent with expectations and prior research. This will be discussed further in the summary, limitations, and future extensions section.

Multinationality and Management Forecast Accuracy

Results of tests of management earnings forecast accuracy are provided below. The dependent variable, earnings forecast accuracy ACC, is measured as the absolute value of the percentage difference between earnings forecast and actual earnings, earnings forecast are more accurate as this difference approaches zero. ACC is zero for those earnings forecast that exactly predict actual earnings. Less accurate forecasts increase from zero.

TABLE 8

Cross-sectional Logistic Regression Tests of the Association between Multinationality and Management Forecast Precision, after Controlling for Other Determinants of Forecast Precision - DOM = # Countries with Foreign Subsidiaries (n=241)

$$PRE_i = \alpha_0 + \alpha_1 DOM_i + \alpha_2 FHORIZON_i + \alpha_3 VOLAT_i + \alpha_4 LSIZE_i + \alpha_5 DIV_i + \alpha_6 ANL_i + \varepsilon_i$$

<i>Hypothesized Variable</i>	<i>Estimate</i>	<i>Chi-square</i>	<i>p-value</i>
Degree of Multinationality (DOM - # Countries with foreign subsidiaries)	-0.004	0.293	0.5884
<i>Control Variables</i>			
Forecast Horizon (FHORIZON)	0.073	4.362	0.0367
Earnings Volatility (VOLAT)	0.011	0.1714	0.6789
Firm Size (LSIZE)	0.270	2.6747	0.1020
Operational Diversity (DIV)	0.192	0.1033	0.0633
Analyst Following (ANL)	-0.046	3.861	0.0494

Likelihood Ratio Chi-square = 19.283 (p= 0.0037)

PRE _i	= 3 for point estimates, 2 for range estimates, 1 for open-interval forecasts, and zero for general impression forecasts.
DOM _i	= # of countries in which the firm list a foreign subsidiary
FHORIZON _i	= number of days between forecast date and the end of the forecasted period divided by 30.
VOLAT _i	= the standard deviation of the return on assets for the previous five-year period.
LSIZE _i	= the log of firm size. Firm size is the log of total sales during the period.
DIV _i	= the number of primary and secondary SIC codes in which the firm had operations.
ANL _i	= the number of I/B/E/S analyst issuing forecast in the month preceding the management earnings forecast.

Table 9 presents the results of tests of hypotheses 2 when the degree of multinationality is specified as Foreign Sales/Total Sales (n=231). The model is significant at the .01 level and has an adjusted R^2 of 0.16. While the model is significant (p=0.0001), the variable of interest, FS/TS, is not significant (p=0.1916). Control variables LSIZE (p=0.0829) and DIV (p=0.0903) are significantly negatively associated with the dependent variable ACC. Since LSIZE and DIV are both significantly negative (at the 10% level), this indicates that larger and more diverse firms provide more accurate earnings forecasts. This is a surprising and counterintuitive result. Duru and Reeb (2002) in their study of analysts' forecasts and multinationality do not find that a significant relationship between forecast accuracy and firm size or operational diversity.

FHORIZON is highly significant (p=0.0001) in this model. This is consistent with predictions and prior research. As the time between the forecast date and the end of the period increases, forecast accuracy decreases.

Table 10 presents the results of tests of Hypothesis 2 when the degree of multinationality is specified as Foreign Assets/Total Assets (n=37). This model is significant (F value = 3.15, p=0.0157), but the variable of interest, FA/TA, is not (p=0.8723). With that caveat, FHORIZION (p=0.0009) is significantly positively associated with ACC. As in the other ACC models, this indicates that forecasts are less accurate as the time between the forecast announcement and the end of the forecast period increases.

TABLE 9

Cross-sectional OLS Regression Tests of the Association between Multinationality and Management Forecast Accuracy, after Controlling for Other Determinants of Forecast Accuracy - DOM = Foreign Sales/ Total Sales (n= 231)

$$ACC_i = \alpha_0 + \alpha_1 DOM_i + \alpha_2 FHORIZON_i + \alpha_3 VOLAT_i + \alpha_4 LSIZE_i + \alpha_5 DIV_i + \alpha_6 ANL_i + \varepsilon_i$$

	Coefficient (t-statistic)	p-value
Intercept	0.525 (2.21)	0.2155
<i>Hypothesized Variable</i>		
Degree of Multinationality (DOM - FS/TS)	0.235 (1.31)	0.1916
<i>Control Variables</i>		
Forecast Horizon (FHORIZON)	0.040 (5.61)	<0.0001
Earnings Volatility (VOLAT)	-0.003 (-0.41)	0.6805
Firm Size(LSIZE)	-0.058 (-1.74)	0.0829
Operational Diversity (DIV)	-0.035 (-1.70)	0.0903
Analyst Following (ANL)	-0.001 (0.17)	0.8662

Adjusted R² = 0.16 F value = 8.54 (p=0.0001)

ACC _i	= the absolute value of (Forecasted EPS – Actual EPS) / Actual EPS.
DOM _i	= Foreign Sales / Total Sales.
FHORIZON _i	= number of days between forecast date and the end of the forecasted period divided by 30.
VOLAT _i	= the standard deviation of the return on assets for the previous five-year period.
LSIZE _i	= the log of firm size. Firm size is the log of total sales during the period.
DIV _i	= the number of primary and secondary SIC codes in which the firm had operations.
ANL _i	= the number of I/B/E/S analyst issuing forecast in the month preceding the management earnings forecast.

TABLE 10

Cross-sectional OLS Regression Tests of the Association between Multinationality and Management Forecast Accuracy, after Controlling for Other Determinants of Forecast Accuracy - DOM = Foreign Assets/ Total Assets (n=37)

$$ACC_i = \alpha_0 + \alpha_1 DOM_i + \alpha_2 FHORIZON_i + \alpha_3 VOLAT_i + \alpha_4 LSIZE_i + \alpha_5 DIV_i + \alpha_6 ANL_i + \varepsilon_i$$

	Coefficient (t-statistic)	p-value
Intercept	-0.707 (-1.26)	0.2155
<i>Hypothesized Variable</i>		
Degree of Multinationality (DOM - FA/TA)	-0.057 (-0.16)	0.8723
<i>Control Variables</i>		
Forecast Horizon (FHORIZON)	0.049 (3.67)	0.0009
Earnings Volatility (VOLAT)	-0.003 (-0.10)	0.9239
Firm Size (LSIZE)	0.065 (0.66)	0.5170
Operational Diversity (DIV)	0.030 (0.46)	0.6506
Analyst Following (ANL)	-0.003 (-0.19)	0.8515

Adjusted R² = 0.26 F value = 3.15 (p=0.0157)

ACC_i = The absolute value of (Forecasted EPS – Actual EPS) / Actual EPS.
DOM_i = Foreign Assets / Total Assets.
FHORIZON_i = number of days between forecast date and the end of the forecasted period divided by 30.
VOLAT_i = the standard deviation of the return on assets for the previous five-year period.
LSIZE_i = the log of firm size. Firm size is the log of total sales during the period.
DIV_i = the number of primary and secondary SIC codes in which the firm had operations.
ANL_i = the number of I/B/E/S analyst issuing forecast in the month preceding the management earnings forecast.

Table 11 presents the results of tests of Hypothesis 2 when the degree of multinationality is specified as the number of countries in which the firm lists a subsidiary (n=231). The model is significant at the .0001 level and has an adjusted R^2 of .16. However, the variable of interest, # countries with foreign subsidiaries, is not (p=0.6064). The coefficient estimate for DOM is not significantly different from zero in this model. FHORIZON (p=0.0001) and LSIZE (p=0.0316) have significant coefficients. FHORIZON is consistent with other model specifications and indicates that forecasts with a greater forecast horizon are less accurate. The sign on LSIZE is also consistent with the other model specifications and indicates that larger firms provide more accurate forecasts.

Table 12 presents the results of tests of Hypothesis 2 when the degree of multinationality is specified as the number of geographic segments listed in the firm's financial statements (n=231). The model is significant at the .0001 level and has an adjusted R^2 of .16. DOM (p=0.0042) is significantly negatively associated with ACC indicating that firms with more geographic segments, that is, a higher degree of multinationality, issue more accurate forecasts. Of the four specifications of DOM, this is the only one that is significant and is contrary to expectations. This suggests that firms with extensive foreign operations may benefit more from increasing disclosure accuracy than the costs associated with aggregating earnings information across multiple borders.

TABLE 11

Cross-sectional OLS Regression Tests of the Association between Multinationality and Management Forecast Accuracy, after Controlling for Other Determinants of Forecast Accuracy - DOM = # Countries with Foreign Subsidiaries (n=231)

$$ACC_i = \alpha_0 + \alpha_1 DOM_i + \alpha_2 FHORIZON_i + \alpha_3 VOLAT_i + \alpha_4 LSIZE_i + \alpha_5 DIV_i + \alpha_6 ANL_i + \varepsilon_i$$

	Coefficient (t-statistic)	p-value
Intercept	0.658 (2.89)	0.0043
<i>Hypothesized Variable</i>		
Degree of Multinationality (DOM – #Countries with foreign subsidiaries)	0.001 (0.52)	0.6064
<i>Control Variables</i>		
Forecast Horizon (FHORIZON)	0.040 (5.66)	0.0001
Earnings Volatility (VOLAT)	-0.003 (-0.57)	0.5718
Firm Size (LSIZE)	-0.073 (-2.16)	0.0316
Operational Diversity (DIV)	-0.030 (-1.48)	0.1397
Analyst Following (ANL)	0.001 (0.26)	0.7937

Adjusted R² = 0.16 F value = 8.24 (p=0.0001)

ACC _i	= The absolute value of (Forecasted EPS – Actual EPS) / Actual EPS.
DOM _i	= # of countries in which the firm list a foreign subsidiary.
FHORIZON _i	= number of days between forecast date and the end of the forecasted period divided by 30.
VOLAT _i	= the standard deviation of the return on assets for the previous five-year period.
LSIZE _i	= the log of firm size. Firm size is the log of total sales during the period.
DIV _i	= the number of primary and secondary SIC codes in which the firm had operations.
ANL _i	= the number of I/B/E/S analyst issuing forecast in the month preceding the management earnings forecast.

TABLE 12

Cross-sectional OLS Regression Tests of the Association between Multinationality and Management Forecast Accuracy, after Controlling for Other Determinants of Forecast Accuracy - DOM = Geographic Segments (n=231)

$$ACC_i = \alpha_0 + \alpha_1 DOM_i + \alpha_2 FHORIZON_i + \alpha_3 VOLAT_i + \alpha_4 LSIZE_i + \alpha_5 DIV_i + \alpha_6 ANL_i + \varepsilon_i$$

	Coefficient (t-statistic)	p-value
Intercept	0.848 (3.67)	0.0003
<i>Hypothesized Variable</i>		
Degree of Multinationality (DOM – Geographic Segments)	-0.044 (-2.89)	0.0042
<i>Control Variables</i>		
Forecast Horizon (FHORIZON)	0.041 (5.93)	0.0001
Earnings Volatility (VOLAT)	-0.002 (-0.49)	0.6270
Firm Size (LSIZE)	-0.092 (-2.78)	0.0059
Operational Diversity (DIV)	-0.016 (-0.78)	0.4378
Analyst Following (ANL)	0.005 (1.03)	0.3045

Adjusted R² = 0.16 F value = 8.24 (p=0.0001)

ACC _i	= The absolute value of (Forecasted EPS – Actual EPS) / Actual EPS.
DOM _i	= an index created by factor analysis of FS/TS, FA/TA, # of geographic segments and # of countries in which the firm list a subsidiary.
FHORIZON _i	= number of days between forecast date and the end of the forecasted period divided by 30.
VOLAT _i	= the standard deviation of the return on assets for the previous five-year period.
LSIZE _i	= the log of firm size. Firm size is the log of total sales during the period.
DIV _i	= the number of primary and secondary SIC codes in which the firm had operations.
ANL _i	= the number of I/B/E/S analyst issuing forecast in the month preceding the management earnings forecast.

Table 12 also indicates that control variables LSIZE ($p=0.0059$) and FHORIZON ($p=0.0001$) are also significantly associated with management earnings forecast accuracy. As in prior model specifications, larger firms issue more accurate forecasts and forecasting over greater time periods provides less accurate forecasts.

Multinationality and Management Forecast Bias

Results of the test of management earnings forecast bias (BIAS) are provided below. BIAS is measured as the signed percentage of forecast error. Optimistic forecasts are forecasts that are greater than actual earnings. Pessimistic forecasts are forecasts that are less than actual earnings. Hypothesis 3 predicts that because of the greater costs and uncertainty of forecasting earnings for firms as they increase in degree of multinationality and the penalties imposed by the market for falling short of forecasts, multinational firms will attempt to adjust expectations downward by issuing more pessimistic earnings forecasts.

Table 13 presents the results of tests of Hypothesis 3 when the degree of multinationality is specified as Foreign Sales/Total Sales ($n=231$). DOM ($p=0.0143$) is significantly positively associated with BIAS. This is opposite of the hypothesized relationship. As the foreign sales ratio increases the optimistic bias increases (forecasted earnings per share is more than actual earnings per share). A possible explanation for this finding lies in the extraordinary sample period. The 2001-2002 period was characterized by an unexpected economic downturn and multiple economic shocks that depressed actual earnings per share. The 2002 forecasts would have been less vulnerable to an unexpected economic downturn.

TABLE 13

Cross-sectional OLS Regression Tests of the Association between Multinationality and Management Forecast Bias, after Controlling for Other Determinants of Forecast Bias - DOM = Foreign Sales/ Total Sales (n=231)

$$\text{BIAS}_i = \alpha_0 + \alpha_1 \text{DOM}_i + \alpha_2 \text{DOM}_i^2 + \alpha_3 \text{FHORIZON}_i + \alpha_4 \text{VOLAT}_i + \alpha_5 \text{LSIZE}_i + \alpha_6 \text{DIV}_i + \alpha_7 \text{LANL}_i + \varepsilon_i$$

	Coefficient <u>(t-statistic)</u>	<u>p-value</u>
Intercept	0.322 (1.20)	0.2296
<i>Hypothesized Variable</i>		
Degree of Multinationality (DOM - FS/TS)	0.498 (2.47)	0.0143
<i>Control Variables</i>		
Forecast Horizon (FHORIZON)	0.036 (4.49)	0.0001
Earnings Volatility (VOLAT)	-0.001 (-0.19)	0.8496
Firm Size (LSIZE)	-0.058 (-1.54)	0.1258
Operational Diversity (DIV)	-0.029 (-1.20)	0.2301
Analyst Following (ANL)	0.001 (0.09)	0.9247

Adjusted R² = 0.13 F value = 6.58 (p=0.0001)

BIAS _i	= (Forecasted EPS – Actual EPS) / Actual EPS.
DOM _i	= Foreign Sales / Total Sales.
FHORIZON _i	= number of days between forecast date and the end of the forecasted period divided by 30.
VOLAT _i	= the standard deviation of the return on assets for the previous five-year period.
LSIZE _i	= the log of firm size. Firm size is the log of total sales during the period.
DIV _i	= the number of primary and secondary SIC codes in which the firm had operations.
ANL _i	= the number of I/B/E/S analyst issuing forecast in the month preceding the management earnings forecast.

FHORIZON ($p=0.0001$) also exhibits an optimistic bias. This finding may be driven by the sample period. The sample includes forecasts of annual earnings for fiscal years ending in 2001 and 2002. Of the 231 observations included for this regression, three of the observations were of forecasts issued in 1999, 18 forecasts were issued in 2000, 103 were issued in 2001, and 107 were issued in 2002. This period was characterized by falling industrial output and a movement into a recession. Results may reflect this general economic downturn more than managerial attempt to adjust shareholder expectations.

Table 14 presents the results of tests of Hypothesis 3 when the degree of multinationality is specified as Foreign Assets/Total Assets ($n=37$). The model is not a valid model (F value=1.14, $p=0.3607$) and highly multicollinear as indicated by high variance inflation factors for LSIZE and ANL.

TABLE 14

Cross-sectional OLS Regression Tests of the Association between Multinationality and Management Forecast Bias, after Controlling for Other Determinants of Forecast Bias - DOM = Foreign Assets/ Total Assets (n= 37)

$$\text{BIAS}_i = \alpha_0 + \alpha_1 \text{DOM}_i + \alpha_2 \text{DOM}_i^2 + \alpha_3 \text{FHORIZON}_i + \alpha_4 \text{VOLAT}_i + \alpha_5 \text{LSIZE}_i + \alpha_6 \text{DIV}_i + \alpha_7 \text{LANL}_i + \varepsilon_i$$

	<u>Coefficient</u> <u>(t-statistic)</u>	<u>p-value</u>
Intercept	-0.114 (-0.16)	0.8754
<i>Hypothesized Variable</i>		
Degree of Multinationality (DOM - FA/TA)	-0.642 (-0.75)	0.4570
<i>Control Variables</i>		
Forecast Horizon (FHORIZON)	0.033 (1.92)	0.0639
Earnings Volatility (VOLAT)	0.044 (1.13)	0.2675
Firm Size (LSIZE)	-0.053 (-0.41)	0.6815
Operational Diversity (DIV)	0.082 (0.98)	0.3364
Analyst Following (ANL)	0.011 (0.50)	0.6219

Adjusted R² = 0.02 F value = 1.14 (p=0.3607)

BIAS _i	= The absolute value of (Forecasted EPS – Actual EPS) / Actual EPS.
DOM _i	= Foreign Assets / Total Assets.
FHORIZON _i	= number of days between forecast date and the end of the forecasted period divided by 30.
VOLAT _i	= the standard deviation of the return on assets for the previous five-year period.
LSIZE _i	= the log of firm size. Firm size is the log of total sales during the period.
DIV _i	= the number of primary and secondary SIC codes in which the firm had operations.
ANL _i	= the number of I/B/E/S analyst issuing forecast in the month preceding the management earnings forecast.

Table 15 presents the results of tests of Hypothesis 3 when the degree of multinationality is specified as the number of countries in which a firm lists subsidiaries (n=231). This measure of DOM is significantly positively related to forecast bias (p=0.0153). Firms that operate in more countries issue more optimistic earnings forecasts. This is contrary to expectations and raises the question of why this might be happening. Perhaps individual country managers receive benefits from the parent company by providing more optimistic forecasts.

Table 16 presents the results of tests of Hypothesis 3 when the degree of multinationality is specified as the number of geographic segments (n=231). DOM is not significant in this model (p=0.1361). The coefficient of LSIZE (p=0.0147) is negative and statistically significant. As firm size increases management earnings forecasts become increasingly pessimistic. FHORIZON (p=0.0001) again exhibits an optimistic bias that may be symptomatic of an economic downturn not considered at the time of the forecast.

TABLE 15

Cross-sectional OLS Regression Tests of the Association between Multinationality and Management Forecast Bias, after Controlling for Other Determinants of Forecast Bias - DOM = # Countries with Foreign Subsidiaries (n= 231)

$$\text{BIAS}_i = \alpha_0 + \alpha_1 \text{DOM}_i + \alpha_2 \text{DOM}_i^2 + \alpha_3 \text{FHORIZON}_i + \alpha_4 \text{VOLAT}_i + \alpha_5 \text{LSIZE}_i + \alpha_6 \text{DIV}_i + \alpha_7 \text{LANL}_i + \varepsilon_i$$

	<u>Coefficient</u> <u>(t-statistic)</u>	<u>p-value</u>
Intercept	0.682 (2.67)	0.0081
<i>Hypothesized Variable</i>		
Degree of Multinationality (DOM - #Countries with foreign subsidiaries)	0.005 (2.44)	0.0153
<i>Control Variables</i>		
Forecast Horizon (FHORIZON)	0.360 (4.52)	0.0001
Earnings Volatility (VOLAT)	-0.002 (-0.28)	0.7769
Firm Size (LSIZE)	-0.102 (-2.72)	0.0007
Operational Diversity (DIV)	-0.020 (-0.86)	0.3891
Analyst Following (ANL)	0.004 (0.66)	0.5109

Adjusted R² = 0.13 F value = 6.55 (p=0.0001)

BIAS _i	= (Forecasted EPS – Actual EPS) / Actual EPS.
DOM _i	= # of countries in which the firm lists a foreign subsidiary.
FHORIZON _i	= number of days between forecast date and the end of the forecasted period divided by 30.
VOLAT _i	= the standard deviation of the return on assets for the previous five-year period.
LSIZE _i	= the log of firm size. Firm size is the log of total sales during the period.
DIV _i	= the number of primary and secondary SIC codes in which the firm had operations.
ANL _i	= the number of I/B/E/S analyst issuing forecast in the month preceding the management earnings forecast.

TABLE 16

Cross-sectional OLS Regression Tests of the Association between Multinationality and Management Forecast Bias, after Controlling for Other Determinants of Forecast Bias - DOM = Geographic Segments (n= 231)

$$\text{BIAS}_i = \alpha_0 + \alpha_1 \text{DOM}_i + \alpha_2 \text{DOM}_i^2 + \alpha_3 \text{FHORIZON}_i + \alpha_4 \text{VOLAT}_i + \alpha_5 \text{LSIZE}_i + \alpha_6 \text{DIV}_i + \alpha_7 \text{ANL}_i + \varepsilon_i$$

	<u>Coefficient</u> <u>(t-statistic)</u>	<u>p-value</u>
Intercept	0.687 (2.56)	0.0111
<i>Hypothesized Variable</i>		
Degree of Multinationality (DOM – Geographic Segments)	-0.023 (-1.50)	0.1361
<i>Control Variables</i>		
Forecast Horizon (FHORIZON)	0.038 (4.71)	0.0001
Earnings Volatility (VOLAT)	-0.003 (-0.52)	0.6003
Firm Size (LSIZE)	-0.093 (-2.46)	0.0147
Operational Diversity (DIV)	-0.008 (-0.32)	0.7461
Analyst Following (ANL)	0.008 (1.44)	0.1502

Adjusted R² = 0.11 F value = 5.84 (p=0.0001)

BIAS _i	= (Forecasted EPS – Actual EPS) / Actual EPS.
DOM _i	= an index created by factor analysis of FS/TS, FA/TA, # of geographic segments and # of countries in which the firm list a subsidiary.
FHORIZON _i	= number of days between forecast date and the end of the forecasted period divided by 30.
VOLAT _i	= the standard deviation of the return on assets for the previous five-year period.
LSIZE _i	= the log of firm size. Firm size is the log of total sales during the period.
DIV _i	= the number of primary and secondary SIC codes in which the firm had operations.
ANL _i	= the number of I/B/E/S analyst issuing forecast in the month preceding the management earnings forecast.

As in the other bias models, the coefficients for control variables LSIZE ($p=0.0007$) and FHORIZON ($p=0.0001$) are significant. Larger firms issue more pessimistic forecasts but forecast become more optimistic as they look further ahead in time.

VII. SUMMARY, LIMITATIONS, AND FUTURE EXTENSIONS

Summary

Firms with a high degree of multinationality operate in a more complex environment relative to domestic corporations. These firms are subject to greater uncertainty regarding earnings forecasts due to the additional risk of operating in this more complex environment. This study uses multiple measures of multinationality to test three hypotheses concerning management earnings forecasts. The first hypothesis to be tested is that managers in firms with higher levels of multinationality will provide less precise earnings forecasts. The second hypothesis is that managers in firms with higher levels of multinationality will provide less accurate earnings forecasts. The third hypothesis is that managers in firms with higher levels of multinationality will provide more conservative (downwardly biased) earnings forecasts.

Results of hypothesis testing are mixed. Implications are that increasing multinationality appears to affect management earnings forecasts, but not necessarily in the direction expected. Regarding the first hypothesis, two measures of multinationality (foreign sales / total sales and the number of geographic segments) are significantly negatively related to management earnings forecast precision. This suggests that as multinationality increases, management earnings forecast precision decreases. This was the expected relationship.

Regarding the second hypothesis, contrary to expectations, forecast accuracy is positively related to one measure of multinationality, the number of geographic segments a firm discloses. This suggests there are benefits to the highly multinational

firm to provide more accurate forecasts, and in the case of firms with more geographic segments, they seem to be able to do so. It could be argued that the greater accuracy is a portfolio effect. Volatility is reduced because firms with a greater degree of multinationality have a larger portfolio, thereby spreading risk over more business settings.

Regarding the third hypothesis, contrary to the predicted relationship, two measures of multinationality (foreign sales / total sales and the number of countries in which a firm has a subsidiary) are significantly positively associated with earnings forecast bias. This implies that as firms increase in multinationality, management earnings forecasts become more optimistic. This might mean that managers of foreign subsidiaries make more optimistic earnings assessments that aggregate to a higher corporate earnings forecast. If so, then international managers may see a positive net benefit for making more favorable earnings forecasts.

A fundamental argument for each of the hypotheses is that as information flows across multiple borders, the earnings information signal degrades. Advances in information systems and accumulated experience in international operations ameliorate this signal degradation Egothoff (1991). Earnings data, particularly for experienced multinational firms, is likely to become higher quality, with less signal degradation, with advances in information technology. Higher quality data results in more accurate and more precise management earnings forecasts. This may help explain the unexpected findings in this study.

Limitations

The time period during which the forecasts used in this study were made, i.e. 1999 through 2002, may not be representative due to the variety of economic events that had a depressing effect on earnings. This also may help explain the unexpected findings. In other words, what were actually downward-biased earnings forecasts may have turned out to be closer to actual earnings (more accurate and less biased) due to the effect of unanticipated poor economic conditions.

Future Extensions

This study does not directly test information content on the date of the management forecast. If information asymmetry is positively related to the degree of multinationality then this could be reflected in trading volume on the date of the earnings forecasts. Future research could incorporate methodology developed by Beaver (1968) and Cready and Hurtt (2002), and used by Olibe (2002) as an additional test of information content.

A fundamental assumption of this paper is that information asymmetry is positively related to the degree of multinationality. The relationship between multinationality and information asymmetry has apparently not been addressed in prior research. Of the 106 responses generated by an ABI-Inform search using “information” AND “asymmetry” AND “international”, and the 13 responses to a query using “information” AND “asymmetry” AND “multinational”, none of them addressed the effect of multinationality on information asymmetry.

A question related to information asymmetry is: “How do managers calculate the cost of information asymmetry?” Of the several motivations attributed to managers for issuing voluntary disclosures (e.g. limiting liability, signaling superior management skills, and adjusting investor expectations), each of these implies a cost-benefit consideration on the part of management. Studies investigating management earnings forecasts have typically used archival methods. An interesting future extension of this study would be to directly ask managers what costs and benefits they consider in each step of the forecast decision.

Bartlett and Ghoshal (1989) and others have developed three typologies of multinational operations: (1) Multidomestic -- combining low global integration with high responsiveness to local conditions, (2) Global -- combining high integration with low responsiveness), and (3) Transnational -- high in both integration and responsiveness. Multinational firms differ widely in management structures and the resultant information flows. Gray, Salter and Radebaugh (2001, p. 37) point out that firms adopting a multidomestic approach do not integrate their information technology systems to the same extent as global firms. Information flows from subsidiaries that focus on a high level of local responsiveness may find it more difficult to provide information for management earnings forecasts. Given these differences in IT integration, categorizing firms by type could extend the current study. This would provide evidence of the relationship of information flow and reporting by firm type.

Primarily economically advanced countries belong to the Organization for Economic Co-operation and Development (OECD). Another extension of interest would

consider voluntary disclosures of firms with significant operations in non-OECD countries. It is more likely that the severity of border-crossings such as cultural, exchange-rate, language, technological, and legal would be more pronounced when operating in OECD countries. Would cost of information processing be prohibitive or would firms determine that the benefits of reducing information asymmetry justify more precise and accurate earnings forecasts?

The SEC implemented Regulation FD on October 23, 2000. How this will affect the level of public voluntary disclosure is unclear. Ajinkya and Gift (1984) pointed out that the majority of earnings forecasts have been indirectly through analysts (65%) and that only about 10% are issued directly through press releases and other public communications. FD prohibits disclosure of earnings forecasts to only analysts. Early evidence on the effects of FD (Heflin et al. 2003) suggests that there has been a substantial increase in firms' voluntary earnings disclosures. This seems contrary to the Irani and Karamanou (2003) finding that analysts' following of individual firms has decreased as forecast dispersion has decreased. This early evidence is somewhat confounded by other regulatory and economic events such as the passage of Sarbanes-Oxley Act of 2002, the terrorist attack of September 11, 2001, and weak economic conditions for the period for which data is available. The extent to which multinationality affects management earnings forecasts may be different in this new environment.

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APPENDIX

CODING OF FIRST CALL MANAGEMENT EARNINGS FORECASTS

The following coding scheme was used to determine the Precision dependent variable. Management earnings forecasts were coded in the First Call Company Issued Guidance database as indicated in the First Call Code column. The dependent variable was coded as indicated in the Precision Code column. Total observations = 263

<u>First Call Description</u>	<u>First Call Code</u>	<u>#Observations</u>	<u>Precision Code</u>
may be below	1	0	1
not comfortable with	2	0	0
significantly more than	3	0	1
significantly less than	4	0	1
meets or exceeds expectations	5	0	1
may not meet earnings of between	6	0	1
slightly more than	7	2	2
slightly less than	8	0	2
about	A	49	3
between (&)	B	167	2
may exceed	C	1	1
below expectations	D	5	1
at least	E	4	1
comfortable with	F	14	3
low end of	G	5	2
high end of	H	1	2
might be	I	0	3
may not meet expectations	J	0	1
less than	L	2	1
more than	M	7	1
miscellaneous	N	3	0
okay with expectations	O	0	3
above expectations	P	0	1
revenues above expectations	Q	0	1
revenues below expectations	R	0	1
sales above expectations	S	0	1
sales below expectations	T	0	1
at or below	U	0	1
as low as	V	0	1
as high as	W	0	1
expects loss	X	0	1
expects profit	Y	2	1
breakeven	Z	1	3

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Texas A&M University	Ph.D., 2005	Major Area: Accounting Minor Area: Management
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University of Arkansas at Monticello	B.S., 1982	Major Area: Accounting
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EXPERIENCE

Berry College	Assistant Professor, 2003-2005. Courses: Managerial Accounting, Cost Accounting, International Accounting
Blinn College	Instructor, 1999. Course: Principles of Accounting
University of North Texas	Instructor, 1995-1996. Courses: Personal Financial Planning, CFP Review – Taxation
Brookhaven College	Instructor, 1996. Course: Principles of Accounting
LeTourneau University	Instructor, 1995. Course: Corporate Finance
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Certified Public Accountant (Texas)	1986
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Certified Financial Planner	1994