

Beyond Earnings: Do EBITDA Reporting and Governance Matter for Market Participants?

Abstract

Purpose – In this paper, we investigate whether formally disclosing an EBITDA number reduces the information asymmetry between managers and investors beyond the release of GAAP earnings. We also assess if EBITDA disclosure enhances the value relevance and the predictive ability of earnings.

Design/methodology/approach – We explore the interface between GAAP and non-GAAP reporting as well as the impact of corporate governance on the quality of non-GAAP measures.

Findings – Results suggest that EBITDA reporting is associated with greater analyst following and with less information asymmetry. We also document that EBITDA reporting enhances the positive relationship between earnings and stock pricing as well as future cash flows. Moreover, it appears that corporate governance substitutes for EBITDA reporting for the stock market. Hence, EBITDA helps market participants to better assess earnings valuation when a firm's governance is weak. Inversely, when governance is strong, releasing EBITDA information has a much smaller impact on the earnings-stock price relation.

Originality/value – We revisit the issue of how corporate governance relates with earnings quality by considering the potentially confounding effect of EBITDA reporting: it appears that such reporting substitutes for governance in moderating the relation between governance and earnings quality.

Keywords EBITDA, Non-GAAP measures, corporate governance

Paper type Research paper

1. Introduction

The recent attention devoted to Valeant Pharmaceuticals International Inc. business model and financial reporting has reignited the debate about the merits of so-called non-GAAP measures, especially EBITDA.¹ For instance, during its pursuit of Allergan in 2014, several analysts as well as Allergan's management accused Valeant of using aggressive accounting that magnified its financial performance. Underlying these accusations is the view that non-GAAP reporting, as it is not explicitly defined by accounting standards, potentially misrepresents a firm's economic performance.

According to Goldschmidt (2013), non-GAAP reporting or information is a numerical measure of historical or future financial performance of an entity, its financial position or cash flows that excludes or includes GAAP numbers. In that context, the current study aims to explore further how market participants (investors and analysts) view and use EBITDA (Earnings before Interests, Taxes, Depreciation and Amortization).² PwC (2014) observes that EBITDA is the non-GAAP metric that is the most commonly used by listed corporations. Focusing on a sample of large Canadian firms, we find that there is more extensive analyst following of firms that provide EBITDA reporting. Furthermore, EBITDA reporting translates into less information asymmetry between managers and stock market participants, as reflected by the bid-ask spread and analyst forecast dispersion. We also document that EBITDA reporting

1 <http://www.bloomberg.com/news/articles/2015-11-11/valeant-creditors-spooked-by-possibility-of-revenue-squeeze>; <http://business.financialpost.com/investing/valeant-accused-of-aggressive-accounting-games-by-renowned-short-seller-jim-chanos>

2 <http://www.forbes.com/sites/tedgavin/2011/12/28/top-five-reasons-why-ebitda-is-a-great-big-lie/#288b182c469d>

enhances the positive relationship between earnings and stock pricing and signals higher future cash flows. Finally, it appears that, for stock markets, corporate governance substitutes for EBITDA reporting. EBITDA helps market participants to better assess earnings valuation when the governance is weak.³ However, when governance is strong, EBITDA reporting has a scant effect on the relation between earnings and stock prices. To the best of our knowledge, this study is the first to investigate the moderating effect of corporate governance on the relation between a non-GAAP measure and information asymmetry as well as the value relevance of earnings.

Our paper aims to further enlighten future discussions about non-GAAP reporting. Despite several attempts by regulators (e.g., Regulation G, SEC, 2003) to delineate its use and recurring criticisms as to its reliability and relevance by market observers, many corporations still report non-GAAP numbers such as EBITDA. For example, Hans Hoogervorst, the chair of the International Accounting Standards Board, recently commented that 88% of S&P 500 firms use some non-GAAP metrics in their earnings releases.⁴ A report by McKinsey (2013) provides a clue to this paradox. According to the report, financial statements are difficult to interpret for investors, leading many firms to increasingly resort to some form of non-GAAP earnings to facilitate investors' assessment of their underlying performance. The report highlights that a potential problem with GAAP is its emphasis on producing a single number, net earnings, which is deemed likely to be useful to the firm, as well as to its investors and creditors. However, beyond net earnings, sophisticated investors seek information about its components and,

³ Strong or weak governance are defined according to prior research, e.g., a board with more independent directors will be judged stronger than a board with fewer independent directors.

⁴ <http://www.ifrs.org/About-us/IASB/Members/Documents/Hans-Hoogervorst-EAA-Annual-Conference-11-May-2016.pdf>

specifically, want to distinguish operating items (sales to customers less the costs of those sales) from non-operating items (interest income or interest expense). They also want to know which items are likely to be recurring and which are likely to be nonrecurring (e.g. restructuring charges). Finally, they want to know which items are real and which, like the amortization of intangibles, merely reflect the application of accounting rules.

Our paper investigates how a firm's decision to disclose EBITDA, conditional on its governance, affects market participants (e.g., analysts and investors). Focusing on a sample of Canadian firms, we find that the release of EBITDA information relates with their stock market valuation as well as with the information asymmetry between management and financial analysts. Moreover, while for firms with weak governance it appears that EBITDA disclosure has an impact on information asymmetry, such is not the case for firms with strong governance where EBITDA disclosure has a neutral impact.

Hence, for Segarra (2014), the use of non-GAAP metrics aims to depict financial performance more accurately than GAAP measures do, thus providing investors with a window as to how management sees things. In fact, many managers routinely report non-GAAP earnings numbers (in addition to required GAAP earnings numbers) and justify the practice on the grounds that the non-GAAP earnings numbers more accurately reflect the firm's performance and financial health (Bansal et al., 2013). However, since they are often unaudited and not subject to any formal standard, such practices raise concerns among regulators and have the potential to actually confuse more than they inform (Cormier et al., 2011). Barsky and Catanach Jr. (2014) cite Groupon as an example of how non-GAAP measures can actually reflect a lack of transparency. Indeed, in its 2013 10-K report, in addition to reporting an adjusted EBITDA that exceeds net loss by

\$375.60 million, Groupon introduces a metric called “operating income (loss) excluding stock-based compensation and acquisition related expense (benefit), net.” This wordy non-GAAP measure was \$121.45 million greater than income from operations. The previous year, Groupon was called to order by the SEC about the metric "adjusted consolidated segment operating income," because the measure excluded online marketing expenses (a critical part of the firm's business model).

The release of non-GAAP information to the public is a strategic decision that is likely to be vetted by a firm’s board of directors. In fact, several firms provide disclosure to that effect. For instance, at a conference sponsored by Barclays (an investment bank and portfolio manager), Kimberly-Clark states that “Kimberly-Clark provides these non-GAAP financial measures as supplemental information to our GAAP financial measures. Management and the company’s Board of Directors use adjusted earnings and earnings per share, adjusted operating profit and margin, adjusted ROIC, adjusted dividend payout and organic sales to (a) evaluate the company’s historical and prospective financial performance and its performance relative to its competitors, (b) allocate resources and (c) measure the operational performance of the company’s business units and their managers.”⁵ Kimberley-Clark’s disclosure is consistent with practices revealed by several other firms in their proxy statements. To the extent boards of directors rely on non-GAAP measures for several decisions, including executive compensation, one can assume that it must play a role in their selection, use and disclosure. However, up until now, that role and influence have remained relatively unexplored. While the relation between corporate governance and earnings quality can provide some clues in this regard, the evidence is

5 <http://files.shareholder.com/downloads/KMB/0x0x595076/B1F29C39> (September 2012)

rather weak and inconsistent (e.g., Larcker et al., 2007). We argue that this inconsistency may be due to the fact that the relation between earnings quality and governance is correlated with other disclosure variables such as non-GAAP measures.

Our paper provides the following contributions. First, we extend prior research on non-GAAP performance measures by examining how they reduce information asymmetry between managers and market participants, i.e., analysts and investors. Second, we assess how corporate governance influences the relation between EBITDA reporting and information asymmetry between managers and market participants. Third, and perhaps most importantly, we revisit the issue of how corporate governance relates with earnings quality by considering the potentially confounding effect of EBITDA reporting: it appears that such reporting, which makes a firm's underlying financial performance more transparent, substitutes for governance in moderating the relation between governance and earnings quality.

The paper is organized as follows: Section 2 presents the framework and research hypotheses. Section 3 presents the methodology. The results follow in Section 4 and the last section provides a conclusion and a discussion of the potential results' implications.

2. Framework

2.1 Institutional Setting

The International Accounting Standards Board's (IASB) position about non GAAP metrics is somewhat ambiguous. Following years of non-GAAP metrics proliferation, it now firmly criticizes their use. For instance, the IFRS Advisory Council (2011) considers that the widespread use of non-GAAP measures can be perceived as undermining the

integrity of the numbers reported under GAAP. It underlines that the main problem with non-GAAP measures is “that they lack the rigor and evolved literature to provide answers to detailed issues in financial reporting”. More recently, the IASB’s Chair, Hans Hoogervorst (2015), criticizes the use of non-GAAP measures that offer a selective presentation of an entity’s financial performance. In addition, in his view, that selection is not free from bias. In a subsequent intervention, Hoogervorst (2016) adds that “Cutting back the use of non-GAAP measures is primarily the task of securities regulators”. He also concedes that the IASB needs to define more sub-totals in the income statement and provide a principles-based definition of operating income which does not allow for obfuscating restructuring or impairment charges, in order to create a rigorous definition of the commonly used non-GAAP metric that is EBITDA.

Consistent with these views, and to restrain the use of non-GAAP measures, the IASB has launched a revision of IAS 1, releasing an Exposure-Draft (ED) (2014/1) on the Disclosure Initiative proposed amendments to IAS 1 (IASB 2014). The ED states that “The IASB does not want to propose amendments that could be seen as encouraging the proliferation of ‘non-GAAP’ measures. This is not the intention of the proposed amendments; the aim of which is to provide additional guidance on the fair presentation of subtotals presented in accordance with paragraph 55 or 85 of IAS 1.” Hence, the ED aims at improving financial disclosure so that there is eventually less need to use non-GAAP metrics. Nevertheless, in December 2014, following the ED, the IASB published amendments to IAS 1 which essentially state that a firm should also consider providing additional disclosures when IFRS-based reporting is deemed insufficient to enable users of financial statements to understand the impact of particular transactions, other events

and conditions on the firm's financial position or performance." (Paragraph 31 amendments to IAS 1, 2014). Hence, the IASB's position seems ambiguous about the possible use of non-GAAP measures.

Reflecting the initial IASB's stand with respect to non-GAAP reporting, it appears that IFRS mandatory adoption in Europe does not translate into a decrease in the use of non-GAAP measures. In fact, a study by PwC (2007) shows that the transition to IFRS does not change corporate practices with respect to financial communications. In fact, it appears that certain accounting standards can contribute to the proliferation of non-GAAP measures. IFRS 8 on segment reporting is one example. The standard requires the information published to be based on the information used internally, which is not necessarily fully compliant with IFRS-based information contained in the consolidated financial statements. Viewing a firm's performance "through the eyes of management" potentially leads to the spread of non-IFRS Segment information and is criticized by several stakeholders (Sukjar, 2007).

In the United States, several regulations frame the use of non-GAAP measures. For instance, SEC registrants must comply with Regulation G, which addresses all public non-GAAP financial disclosures. They must also comply with Item 10(e) of Regulation S-K, which covers non-GAAP information included in documents filed with the SEC, and Instruction 2 to Item 2.02 of Form 8-K for information furnished to the SEC. In addition, Compliance and Disclosure Interpretation (CD&I), Non-GAAP Financial Measures, issued in January 2010, further delineates the use of non-GAAP measures. In May 2016, the SEC issued another CD&I for the use on "non-GAAP measures". These C&DIs require firms that report a non-GAAP measure to report the most directly

comparable GAAP financial measure with equal or greater prominence and to reconcile both measures. It must be pointed out that the use of EBITDA is widely regulated in this document. And, in the most case, firms must disclose the reasons why the non-GAAP measure provides useful information to investors and why management uses the measure for, if applicable (PwC, 2014).

At the international level, faced with an increase in the use of non-GAAP measures, the International Organization of Securities Commissions (IOSCO) has recently published a “Statement on non-GAAP Financial Measures” intended “to assist issuers in providing clear and useful disclosure for investors and other users of non-GAAP financial measures, and to help reduce the risk that such measures are presented in a way that could be misleading” (IOSCO, 2016).

Canadian regulations are somewhat similar to those promulgated by the SEC. The Canadian Securities Administrators Staff Notice 52-306 explicitly states that: “In order to ensure that a non-GAAP financial measure does not mislead investors, an issuer should clearly define the measure and explain its relevance. As well, an issuer should present the measure on a consistent basis from period to period or explain any changes. Specifically, an issuer should provide a clear quantitative reconciliation from the non-GAAP financial measure to the most directly comparable measure calculated in accordance with the issuer's GAAP and presented in its financial statements, referencing to the reconciliation when the non-GAAP financial measure first appears in the document, or in the case of content on a website, in a manner that meets this objective (for example, by providing a link to the reconciliation)...”.

2.2 *Non-GAAP Measures: Opportunistic or Relevant Information?*

2.2.1 *Non-GAAP Reporting: A Common Practice*

Despite regulatory concerns, the disclosure of non-GAAP measures is becoming more widespread across listed entities. For instance, Marques (2010) investigates the disclosure of non-GAAP financial information by 361 firm from the U.S. S&P 500 for the period 2001-2003. She observes extensive disclosure of non-GAAP information, since 68% of firms regularly disclose such measures, with managers strategically emphasizing the non-GAAP measures compared to GAAP measures. Moreover, she notices that non-GAAP measures appear first in earnings news releases.

However, the disclosure of non-GAAP measures by a majority of listed firms raises the question of their relevance. In this regard, some studies highlight the potential for opportunistic behavior by managers in the release of non-GAAP information while other studies show that non-GAAP measures are informative for stock market participants. For instance, Bradshaw and Sloan (2002) show that over the past 20 years, there has been a dramatic increase in the frequency and magnitude of cases where “GAAP” and “Street” earnings differ.⁶ Their analysis of press releases underlines that management has taken a proactive role in defining and emphasizing non-GAAP metrics when communicating to financial analysts and investors. They consider that, either this increase reflects opportunistic behavior by managers with the objective of distorting market assessment of their firm’s performance, or a desire to better inform financial analysts and investors (i.e. signalling).

⁶ So-called “Street” earnings refer to earnings numbers used by financial analysts in their forecasting and valuation work.

2.2.2 A Reflection of Managerial Opportunism

The potential abuses in non-GAAP reporting have been of concern for several years, especially since the advent of Sarbanes-Oxley. Black et al. (2015) explore if the advent of SOX era regulations on the disclosure of non-GAAP measures influences their use by managers. They conclude that while regulatory intervention had a beneficial impact in reducing the opportunistic use of non-GAAP reporting, some firms still exclude some recurring items in an aggressive manner, potentially misleading investors.

Barth et al. (2012) investigate how market participants (managers and analysts) apply SFAS 123R, requires firms to recognize stock-based compensation as an expense. It appears that managers opportunistically exclude such expenses to increase earnings, smooth earnings, and meet earnings benchmarks. However, there is no evidence that these exclusions result in an earnings measure that better predicts future performance. In contrast, analysts exclude stock option compensation expenses from earnings forecasts when the exclusion increases earnings' predictive ability of future performance. Thus, managerial opportunism is the primary explanation for the exclusion of expenses from pro forma earnings while forecasting ability concerns underlie the exclusion from Street earnings.

In a similar vein, Aubert (2010) shows that non-GAAP metrics have the potential to misinform investors as they reflect figures that are opportunistically composed. The study of 116 financial press releases issued by French listed companies on the NYSE-Euronext Paris between 1996 and 2006 shows that non-GAAP earnings are higher than GAAP(or IFRS)-based earnings. The author identifies that 82% of non-GAAP measures were positive instead of negative compared to accounting measure. He concludes that

non-GAAP information tends to misinform market participants by releasing unregulated information that cosmetically improves financial performance.

Webber et al. (2013) provide evidence that is consistent with the view that non-GAAP measures provide investors with an embellished picture of firm performance. Examining the fourth quarter press releases of S&P 100 firms over the period 2005-2010, they find a strong increase in non-GAAP reporting, especially following the financial crisis of 2008. Many firms enhance their financial performance by releasing restated accounting earnings, which exclude restructuring charges, provisions (on tangible, financial assets and goodwill) and gains / losses on financial instruments and tangible assets. Baumker et al. (2014) show also that there is an opportunistic component in non-GAAP reporting. Indeed their study of 253 firm-quarters from the S&P 500 concludes that gains are less likely to be carved out of earnings when there are no concurrent transitory losses.

Doyle et al. (2013) show that managers' opportunism can manifest itself in the way non-GAAP measures are defined. They show that managers aim to meet or beat analyst expectations by defining non-GAAP in such a way that is not fully anticipated by analysts. As a benchmark beating tool, non-GAAP reporting is used as a substitute to accrual management. However, ultimately, it appears that investors discount earnings surprises that result from exclusions from GAAP earnings.

2.2.3 A Tool to Convey Strategic Information

However, there is also evidence that non-GAAP reporting can be informative. For instance, Entwistle et al. (2010) review the value relevance of GAAP earnings vs. pro

forma and I/B/E/S earnings and find that pro forma earnings are deemed the most relevant by market participants. Focusing on a sample of S&P 500 firms during the 2002-2007 period, Albring et al (2010) show that non-GAAP earnings measures are value-relevant, i.e., relate with a firm's stock price and returns. Furthermore, they find non-GAAP earnings to be more value relevant than GAAP operating earnings. In a similar vein, Venter et al. (2014) study the value relevance of a non-GAAP measure (headline earnings) relative to GAAP earnings in South Africa where there is a mandatory requirement to report both measures. Their results show that non-GAAP earnings reported under a mandatory regime have higher value relevance than GAAP earnings. Thus, the disaggregation of these items is useful to investors in a setting where managerial motivations are minimized.

Choi and Young (2015) suggest that non-GAAP earnings disclosures tend to be driven by a desire for informative (strategic) reporting when GAAP earnings beat (fail to meet) market expectations. Johnson et al. (2014) offer some insight into management's willingness to engage in non-GAAP reporting by showing a positive association between the prominent disclosure of non-GAAP earnings information and non-sophisticated investor reliance on this information. These results provide important evidence to Australian regulators as these narrative disclosures are not subject to regulation, in contrast to the US where mandatory regulation has been in place since 2003.

Curtis et al. (2014) aim to identify the motivation of managers to disclose non GAAP measures, that is, to inform or mislead. Examining 1,920 transitory gains disclosed quarterly in the 10Q/K filings from 2001 to 2009, they conclude that the most pervasive motivation to disclose non-GAAP earnings in the presence of transitory gains

is to inform investors. In the same way, focusing on New Zealand listed firms, Rainsbury et al (2015) show that management is motivated to use non-GAAP earnings to provide a more favorable impression of their firm's profitability. However, across firms, these non-GAAP earnings provide a better predictor of future earnings and are more value-relevant than GAAP earnings.

Hence, prior work about the use of non-GAAP metrics suggests that while managerial opportunism is an issue in the interpretation of such information, there is also reason to believe that non-GAAP metrics can complement GAAP reporting. Overall, taking into account these concerns, non-GAAP metrics generally improve financial communication and give a better view of the firm. However, the interface between GAAP and non-GAAP reporting as well as the impact of corporate governance on the quality of non-GAAP measures remain relatively unexplored.

2.3 Corporate Governance and Earnings Reporting

2.3.1 Corporate Governance and GAAP Earnings Reporting

The mapping between corporate governance and the quality of earnings reporting can be viewed from two perspectives. On one hand, Bushman et al. (2004) posit and report evidence that firms build strong governance structures to counter poor quality earnings measures. This line of reasoning suggests that corporate governance structures, such as external monitoring and concentrated ownership, respond to quality and that poor quality is associated with strong governance, i.e. improved governance is implemented to increase earnings quality.

On the other hand, there is an alternative perspective to the effect that governance deficiencies translate into poor earnings quality (e.g., Holthausen et al., 1995; Klein,

2002; Larcker and Richardson, 2004; Bowen et al., 2008). This line of research suggests that earnings quality responds to governance structures, i.e., that poor (discretionary) quality is associated with poor governance. For instance, Athanasakou and Olsson (2012) separate innate and discretionary components of earnings quality. Their results suggest that better discretionary earnings quality is associated with better governance, consistent with managers responding to governance structures when making reporting decisions.

2.3.2 Corporate Governance and Non-GAAP Earnings Reporting

There is limited evidence regarding the relation between corporate governance and non-GAAP earnings reporting. Overall, it appears that corporate governance does relate with the quality of published financial information. For example, Cormier et al. (2011) find that governance, as measured by director independence, does reduce the extent of managerial discretion in non-GAAP measures reported by Canadian flow-through entities. It is interesting to note that all entities in that group did release non-GAAP earnings metrics.

Frankel et al. (2011) examine 4246 U.S. firms between 1995 and 2005 and find that board of directors' independence is associated with the dissemination of non-GAAP measures. More specifically, they observe that firms with more independent boards tend to use less adjustments and exclusions in determining their non-GAAP measures than other firms. They conclude that board independence is positively associated with the quality of non-GAAP reporting. Similarly, Jennings and Marques (2011) show that before Regulation G, investors were misled by non-GAAP information for firms with weak governance. Following the enactment of Regulation G by the SEC in 2002, there is no evidence of such behavior. Their results show the importance of firm-level corporate

governance in ensuring quality non-GAAP reporting, even in a context of strong country-level governance.

Isidro and Marques (2013) focus on 318 large firms belonging to 20 European countries in 2003-2005. They show that the majority of these firms release non-GAAP measures, with 80% of the financial results' press releases containing at least one non-GAAP measure related to earnings. They document a positive relation between the propensity to disclose non-GAAP and the use of contracts that link director compensation to stock market performance. The existence of such contracts seems to induce some opportunism in non-GAAP reporting. However, they show also that the presence of a competent board of directors does reduce the propensity to disseminate non-GAAP information for opportunistic purposes. There does not appear to be any significant change in non-GAAP reporting in 2005, which is the IFRS transition year.

Finally, Bansal et al. (2013) show that managers whose compensation is more sensitive to the volatility of stock prices tend to disseminate more information about non-GAAP results. However, they show also that managers use these non-GAAP measures less opportunistically. Overall, we can conclude that the quality of a firm's corporate governance associates with both the quantity and the quality of non-GAAP reporting.

2.4 Hypotheses development

To understand the mapping between corporate governance and corporate reporting, one needs to consider both country-level governance (i.e., enforcement of relevant laws and regulations) and firm-level governance (i.e., board of directors) (Bonetti et al., 2016). With respect to country-level governance, based on a sample of

large European firms, Isidro and Marques (2015), investigate the influence of countries' institutional and economic factors on managers' non-GAAP disclosures. They find that managers are more likely to use non-GAAP measures to meet or beat earnings benchmarks that GAAP earnings would otherwise miss in countries with efficient law and enforcement, strong investor protection, developed financial markets, and good communication and dissemination of information. Their findings suggest that in environments in which there is more pressure to achieve earnings benchmarks and less opportunity to manipulate GAAP earnings, managers use more non-GAAP earnings disclosures to meet the benchmarks.

In that context, it appears that Canada represents an appropriate context to investigate non-GAAP reporting since the country has a developed well-regulated financial market with extensive analyst coverage for firms comprising the major stock market index. The latter attribute implies that there is pressure to achieve earnings benchmarks. Hence, for our purpose, country-level governance is held constant.

Based upon prior research on non-GAAP reporting, we put forward the following hypotheses:

H1a: EBITDA reporting is positively related to analyst following.

H2a: EBITDA reporting is negatively related to information asymmetry.

Prior research also indicates that non-GAAP reporting takes place in a context in which GAAP reporting does not leave much room for discretion (Isidro and Marques, 2015). Managers view non-GAAP reporting either as a tool to convey additional information that is not adequately reflected in GAAP earnings or as an opportunity to

deflect attention from unfavourable underlying earnings performance. If non-GAAP reporting is used strategically by managers, then we expect investors to use such information and to revisit their appreciation of underlying GAAP earnings. In other words, relevant and credible non-GAAP reporting is likely to enhance markets' appreciation of GAAP earnings. Alternatively, if non-GAAP reporting is viewed as deceptive by investors, then it is not expected to affect their appreciation of underlying earnings. Hence, the following hypotheses:

H3a: EBITDA reporting enhances the positive relation between earnings and stock pricing.

H4a: EBITDA reporting enhances the positive relation between earnings and future cash flows.

In addition, there is also the possibility that there is a substitution effect between firm-level governance and EBITDA reporting. In that respect, Cormier and Magnan (2014) as well as Craighead et al. (2004) both find that corporate disclosure and corporate governance can act as substitutes to one another. While they focus on either environmental reporting (Cormier and Magnan, 2014) or executive compensation reporting (Craighead et al., 2004), we can infer that their evidence extends to financial reporting. For instance, earnings are likely to be of high quality, i.e., relevant and reliable, if there is strong governance, a situation which will attract greater financial analysts' coverage and reduce information asymmetry. In such a context, EBITDA reporting is likely to be less needed and less relevant for stock market participants. EBITDA is likely to be more relevant in a context of weak governance, i.e. to act as a substitute for less

effective governance mechanisms in reducing asymmetry. Overall, EBITDA reporting helps market participants to better assess earnings valuation when the firm-level governance is weak. Hence, the following hypotheses:

H1b: Strong governance substitutes for EBITDA reporting in attracting financial analysts.

H2b: Strong governance substitutes for EBITDA reporting in reducing information asymmetry.

H3b: Strong governance substitutes for EBITDA reporting for stock pricing of earnings.

H4b: Strong governance substitutes for EBITDA reporting for the prediction of future cash flows.

3. Methodology

3.1 Sample

The sample comprises 233 Canadian firms composing the S&P/TSX Index of the Toronto stock exchange for 2012 and 2013, for a potential number of 466 firm-year observations. These firms represent more than 90% of the Canadian total stock market capitalization. Out of this sample of 233 firms, 8 firms have missing data for a final sample of 225 firms (450 firm-year observations – models 1, 2, 4, and 5). Stock market and financial variables are extracted from Compustat. Information about non-GAAP information is hand collected from annual reports. Governance scores are extracted from Board Games rankings published on an annual basis by The Globe & Mail, Canada's leading newspaper. Twenty-two (22) firms have no analyst earnings forecasts and 3 firms

are followed by less than 3 analysts, thus leaving a sample of 200 firms for the forecast dispersion model (400 firm-year observations observations – model 3). Dependent upon the model being used, regressions rely on samples of either 450 or 400 observations.

3.2 Empirical Models

The empirical models are the following:

EBITDA, governance and analyst following

$$\text{ANFOL} = \text{BETA} + \text{NEGEPS} + \text{NEGEPS} * \text{EBITDA} + \text{EBITDA} + \text{EBITDA} * \text{GOV} + \text{GOV} \quad (1)$$

EBITDA, governance and information asymmetry

$$\text{BAS} = \text{LNVOLUME} + \text{LNVOLATILITY} + \text{EBITDA} + \text{EBITDA} * \text{GOV} + \text{TOBIN} + \text{FIRM SIZE} + \text{GOV} \quad (2)$$

$$\text{FORDIS} = \text{BETA} + \text{ANFOL} + \text{NEGEPS} + \text{EBITDA} + \text{EBITDA} * \text{GOV} + \text{TOBIN} + \text{FIRM SIZE} + \text{GOV} \quad (3)$$

EBITDA, governance and value relevance of earnings

$$\text{Price} = \text{EQPS} + \text{EPS} + \text{EPS} * \text{NEGEPS} + \text{NEGEPS} + \text{EPS} * \text{GOV} + \text{EPSEBITDA} + \text{EPSEBITDA} * \text{GOV} + \text{EBITDA} + \text{EBITDA} * \text{GOV} + \text{GOV} \quad (4)$$

EBITDA, governance and predictive ability of earnings

$$\text{FCFOPS} = \text{CFOPS} + \text{EPS} + \text{EPS} * \text{GOV} + \text{EBITDA} + \text{EBITDA} * \text{GOV} + \text{EBITDA} + \text{EBITDA} * \text{GOV} + \text{GOV} \quad (5)$$

Where: ANFOL: Analyst following; BAS: Bid Ask Spread; BETA: Systematic risk; NEGEPS: Binary variable for negative earnings; EBITDA: Binary variable, 1 if the firm reports EBITDA, 0 otherwise; GOV: Corporate governance score. LNVOLUME: Natural log of annual trading volume; LNVOLATILITY: Natural log of share price volatility; FORDIS: Forecast dispersion; EQPS: Equity per share; EPS: Earnings per share; FCFOPS: Future cash flow from operations per share; CFOPS: Cash flow from operations per share; TOBIN: Tobin's q; FIRM SIZE: Natural log of total asset.

The valuation model is inspired by the work of Feltham and Ohlson (1995) and Amir and Lev (1996). Such a model maps a firm's book value and earnings into its stock market valuation. Finally, we expect a positive relationship between future cash flows and GOV, CFOPS, EPS, and EBITDA.

3.3 *Explanatory variables of asymmetry and stock market valuation*

Prior research suggests that stronger corporate governance should be associated with less information asymmetry and should improve analyst forecast accuracy (Vafeas, 2000; Dey, 2005). Moreover, the majority of the prior literature on the relation between corporate governance and firm value, documents that a stronger corporate governance is associated with a higher firm valuation (e.g., [Bebchuk et al., 2009](#), Cremers and Nair, 2005, and Yermack, 1996). **The measure of corporate governance, based on Board**

Games rankings published by The Globe & Mail, has been used in prior research (e.g., Bates and Hennessy 2010; Foerster and Huen 2004). The Board Games grid assigns firms a score of up to 100, and comprises four components: Board composition (31 points); Shareholding and compensation (26 points); Shareholder rights (31 points); Disclosure (12 points). A negative (positive) association is expected between GOV and measures of information asymmetry (stock market valuation).

Fortin and Roth (2007) find that beta is positively related to the number of analysts that cover a firm. Hence we expect BETA to be positively related to ANFOL.

Prior research document that trading volume and share price volatility are fundamental determinants of bid ask spreads (e.g. Guo et al., 2004). An inverse relationship between spreads and trading activity is expected (Demsetz, 1968). Price volatility is also a determinant of bid ask spreads and as such incorporated in information asymmetry models of the spread (e.g. Copeland and Galai, 1983; Aitken and Frino, 1996). Hence, we expect a negative (positive) relationship between BAS and $LnVOLUME$ ($LnVOLATILITY$). The logarithmic transformation of these two variables is used to reduce the skewness and potential heteroscedasticity problems (Aitken and Frino, 1996).

Patton and Verardo (2010) observe that the increase in systematic risk leads to greater analyst forecast dispersion. We expect a positive association between BETA and FORDIS. Analyst forecasts precision is likely to improve, as more information about a company is processed and disclosed by analysts (Alford and Berger, 1999). Thus, a negative association is expected between ANFOL and FORDIS. Firm size can also affect analyst forecasts since analysts tend to spend more effort to follow large firms and thus

may obtain more precise information about their future cash flows (Bhushan, 1989). In this paper, we use the natural log of total asset to control for the impact of firm size on BAS and FORDIS and expect a negative association. Prior research suggests that firm size is associated with information asymmetry since large firms receive more attention from stock market participants (Harris, 1994).

Hope (2003) shows that losses are associated with greater forecast errors. Hence, an indicative variable for negative earnings is used. We anticipate a positive relationship between NEGEPS and FORDIS.

Asymmetric information problems can be more severe for firms with significant growth opportunities (Smith and Watts, 1992). For example, Fosu et al (2016) show that firms with high growth opportunities are more likely to be adversely affected by information asymmetry compared to their counterparts with low growth opportunities. However, growth firms are likely to attract analysts, which in turn may reduce information asymmetry. Therefore, we have no predicted sign on the association between TOBIN and BAS and FORDIS.

4. Results

4.1 Descriptive statistics

Table 1 provides some descriptive statistics about sample firms' financial and governance variables.

[Insert Table 1]

Among the sample firms' attributes, we note that, on average, they are followed by around 14 (median 12) analysts financial analysts. 31.4% of sample firms report EBITDA, either in their MD&A or in press releases. 22.2% of earnings observations are actually losses. The Board Games governance score varies between 31 and 98, for an average of 68.3.

We perform some further analysis to assess if there is a systematic pattern in reporting EBITDA (untabulated). More specifically, we split the sample at the median of TOBIN and FIRM SIZE (LnAsset) and assess whether there is a significant difference in reporting EBITDA. T-tests and Kruskal-Wallis rank tests suggest that growth firms (group of high Tobin's q firms) are more likely to release EBITDA ($p < 0.000$; Chi^2 probability < 0.0001) while large firms are less likely to report EBITDA ($p < 0.002$; Chi^2 probability < 0.004).

4.2 *Multivariate analyses*

We then estimate OLS regressions using robust estimators since results from the Breusch-Pagan / Cook-Weisberg tests suggest the presence of heteroscedasticity (for the Bid Ask Spread model, $\text{Chi}^2 = 309.3$; $p < 0.00$ and for forecast dispersion model, $\text{Chi}^2 = 439.5$; $p < 0.00$). We exclude from regressions all observations with standardized residuals exceeding two.

[Insert Table 2]

Table 2 reports an ordinary-least-square regression on the relation between ANFOL (analyst following) and EBITDA reporting. The model explains 33.3% of overall variance in ANFOL. Consistent with hypothesis 1a, firms that release EBITDA seem to be more successful at attracting analysts since the coefficient for EBITDA is

positive and significant (2.937; $p < 0.056$). This suggests that firms reporting EBITDA have, on average, close to 3 more analysts than firms that do not report EBITDA. This association is greatly reduced in the presence of good governance (-0.082; $p < 0.001$), consistent with H1b that corporate governance moderates the relation between EBITDA reporting and analyst following. Moreover, the joint F test on the sum of the coefficients for EBITDA and EBITDA*GOV ($F = 42.45$; $p < 0.12$) suggests that it is near zero, suggesting a complete substitution effect. We can observe the substitution phenomenon by comparing beta coefficients, one almost cancelling out the other (-0.679 for EBITDA*GOV versus 0.589 for GOV).

[Insert Tables 3 and 4]

Tables 3 and 4 report OLS regressions on the relation between information asymmetry, as proxied by BAS (bid ask spread) and FORDIS (forecast dispersion), and EBITDA reporting.⁷ Both regression models are significant (respectively $p < 0.00$ and $p < 0.03$). Focusing on the model with BAS as a dependent variable (Table 3), we observe that the coefficient for EBITDA is negative (-0.317; $p < 0.048$), which is consistent with hypothesis 2a to the effect that EBITDA disclosure does reduce information asymmetry. However, GOV (corporate governance) does not moderate the relation between EBITDA reporting and BAS (0.003; $p < 0.122$). Hence, hypothesis 2b is not supported. We now turn our attention to Table 4, with FORDIS (forecast dispersion) as a second proxy for information asymmetry. Consistent with hypothesis 2a, the coefficient for EBITDA is negative (-0.218; $p < 0.017$), indicating that EBITDA disclosure does reduce information asymmetry. Moreover, consistent with hypothesis H2b, governance moderates the

⁷ A treatment effect controlling for the potential bias caused by endogeneity does not affect the results.

relation between EBITDA and FORDIS (0.003; $p < 0.071$). In other words, improved governance does reduce the impact of EBITDA disclosure on FORDIS. Hence, a partial substitution effect is observed between EBITDA reporting and corporate governance in terms of their impact on forecast dispersion.

[Insert Table 5]

Table 5 presents results of an OLS regression as to whether EBITDA reporting enhances the positive relation between earnings and stock market pricing. With an adjusted R-square of 75.4% (F: 189.9; $p < 0.00$), the regression model explains reasonably well variance in stock market prices, to a degree comparable to prior research. First, as documented in the literature, corporate governance enhances the association between earnings and stock market valuation as shown by the coefficient for EPS*GOV (0.095; $p < 0.001$). Consistent with H3a, for firms releasing EBITDA, earnings appear to be more value relevant since the coefficient on EPS*EBITDA is positive (14.617; $p < 0.002$). In other words, the disclosure of EBITDA seems to allow investors to better appreciate a firm's reported earnings. Moreover, consistent with H3b, corporate governance moderates the relation between EBITDA reporting and the value relevance of earnings (-0.177; $p < 0.008$). F tests of coefficient differences corroborate the evidence presented above about EBITDA and governance being substitutes in terms of their impact on the relation between earnings and stock market prices.

[Insert Table 6]

Table 6 presents results of an OLS regression as to whether EBITDA reporting enhances the predictive power of earnings with respect to future cash flows. First, consistent with Subramanyam (1996), current cash flows are positively associated with

future cash flows (0.506; $p < 0.000$). Consistent with H4a, EBITDA reporting enhances the positive relation between earnings and future cash flows (0.992; $p < 0.038$). Hence, the predictive ability of earnings is enhanced for firms that report EBITDA. While governance by itself relates to future cash flows (Coefficient for GOV: 0.022; $p < 0.003$), it does not appear to enhance the predictive power of earnings as the coefficient for EPS*GOV is not different from zero (-0.001; $p > 0.10$). However, the coefficient for EPS*EBITDA*GOV is negative (-0.013; $p < 0.054$). Therefore, corporate governance moderates the impact of EBITDA reporting on the relation between earnings and future cash flows. This result is consistent with H4b and with a substitution effect between governance and EBITDA disclosure. Results remain similar when we exclude current cash flows from operations from the regression.

As a sensitivity analysis, we split the sample at the median of CFOPS and assess if there is a significant difference in the predictability of FCFO between the two groups. Untabulated results suggest that the release of EBITDA is associated with future cash flows only for high FCFO firms ($p < 0.08$ for high FCFO firms versus $p < 0.556$ for low FCFO firms).

[Insert Table 7]

Many firms release adjusted EBITDA in place or in addition to EBITDA. Adjusted EBITDA reflects EBITDA plus or less some items that are judged to be non-recurring or non-persistent. For example, while some asset write-offs or non-cash expenses (e.g., stock based compensation) may be included in operating expenses to arrive at EBITDA, they may be removed from EBITDA to compute adjusted EBITDA. Since there is more flexibility for managers in the computation of adjusted EBITDA, a

question to investigate is whether adjusted EBITDA still reduces information asymmetry on stock markets. Table 7 reports our results for BAS (bid-ask spread) as a dependent variable (untabulated results are essentially the same with FORDIS as a dependent variable). First, our results suggest no significant difference on information asymmetry, as proxied by BAS, between releasing EBITDA only versus the release of Adjusted EBITDA. On the contrary, results reported in Table 7 show an increase in BAS for firms releasing only an adjusted EBITDA (1.841; $p < 0.022$) while corporate governance attenuates this increase in BAS (-0.021; $p < 0.078$). This finding suggests that, overall, managerial discretion in the computation of adjusted EBITDA has informational benefits from the perspective of market participants.

4.3 *Synthesis*

Overall, our results indicate that the disclosure of EBITDA (or Adjusted EBITDA) by a listed firm carries informational benefits as it reduces the information asymmetry between market participants (investors and analysts) and a firm's management. Moreover, such disclosure allows investors to better appreciate a firm's earnings in terms of stock market valuation and prediction of future cash flows. The information benefits of EBITDA disclosure are mostly captured in firms with weak governance, as there is a substitute effect between EBITDA disclosure and governance in terms of information asymmetry impact. In terms of stock market valuation and predictability of future cash flows, EBITDA disclosure and governance appear also to substitute for each other in enhancing earnings' valuation impact and predictive power.

5. Concluding remarks

In this paper, we investigate whether EBITDA, a well-known non-GAAP measure, helps reduce information asymmetry between managers and market participants beyond GAAP earnings, and whether it enhances the value relevance and the predictive ability of earnings. We also investigate if corporate governance potentially influences the impact of EBITDA reporting. We posit that good governance may substitute for non-GAAP reporting in attracting financial analysts and in reducing information asymmetry since in such a case, GAAP earnings are likely to be of good quality.

Results suggest that EBITDA reporting is positively related to analyst following, and negatively related to information asymmetry (Bid-ask spread and forecast dispersion). We also document an enhancement in the positive relationship between earnings and stock prices as well as future cash flows for firms reporting EBITDA. Moreover, it appears that corporate governance substitutes for EBITDA reporting for the perspective of stock market participants. EBITDA helps market participants to better assess earnings valuation when a firm's governance is weak. When governance is strong, the incidence of the release of EBITDA on stock markets decreases substantially.

Our results provide some insight on the debate concerning changes to the regulation on non-GAAP information. For instance, financial markets regulatory authorities have recently expressed some reservations about the reliability and comparability of non-GAAP measures reported by firms. Our results clearly show that non-GAAP reporting can play a useful role for capital markets participants. Moreover, our results also suggest that looking at only one dimension of a firm's financial reporting (e.g., earnings reporting) can be misleading as to its informativeness as it is often

accompanied by other reporting such as non-GAAP that complement it. Finally, it appears that a firm's governance influence on its financial reporting and on capital markets is fundamental yet not linear. The finding that a firm's governance substitutes for EBITDA reporting suggests that managers can compensate for their firm's weak governance by providing additional information to market participants. Alternatively, in a context of strong governance, reported earnings are a sufficient indicator of underlying firm performance for market participants and, therefore, they do not pay too much attention to EBITDA. Future research can fruitfully explore the interface between a firm's governance and discretionary managerial actions, such as EBITDA or other non-GAAP disclosures, as well as the resulting information dynamics.

Table 1
Descriptive Statistics

	Mean	Median	Std. Dev.	Min.	Max.
ANFOL	13.626	12	6.576	0	45
BAS (%)	0.521	0.307	1.253	0.026	21.286
FORDIS (N:400)	0.099	0.033	0.251	0	2.550
Price	27.827	21.772	33.281	0.570	424.11
CFOPS	2.859	1.894	4.907	-40.169	64.987
Beta (Raw)	0.349	0.424	4.988	-22.472	17.956
EBITDA	0.314	0	0.464	0	1
NEGEPS	0.222	1	0.415	0	1
VOLUME (in % of shares outstanding)	1.029	0.934	0.559	0.001	4.000
VOLATILITY (std. dev. of % changes in daily stock prices)	33.165	28.051	17.054	10.363	112.134
EQPS	17.120	11.134	29.703	-0.979	439.334
EPS	1.207	0.882	2.810	-27.047	26.025
TOBIN	1.577	1.343	0.934	0.469	11.497
GOV	68.343	69	15.931	31	98
Total asset (in million CND \$)	12 661	2 870	33 206	1 232	289 064

N:450

ANFOL: Number of analysts following a firm; BAS: Bid Ask Spread; FORDIS: Forecast dispersion scaled by absolute value of mean forecast; Price: Stock price at year-end; CFOPS: Cash flow from operations per share; BETA: Systematic risk; LnMV: Natural log of market value; NEGEPS: Binary variable for negative earnings; EBITDA: Binary variable, 1 if the firm reports EBITDA, 0 otherwise; EQPS: Equity per share; EPS: Earnings per share; TOBIN: Tobin's q; GOV: Corporate governance score.

Table 2
OLS Estimation of the Relationship between Analyst Following and EBITDA
Reporting in Interaction with Corporate Governance

Dependent variable: ANFOL		Coeff.	P Value (robust)	Beta Coeff.
BETA	+	0.132	0.001	0.152
NEGEPS	+/-	0.535	0.356	0.051
NEGEP*SEBITDA	+	1.655	0.045	0.074
EBITDA	+	2.937	0.056	0.323
EBITDA*GOV	+/-	-0.082	0.001	-0.679
GOV	+	0.155	0.000	0.589
R-Square		33.3%		
F Statistics		29.3 (0.00)		
F tests of coefficient difference				
EBITDA + EBITDA*GOV = 0		2.45 (0.12)		
N: 450				

One-tailed if directional prediction, two-tailed otherwise.

ANFOL: Analyst following; BETA: Systematic risk; NEGEPS: Binary variable for negative earnings; EBITDA: Binary variable, 1 if the firm reports EBITDA, 0 otherwise; GOV: Corporate governance score.

Table 3
OLS Estimation of the Relationship between Bid Ask Spread and EBITDA
Reporting in Interaction with Corporate Governance

Dependent variable: BAS		Coeff.	P value (robust)	Beta coeff.
LNVOLUME	-	-0.213	0.000	-0.213
LNVOLATILITY	+	0.430	0.001	0.173
EBITDA	-	H2a	-0.317	0.048
EBITDA*GOV	+/-	H2b	0.003	0.122
GOV	-		0.001	0.551
TOBIN	+/-		-0.099	0.121
FIRM SIZE	+		-0.073	0.100
R-Square			8.9%	
F Statistics			16.2 (0.00)	
F tests of coefficient difference				
EBITDA + EBITDA*GOV = 0			2.80 (0.08)	
N: 450				

One-tailed if directional prediction, two-tailed otherwise.

BAS: Bid Ask Spread; LNVOLUME: Natural log of annual trading volume;
LNVOLATILITY: Natural log of share price volatility; EBITDA: Binary variable, 1 if
the firm reports EBITDA, 0 otherwise; TOBIN: Tobin's q; FIRM SIZE: Natural log of
Total asset; GOV: Corporate governance score.

Table 4
OLS Estimation of the Relationship between Forecast Dispersion and EBITDA
Reporting in Interaction with Corporate Governance*

Dependent variable: FORDIS		Coeff.	P value (robust)	Beta coeff.	
BETA	+	0.004	0.070	0.084	
ANFOL	-	0.002	0.209	0.057	
NEGEPS	+	0.115	0.009	0.185	
EBITDA	-	H2a	-0.218	0.016	-0.397
EBITDA*GOV	+/-	H2b	0.003	0.071	-0.368
GOV	-	-0.002	0.019	-0.131	
TOBIN	+/-	-0.031	0.008	-0.112	
FIRM SIZE	+	-0.019	0.012	-0.110	
R-Square		11.3%			
F Statistics		2.13 (0.03)			
F tests of coefficient difference					
EBITDA + EBITDA*GOV = 0		4.61 (0.03)			
N: 400					

One-tailed if directional prediction, two-tailed otherwise.

FORDIS: Forecast dispersion; BETA: Systematic risk; NEGEPS: Binary variable for negative earnings; LnMV: Natural log of market value; ANFOL: Analyst following; EBITDA: Binary variable, 1 if the firm reports EBITDA, 0 otherwise; TOBIN: Tobin's q; FIRM SIZE: Natural log of Total asset; GOV: Corporate governance score.

*Observations with at least three analysts following the firm.

Table 5
OLS Estimation of the Relationship between Valuation of Earnings and EBITDA
Reporting in Interaction with Corporate Governance

Dependent variable: Price			Coeff.	P value (robust)	Beta coeff.
EQPS	+		0.683	0.000	0.614
EPS	+		-3.170	0.277	-0.265
EPS*NEGEPS	-		-6.563	0.002	-0.308
NEGEPS	-		-5.087	0.003	-0.062
EPS*GOV	+		0.095	0.001	0.559
EPS*EBITDA	+	H3a	14.617	0.002	0.618
EPS*EBITDA*GOV	+/-	H3b	-0.177	0.008	-0.609
EBITDA	+		-14.517	0.034	-0.241
EBITDA*GOV	+/-		0.230	0.025	0.241
GOV	+		0.002	0.491	0.001
R-Square			75.4%		
F Statistics			189.9 (0.00)		
F tests of coefficient difference					
EPS + EPS*GOV = 0			4.16 (0.04)		
EPS*EBITDA + EPS*EBITDA*GOV = 0			6.35 (0.01)		
N: 450					

One-tailed if directional prediction, two-tailed otherwise.

Price: Stock price at year-end; EQPS: Equity per share; EPS: Earnings per share;
 NEGEPS: Binary variable for negative earnings; EBITDA: Binary variable, 1 if the firm
 reports EBITDA, 0 otherwise; GOV: Corporate governance score.

Table 6
OLS Estimation of the Relationship between Future Cash Flow from Operations
and EBITDA Reporting in Interaction with Corporate Governance

Dependent variable: FCFO (t+1)		Coeff.	P value (robust)	Beta coeff.	Coeff.	P value (robust)	Beta coeff.
CFOPS	+	0.506	0.000	0.666	-	-	-
EPS	+	0.449	0.006	0.377	0.158	0.365	0.129
EPS*GOV	+	-0.001	0.754	-0.050	0.004	0.274	0.318
EPS*EBITDA	+ H4a	0.992	0.038	0.431	2.092	0.012	1.168
EPS*EBITDA*GOV	+/- H4b	-0.013	0.054	-0.485	-0.026	0.032	-1.211
EBITDA	+	0.106	0.460	0.014	-0.527	0.558	-0.095
EBITDA*GOV	+/-	-0.005	0.753	-0.051	0.003	0.850	0.036
GOV	+	0.022	0.003	0.102	0.035	0.000	0.212
R-Square		70.5%			26.7%		
F Statistics		121.3 (0.00)			15.42 (0.00)		
F tests of coefficient difference							
EPS*EBITDA + EPS*EBITDA*GOV=0		3.13 (0.07)			5.15 (0.02)		
N: 450							

One-tailed if directional prediction, two-tailed otherwise.

FCFOPS: Future cash flow from operations per share; CFOPS: Cash flow from operations per share; EPS: Earnings per share; EBITDA: Binary variable, 1 if the firm reports EBITDA, 0 otherwise; GOV: Corporate governance score.

Table 7
OLS Estimation of the Relationship between Bid Ask Spread and ADJEBITDA
Reporting in Interaction with Corporate Governance

Dependent variable: BAS		Coeff.	P value (robust)	Beta coeff.
LNVOLUME	-	-0.187	0.001	-0.193
LNVOLATILITY	+	0.427	0.004	0.177
ADJEBITDA	-	2.042	0.010	0.600
ADJEBITDA*GOV	+/-	-0.023	0.040	-0.478
GOV	-	0.003	0.478	0.039
TOBIN	+/-	-0.124	0.054	-0.099
FIRM SIZE	-	0.052	0.174	-0.067
R-Square		10.2%		
F Statistics		7.1 (0.00)		
F tests of coefficient difference				
ADJEBITDA +		6.77 (0.01)		
ADJEBITDA*GOV = 0				
N: 450				

One-tailed if directional prediction, two-tailed otherwise.

BAS: Bid Ask Spread; LNVOLUME: Natural log of annual trading volume;
LNVOLATILITY: Natural log of share price volatility; ADJEBITDA: Binary variable, 1
if the firm reports only Adjusted EBITDA, 0 otherwise; TOBIN: Tobin's q; FIRM SIZE:
Natural log of Total asset; GOV: Corporate governance score.

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