

Financial restatements: A comprehensive survey of causes and effects

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ABSTRACT

Corporate executives are compensated largely using incentive compensation, yet those same corporate executives direct financial reporting that is the basis for that compensation. A significant number of companies restate their financial results, and executives' incentive compensation is clearly a motivating factor in their decisions on how to present the company's financial results, creating temptation to falsely inflate those results. When a company must restate financial results, particularly when the restatement is due to earnings management, consequences include stock price decreases, higher cost of capital, turnover of top management and auditors, loss of confidence in subsequent financial reporting, and even potential detrimental contagion to the restating company's peers.

Some firms are more prone to restatements than others, particularly those with above-average accruals, newer companies in growth industries, and those with less-than-stellar corporate cultures. Specialist auditors and highly-qualified, independent boards are countervailing factors diminishing restatement risk, and increased oversight appears to have curtailed somewhat as well. Methods for predicting restatements have mixed results, but nevertheless there is a thriving industry of analysts focused on doing that, and downward price adjustment on a company's stock can be observed before an actual need to restate is made public. Restatements increased significantly subsequent to the enactment of Sarbanes-Oxley, but their number has diminished in more recent years. Regardless, the number of financial restatements remains significant and understanding the underlying reasons for them, how to detect them, and fallout of them is therefore relevant.

Keywords: financial restatements, incentive compensation, financial fraud, earnings management

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INTRODUCTION

Over the past several decades, there has been a substantial increase in the role of incentive compensation as part of corporate executive compensation. Following the caps on basic salary imposed by federal regulation, companies have needed to move compensation to an incentive basis. However, the very executives who are being compensated based on the achievement of various financial goals are also the individuals who are broadly, if not specifically, responsible for creating the metrics to document their achievement of these goals. At the same time, restatements of U.S. public companies' financial results have proliferated. One of the most interesting implications of such restatements is in the area of executive compensation. There is considerable evidence linking the increase in financial restatements to the levels of incentive compensation received by the top executive management of the restating companies (Palmrose & Scholz, 2004). This survey paper summarizes key literature on this phenomenon, explores its impact on the restating company and its stakeholders, and highlights several areas for future research.

The paper begins with a review of key studies connecting incentive compensation to earnings management. It then examines typical characteristics of firms that have a disproportionate number of restatements including managerial and other firm governance and oversight attributes. Next, it reviews the characteristics of the restatements themselves, the various methodologies for committing misstatements of financial information, and the direct consequences to the restating firms once various types of restatements are revealed. This survey then turns to the competitor and financial market impacts on other firms in a restating firms' industry, stock prices and, in turn, cost of capital. Finally, it concludes with a review of restatement prediction techniques, some recent trends, and suggests several avenues for future empirical research.

There is a significant number of studies connecting earnings management on the part of top executives to their incentive compensation (Erickson, Hanlon, & Maydew, 2006) and, further, documenting a more definitive impact when executive stock options are separated from other forms of incentive compensation such as the underlying shares of company stock (Kedia, 2003). Research reveals that certain types of firms are more prone to restatements, including those with less-experienced and non-CPA financial chiefs (Aier, Comprix, Gunlock, & Lee, 2005; McCarty, 1999), those with less-independent boards of directors (Efendi, Srivastava, & Swanson, 2007), companies with more significant debt and covenant restrictions (Burns & Kedia, 2006; Efendi et al., 2007), and those with lower-quality corporate cultures (Baker & Griffith, 2007).

Some auditor attributes have been connected to the likelihood of restatements as well, such as whether a company's auditor is a specialist in that company's industry (Balsam, Krishnan, & Yang, 2003). A company's level of discretionary accruals has perhaps the most well-recognized connection to probability of a restatement (Dechow, Ge, Larson, & Sloan, 2011), but the models for determining those levels have less-than-stellar predictive validity (Badertscher, Collins, & Lys, 2012).

The majority of restatements are intentional (Badertscher, et al., 2012), and public oversight from regulatory agencies has increased as a result (Palmrose, 2004; GAO, 2002). Lawsuits also commonly follow restatements (Gleason, 2008), and management and auditor turnover frequently ensues as well (Desai, Hogan, & Wilkins, 2006; Wu, 2002; Dechow et al., 2011).

A restating company's stock price generally declines (Dechow, Sloan, & Sweeney, 1996; GAO, 2002) and, related to this, its cost of capital generally increases (Hribar & Jenkins, 2004). Stock price adjustments are due to both increased uncertainty and concerns regarding future cash flows (Anderson & Yohn, 2002), and the degree of stock price or cost of capital impact depends on the type of restatement and its magnitude (Wu, 2002).

A restating company has a contagion impact on its peers as well, causing varying degrees of negative impacts to those peers depending upon the circumstances (Gleason, Jenkins, & Johnson, 2008; Xu, Najand, & Ziegenfuss, 2006). Generally this contagion relates to the change in the restating company's cash flow expectations extending to other entrants in its industry with similar characteristics (Gleason et al., 2008; Xu et al., 2006).

There are several tools that have been devised in an effort to predict restatements (Brazel, Jones, & Zimbelman, 2009), but none is well-suited to all situations (Dechow, Ge, & Schrand, 2010). Tactics include examining everything from accrual levels (Dechow, Ge, Larson, Sloan, & Investors, 2007) to corporate governance attributes (Baker & Griffith, 2007), to the level of short interest in a company's stock (Desai, Krishnamurthy, & Venkataraman, 2006).

Although short-term aberrations in the number of restatements have been observed as a result of the implementation of the Sarbanes-Oxley Act (Tysiac, 2014), they nevertheless continue to an extent attracting increasing attention from various regulatory bodies such as the Public Company Accounting Oversight Board (Knox, 2014) and the advent of an industry of analysts focused solely on benefitting from identifying companies most likely to restate (Got 'em, 2014). Future activity of this nature will surely continue.

INCENTIVE COMPENSATION AND EARNINGS MANAGEMENT

In the world of earnings announcements, there are times in which the announced earnings may be (perhaps inadvertently) tilted to support a desired managed value that must be restated later. When intentional, these tilted earnings announcements are commonly known as earnings management – defined as management manipulation of reported earnings through use of accounting methods to influence short-term financial results (Akers, Giacomino, & Bellovary, 2007). There is significant evidence that components of executive compensation directly tied to company performance – also known as incentive compensation – are connected to companies' restatements of their financial results (Palmrose & Scholz, 2004).

Incentive compensation for top corporate management has been on the rise in recent decades; in fact, more than 1,000 publicly-traded companies committed accounting fraud between 1989 and 2008 (Davidson, 2014). This can be partly attributed to a Federal tax law change limiting deductibility of executive salaries. In 1993, the Internal Revenue Service placed the maximum deductible salary amount at \$1 million annually, but exempted "performance-based" compensation (I.R.C. § 162(m)). This exemption surely contributed to the increased use of incentive compensation during this period, but that increase had already begun years earlier. For example, the increased connection of chief financial officers' compensation to company performance was already increasing when that IRS limitation was enacted, with the median exposure of their wealth to firm stock prices tripling during the period 1980-1994 (Hall & Liebman, 1997).

Chief executive officers' total compensation has increased dramatically during this period almost entirely because of the rapid increase in the value of performance-based incentives that have been granted to them (Hall & Murphy, 2003; Jensen, 2005). As a result, salary and bonuses

paid in cash now represent approximately 37% of total chief executive officers' compensation (Francis & Lublin, 2015). Several authors document the increased connection of management compensation to company stock prices, noting a surge in the inclusion of company stock options in compensation packages (Erickson et al., 2006; Hall & Liebman, 1997; Murphy, 1999). Although a minority opinion holds that including company stock options in top management's compensation packages is an inefficient means of compensating them (Jenter, 2001; Meulbroek, 2001), the prevailing view is that executive stock options generate positive results in the form of future accounting earnings payoffs (Hanlon, Rajgopal, & Shevlin, 2003) because incentive compensation aligns top management's goals with that of their shareholders (Jensen & Meckling, 1976).

Unfortunately, there is also a general recognition that incentive compensation can motivate top executives to engage in earnings management to garner increased gains on sales of their company's stock options or the company shares themselves (Beneish, 1999); the motive of those financial manipulations usually being to maintain the company's stock price in times of financial deterioration (Dechow et al., 2007). For example, the infamous founder and chief executive officer of WorldCom, Bernard Ebbers, asserted that his fraudulent actions were committed in an effort to keep up with Wall Street's expectations (Ackman, 2005). (He added that it was not for his own personal wealth – but this is a claim many would surely question.) In his semiannual testimony to congress, then Federal Reserve Chairman Alan Greenspan stated, "An infectious greed seemed to grip much of our business community... ...[this] suggests that options were poorly structured and, consequently, they failed to properly align the long-term interests of shareholders and managers" (Federal Reserve Board, 2002).

Increased corporate fraud is therefore a predictable outcome of incentive compensation (Erickson et al., 2006), and there is more use of discretionary accruals to manage earnings in companies whose chief executive officers' compensation is closely tied to stock and options in their company (Bergstresser & Phillippon, 2006). This connection between incentive compensation and corporate malfeasance appears to be quite firm (Gao & Shrieves, 2002) and, moreover, the greater the convexity of chief executive officer wealth to company stock prices, the greater the likelihood of earnings management occurring (Burns & Kedia, 2006).

There are, however, some countervailing studies that show large equity holdings on the part of companies' top executives actually mitigate malfeasance (Bergstresser & Phillippon, 2002), and that there is no relationship between incentive compensation and accounting fraud (Erickson et al., 2006). But these studies fail to separate the various components of that incentive compensation and, therefore, may mask the connection and impact of some components contained within the compensation "bundle". Research design and underlying assumptions therefore influence results and whether a connection between incentive compensation and restatements is found (Armstrong, Jagolinzer, & Larcker, 2010).

One view holds that unrestricted stock holdings are more closely associated with fraud than options because of their linear relationship of price to earnings versus the convex relationship of options (Johnson, Ryan, & Tian, 2009). But the more prevalent view is that, when executive holdings of company stock are viewed separately from holdings of options on that stock, it is the options that exhibit the significant relationship with earnings management (Kedia, 2003). Further, sizable in-the money company stock options have been shown to increase the likelihood of restatements; this relationship has been positively correlated to the number of options held multiplied by the excess of the stock price over the option exercise price (Efendi et al., 2007).

One of the reasons for options being more closely related to earnings management than other forms of incentive compensation is that, compared to the underlying stock shares themselves, stock options have no downside – and holding them facilitates top management exit strategies better than holdings of the underlying shares (Burns & Kedia, 2006). Other components of chief executive officers' compensation such as equity, restricted stock, salary plus bonus, and other long-term incentives, when separated from company stock options, have been found to bear no significant relationship to executive acts of malfeasance (Burns & Kedia, 2006).

Regardless, granting company stock options to top corporate management is shown to be consistent with maximizing the value of the firm (Erickson et al., 2006), and a strong link between chief executive officers' compensation and company financial performance has been shown to be associated with higher firm values (Jensen & Meckling, 1976; Smith & Stulz, 1985).

FIRM CHARACTERISTICS AND GOVERNANCE

Attributes of firm governance and characteristics of the firm itself also affect the likelihood of financial misdeeds. The quality of reported earnings depends not only on financial performance, but also how the accounting system measures it (Dechow et al., 2010), and managerial intervention into the accounting process can damage the effectiveness of the accounting output, adding noise and/or bias to the reported numbers (Badertscher et al., 2012).

Restatements of company financial data are more common when firms' chief financial officers are not Certified Public Accountants and possess less experience (Aier et al., 2005). Despite this, chief financial officers have moved away from their traditional role of financial reporting enforcement (Aier et al., 2005), and they are much less likely to be Certified Public Accountants than once was the case (McCarty, 1999). Today's chief financial officer is valued more for the ability to raise funds than prowess as an accounting officer (Jones, 2000).

Other elements of corporate governance matter too. For example, when a company's board of directors is more independent and contains members with financial expertise, restatements of financial data are less likely (Agrawal & Chadha, 2005). Conversely, when a company's audit committee possesses stock options, the likelihood of restatements increases (Archambeault, DeZoort, & Hermanson, 2008), and having the firm's chief executive officer serve as the chair of the company's board of directors contributes to agency issues as well (Efendi et al., 2007). Whistle-blowing has also been shown to be more prevalent in environments of poor governance, and positively correlated with agency issues (Bowen, Call, & Raigopal, 2010). Corroborating this, errors and omissions insurance underwriters, actuaries, and other risk managers look to "deep governance" of a company – its culture and character – when making their risk assessments (Baker & Griffith, 2007).

Other characteristics of the company, apart from its management and governance, also have a bearing on the likelihood of financial restatements. For example, restatements are more common in growth companies experiencing downturns and, as indicated previously in this paper, the original misstatements are frequently motivated by executives' desire to maintain the company's stock price (Dechow et al., 2007).

Another company attribute contributing to the temptation to manage earnings is a firm's debt level and related requirements – both for existing debt and when there is a need to raise new financing. Restating firms are more likely to have higher leverage (Burns & Kedia, 2006), and manipulation of earnings is more prevalent in situations where significant debt covenant restraints exist, when the company is accessing the capital markets for additional funding (Efendi

et al., 2007), or when it is trying to attract financing at a lower cost (Dechow, Sloan, & Sweeney, 1996).

Other firm attributes associated with restatements include extensive use of leasing, abnormal employee reductions (Dechow et al., 2011), and high expectations for market performance (Richardson, Tuna, & Wu, 2002). An above average number of restatements has also been observed in high-tech firms (Wu, 2002), and restating companies' stock price to earnings and market to book ratios are typically above the norm as well (Dechow et al., 2011). As firms age, company-specific risks of restatements tend to decrease (Easley & O'hara, 2004).

AUDITOR ATTRIBUTES AND ACCRUALS

The Securities and Exchange Commission has stated that it regards restatements as audit failures (Turner, 1999). The level of audit fees can be one indicator of trouble, as abnormally high auditor fees have been shown to be positively correlated with discretionary accruals and poor internal control (Gul, Chen, & Tsui, 2003; Hogan & Wilkins, 2008; Charles, Glover, & Sharp, 2010).

Firms employing auditors who specialize in their industry are more likely to have higher earnings quality than firms that do not (Balsam et al., 2003). This is partly due to specialist auditors' familiarity with the industry enabling them to detect problems better (Owhoso, Messier, & Lynch, 2002), and also due to specialist auditors' better adherence to audit standards (Okeefe, King, & Gaver, 1994). Specialist auditors therefore curb earnings management more effectively than non-specialist auditors and, associated with this, a lower level of discretionary accruals has been found in firms with specialist auditors than other companies (Balsam et al., 2003).

Because executives can and will manage accruals to maximize their incentive compensation (Healy, 1985), abnormally high levels of accruals are considered by many to be key indicators of earnings manipulation (Dechow, Sloan, & Sweeney, 1996). It follows, then, that misstating firms are observed to have higher accruals and assets subject to discretionary valuation, making their values easier to manipulate (Dechow et al., 2011). Indeed, the use of accruals, a key tool to adjusting presented numbers, is more prevalent in companies for which stock options are a significant portion of executive compensation (Kedia, 2003).

Unfortunately, however, it can be difficult to detect high levels of discretionary accruals effectively, because discretionary accrual testing models are not good at separating accruals that are discretionary from those that are not (Badertscher et al., 2012). Nevertheless, accrual-based earnings management was observed to be on the increase in the years leading up to the Sarbanes-Oxley Act (Cohen, Dey, & Lys, 2008).

RESTATEMENTS, PREDOMINANT TYPES, RESULTING LITIGATION AND REGULATION

Not surprisingly, restatements are usually negative, and are revealed in a situation in which company profits are declining and the firm is not keeping up with its peers (Callen, Livnat, & Segal, 2006). Usually, announcements of company financial restatements come from the press, Securities and Exchange Commission 8-k Reports, or when the restated financials are actually publicly filed; some restatements arise due inadvertent errors or system malfunctions (Gleason, 2008), but approximately two thirds are due to various techniques of earnings management (Badertscher et al., 2012).

The Securities and Exchange Commission describes restatements as the most visible indicator of improper accounting – and a significant source of investigations (Schroeder, 2001), and further identified restatements as the justification for its earnings management initiative (Bartlett, 1998; Berton, 2000; Loomis, 1999; McNamee, Dwyer, Schmitt, & Lavelle, 2000; Public Accounting Report, 1998). The resulting increased Securities and Exchange Commission oversight also includes the formation of a public oversight board panel on audit effectiveness (Palmrose, 2004), and the Public Company Accounting Oversight Board announced intentions to expand its review procedures as well (Knox, 2004).

The United States Government Accountability Office (GAO) has also delved into the proliferation of public company financial restatements (GAO, 2002); and legislatures promulgated the well-known Sarbanes Oxley Act of 2002, significantly extending the required affirmative assurances of public companies' financial data by their chief executive officers, and imposing severe personal penalties on them for acts of malfeasance or reporting failures (Palmrose & Scholz, 2004). Initially, restatements surged upon implementation of the Sarbanes Oxley Act, but have subsequently fallen, reaching a ten-year low in 2009 (Tysiac, 2014), and continuing to fall after that (Murphy, 2015). As the number of restatements has fallen, concurrently the proportion of restatements affecting net income has decreased as well, with only 41% of reported restatements affecting the bottom line in 2014 (Murphy, 2015).

Most recently, the Justice Department has modified its guidelines to increase the degree to which individuals, and not just companies, face criminal prosecution – considering cooperation with its investigations acceptable only when information regarding specific individuals' actions are provided (Viswanatha, 2015). Indeed, the Department's previous assumption that its prosecutors and corporate leadership share the same goals of preserving market integrity has been replaced by the premise that effectiveness of investigations is maximized only when all responsible individuals are held accountable for their actions (Viswanatha, 2015).

The Securities and Exchange Commission is also increasing its emphasis on individuals, and has proposed strengthening clawback rules wherein public companies' executives would be required to return incentive compensation they received based on profitability or other financial metrics upon a determination that errors existed (Ackerman, 2015). Although many companies voluntarily invoke such clawback rules, those rules would become mandatory in order for the company to avoid being delisted (Ackerman, 2015) and, further, they extend to inadvertent mistakes as well as intentional wrongdoing (Ackerman, 2015).

Restatements also create legal liability and reduce company credibility with stakeholders; some result in Securities and Exchange Commission enforcement actions, some result in lawsuits (Gleason, 2008). Despite the fact that Directors' and Officers' Insurance intermediates between the investment community and a company's top management and Board, the class action lawsuits and stock price declines that generally follow restatements usually lead to management turnover and a change of the auditors associated with the restatement (Desai et al., 2006; Wu, 2002; Deshow et al., 2002).

The causes of restatements vary, but there are predominant types; and their impact on stock values varies depending on the characteristic of the restatement and its magnitude (Wu, 2002). Inadvertent causes such as clerical mistakes, financial software malfunctions, and/or misapplication of accounting policies with minimal effect on the financial results do not appreciably impact a company's stock price (Anderson & Yohn, 2002). Damage to companies' stock prices is more severe when an irregularity involves multiple accounts, when the

companies' auditors are involved (Palmrose, 2004), or when there is enforcement action connected to fraud (Karpoff, Lee, & Martin, 2006). These stock price impacts are caused by both increased uncertainty regarding the accounting information as well as the expected decrease to the restating firms' future cash flows (Anderson & Yohn, 2002). Restatements that have an impact on net income typically reduce the previously reported net income amount by an average of 23% and previously reported assets by an average of 5% (Turner, Anderson, & Bailey, 2001).

Restatements also vary between those considered to be core versus non-core. Core restatements refer to those that involve revenue, cost of goods sold, selling, general and administrative expenses, and other primary operating expense accounts (Palmrose & Scholz, 2004). Overstatement of revenues and reserves are the most common among these, and most firms manipulate more than one account (Dechow et al., 2007). Revenue recognition issues are believed to be responsible for perhaps two thirds of fraud cases (Got 'em, 2014). Expense misstatements are also among the most frequent, and capitalizing items as assets when they should be expensed is common as well (Dechow et al., 2011). More recently, an increase in inadequate accounting for inventories has also been documented (Murphy, 2014).

Restatements related to fraudulently reported core items increase the likelihood of successful litigation against the restating firm (discussed later in this paper); in fact, only 10% of Securities and Exchange Commission enforcement actions involve non-core items (Palmrose & Scholz, 2004). Revenue-related restatements tend to cause the most significant investor reactions (Wu, 2002), because revenue is most closely connected to future cash flows (Anderson & Yohn, 2002). Connected to this, the accounting firm PricewaterhouseCoopers documented revenue recognition issues as the most frequent accounting allegation in class-action lawsuits (PricewaterhouseCoopers, 2000).

Finally, the type of malfeasance is also impacted by the macroeconomic environment and financial markets' relative sensitivity to particular components of financial results. Revenue fraud is most prevalent when the market is focusing on revenues, expense fraud is most prevalent when the market is focusing on earnings, and balance sheet fraud is most prevalent when default risk premiums are high (Davidson, 2014).

CONTAGION ON OTHER INDUSTRY ENTRANTS

When a firm restates, it frequently affects other non-restating firms of similar characteristics in its industry; this is commonly referred to as contagion. Contagion has been documented to exist for firms in the same industry as the restating firm (Gleason et al., 2008), and so one firm's restatement frequently has an impact on its competitors' stock prices (Xu et al., 2006). For example, Freddie Mac's restatement had a negative impact on Fannie Mae (Barta, 2004). Before the Enron debacle, no contagion had been observed; however, restatement activity increased considerably after that event (Wu, 2002), and so it makes sense that more contagion would be observed subsequently.

Contagion effects are generally concentrated among revenue restatements (Gleason, 2008) due to revenue's aforementioned direct relationship to future cash flows; but other items are found to affect the level of contagion as well, including whether the misstatement was discovered first by a company's management or its auditors, and/or the number of restatements made by a particular firm (Kravet & Shevlin, 2010).

Although the negative impacts of contagion on a restating firm's peers are well-established, there appears to be no positive competitive effect – other firms gaining a competitive

advantage over the restating firm (Xu et al., 2006). Rather, contagion's negative impacts appear to arise solely from the reduction in future cash flow expectations, not increases to competitors' cost of capital; and it follows that competitors with similar cash flow characteristics and leverage to the restating firm are most susceptible to that contagion (Xu et al, 2006).

STOCK PRICE ADJUSTMENT

Stock prices are affected by overall market conditions, but firm-specific conditions (such as a restatement) affect a firm's stock price as well, and studies vary regarding the relative impact of market versus firm-specific attributes (Ball & Brown, 1968). Although restatement activity rose significantly after the Enron event, earlier studies as far back as 1968 documented evidence of stock price adjustment to restatement announcements (Ball & Brown, 1968). That early evidence included market reactions in terms of volume as well as price (Kiger, 1972).

So, although the stock market typically responds negatively to a company's restatement of its financial results (Palmrose, Richardson, & Scholz, 2004), not all restatements affect shareholder wealth equally; in fact, some restatements do not cause any negative stock price impact (Gleason, 2008). Restatements of the aforementioned "core" items tend to cause the largest stock price adjustments (Palmrose & Scholz, 2004).

The degree of market response also depends on the restatement's quantitative (how much) as well as its qualitative (whether fraud is involved) characteristics (Wu, 2002). It is well-established that restatements arising from accounting irregularities lead to negative abnormal returns for investors in the restating firms (Xu et al., 2006). These abnormal returns are not only due to reduced cash flow expectations, but also to an increased discount rate being applied to accommodate investors' perception of increased risk and weak accounting systems (Hribar & Jenkins, 2004; Callen et al., 2006). Whistle-blowing also causes negative stock price reaction, especially when earnings management is alleged (Bowen et al, 2010).

In 2004, the Securities and Exchange Commission began requiring listed companies to disclose on Form 8-k any restatement that causes their overall financial results to be unreliable; these restatements are considered to be more severe than those not requiring that disclosure, and more dramatic stock price reactions occur in circumstances in which the 8-k form is filed than those in which it is not (Tysiac, 2014).

Examples of strong stock price reactions to restatements abound, including Cendant, Sunbeam, Microstrategy, and more (Turner, Dietrich, Anderson, & Bailey, 2001; Richardson et al., 2002). According to a 2002 United States General Accounting Office report, restatement announcements had caused a decline in total market capitalization of about \$100 billion – in addition to damaging public confidence (GAO, 2002). In his testimony to the senate subcommittee, the chairman of the Federal Reserve Board also stated that investors have suffered as capitalization has been lost due to restatements (Palmrose, 2004). Although there are ebbs and flows, restatement announcements continue to the present time; for example, Hertz Global Holdings announced in June 2014 that its 2011 results most recently included in its 2013 annual report "should no longer be relied upon", resulting in a 9% one-day decrease in its stock price (Calia, 2014a). Then, the company subsequently announced that its 2012 and 2013 results would also be restated; and its stock price decreased dramatically during the months following the announcements (Calia, 2014b).

There are numerous studies attempting to quantify the magnitude of restatements' dollar effect on stock prices, each with a slightly different methodology or study time-frame, showing

abnormal returns to investors of -4% to -12% (Dechow, Hutton, & Sloan, 1996), or absolute decreases in stock prices of 2% to 6% (Anderson & Yohn, 2002; Palmrose et al, 2004) and 2% to 10% (GAO, 2002). One study separated restatements in which earnings management was alleged from those in which it was not, finding only a 2.8% price reduction in a five day window surrounding the restatement in non-earnings management cases versus a 7.3% reduction in the same window when earnings management was alleged (Bowen et al., 2010). In another study, downward stock price movement was documented to begin fully six months prior to companies' restatement announcements, with further downward drift in the four months following the announcements (Wu, 2002).

In a testament to reduced company credibility after restatements versus before, markets react less to earnings reports subsequent to restatements than reports prior to the restatements (Anderson & Yohn, 2002). Lastly, anticipated restatement announcements cause a period of wider bid/ask spreads on a company's stock, as well as decreased trading volumes – proxies for decreased liquidity in the company's stock (Lee, Mucklow, & Ready, 1993). This is another indication of investors' increased perception of information asymmetry (Copeland & Galai, 1983).

COST OF CAPITAL IMPACT

Connected to stock price adjustments is the cost of capital impact restating companies generally encounter. Publicly available data reduces information asymmetries (Verrecchia, 1982), but the quality as well as quantity of information influence cost of capital (Easley & O'hara, 2004). Studies generally show that a company's cost of capital increases after a restatement (Hribar & Jenkins, 2004) with one quantifying the typical increase at .86% (Kravet & Schevlin, 2010). This is due to the increased risk perceived in the marketplace following a restatement; it takes approximately 36 months for that increased risk loading to dissipate completely (Kravet & Shevlin, 2010). This is not a surprising result. Even though restated numbers are more indicative of future cash flows than pre-restatement numbers (Badertscher et al., 2012), the increased risk loading has impact (Strobl, 2013).

Finally, as noted earlier in this paper, contagion effects on other firms in the same industry appear to be due to expected changes in those competitors' cash flow and earnings when they have similar attributes to the restating firm, not a differential in their cost of capital (Xu et al., 2006). This is also a reasonable result, as the cash flow expectations for an industry are affected by the restatement, but only the restating firm's information quality is affected.

PREDICTION TOOLS

There is a multitude of literature on various ways and means for predicting restatements, including many variables discussed earlier in this paper. Non-financial as well as financial measures can be used to predict fraudulent reporting (Brazel et al., 2009), and there is no single best measure to assess earnings quality in every situation (Dechow et al., 2010). In fact, many other inputs besides accounting information can transmit information about a firm in a more timely manner (Ball & Brown, 1968). For example, chief executive officers and management are more likely to exercise company stock options and sell company stock in periods of overstated earnings that are subsequently restated (Efendi et al., 2007; Beneish, 1999; Agrawal &

Cooper, 2014). Another predictor of malfeasance and agency issues is whistle-blowing (Bowen et al., 2010), also mentioned earlier.

Unexplained audit fees have been documented to correlate positively with the predictive value of other empirical accounting quality measures as well (Hribar, Kravet, & Wilson, 2010). This seems to be due to unexplained audit fees reflecting auditors' unexpected private information about firms' accounting systems; a predictive value of Securities and Exchange Commission comment letters has also been documented (Hribar et al., 2010). Higher than normal non-audit fees of auditors are not related to misstatements, however (Raghunandan, Read, & Whisenant, 2003). So, unexplained audit fees has predictive value but performance of ancillary services by the auditor cannot be connected to restatements (Raghunandan et al., 2003).

Interestingly, short sellers seem to have a keen ability to identify questionable reporting, and they accumulate positions in companies' stocks several months prior to a restatement (Desai et al, 2006), with the level of short interest showing a significant difference 19 months prior to a restatement announcement, and that difference increasing significantly in the final six months prior (Efendi, et al., 2005). One study showed mean short interest 18 months prior to a restatement at 2.18%, rising to 2.74% one month prior, and then falling again to 2.07% twelve months subsequent – with no change in short interest of the control firms (Desai et al., 2006). The study further documented that firms with higher than normal short positions taken will experience substandard subsequent performance and are more likely to be delisted (Desai et al., 2006).

Other prediction efforts attempt to classify and group certain explanatory variables to improve their predictive value. Delineations include financial statement variables such as accrual quality, off-balance sheet variables such as the level of operating leases and abnormal employee reductions, market-related variables including book-to-market and price-earnings ratios, need for new financing, and investor responsiveness (Dechow et al., 2007; Dechow et al., 2010). However, more complexity in prediction tools doesn't necessarily make them better; simpler tools developed commercially typically outperform those of academia – the richer datasets available to academia increased noise in the prediction models without improving their performance (Price, Sharp, & Wood, 2011).

The prediction metric used most by researchers to examine quality of earnings is accruals (Dechow et al., 2007). This is not surprising, since accruals, and discretionary accruals in particular, are the most opaque means by which earnings can be inflated or expenses reduced through managerial judgment. Not coincidentally, during years of high accruals, chief executive officers and other insiders have been observed selling large amounts of their company's options and stock (Bergstresser & Philippon, 2006). Some say accruals are noisy proxies for financial reporting (Bernard & Skinner, 1996; Guay, Kothari, & Watts, 1996; McNichols, 2002), and others argue that models should move away from solely discretionary accruals to the composite prediction models that include both discretionary accruals and selected financial ratios (Bayley & Taylor, 2007).

Other prediction tactics look to corporate governance – the set of mechanisms that influences managerial decision-making (Larcker, Richardson, & Tuna, 2007). For example, as mentioned earlier, Directors' and Officers' Insurance underwriters look to a company's deep governance, culture, and character in addition to performing financial analysis when assessing overall risk (Baker & Griffith, 2007). However, it is difficult to construct governance measurement tools with high degrees of validity and reliability, and so these predictors have yielded mixed results and findings (Larker et al, 2007).

A cluster of companies is emerging and gaining notoriety among the short-sellers focusing on restatements. These small research and investment firms focus solely on unearthing companies with suspicious-looking financial metrics (Got 'em, 2014). One example, Gotham City Research, takes its short positions and then publicizes its findings; among its tactics is searching for the ratios that are more difficult to manipulate (Got 'em, 2014). Although there are instances in which short-sellers spread false alarms for their own profit, they nevertheless seemingly detect more malfeasance than auditors, regulators, and bankers combined (Got 'em, 2014).

SUMMARY AND CONCLUSION

This paper summarizes the present state of U.S. public company financial restatements, their causes, effects, and various ancillary issues such as stock price effect. The current literature indicates that the number of company restatements generally increased in recent decades but has begun to drop in recent years, and that managerial intervention into financial data and results is the root cause in the majority of cases. The majority of studies looking into executive compensation reveal that incentive compensation of top company management is linked to restatements, and that incentive compensation increased concurrently with the increased advent of restatements but that it, too, has begun to decrease recently. The consensus is that when company executives possess in-the-money stock options of the firm they manage, there is greater likelihood that they will manage earnings to improve their financial reward from those stock options, but increased oversight has ameliorated that behavior.

According to the majority of the literature, the prevailing method for managing earnings is through core, day-to-day company accounts – particularly through artificially inflating company revenues. Further, a considerable amount of regulatory oversight has been instituted by entities such as the Securities and Exchange Commission, the U.S. General Accounting Office, and others, in an effort to curtail these corporate financial misdeeds. Some firms are more inclined to engage in earnings management, usually as part of an effort to maintain the appearance of positive company performance as well as stock prices.

Restatements by one firm can have financial impacts on others in its industry, financial “contagion”, primarily because the restatement of one company affects the perception of its peers’ cash flow expectations; this is most pronounced with peers whose attributes are most similar to that of the restating company. The effects on the restating company, however, flow from cost of capital impacts due to increased asymmetry as well as decreased cash flow expectations.

The literature also indicates that attempts to predict restatements have resulted in a variety of methodologies, some working with financial metrics such as the level of discretionary accruals, some with non-financial metrics such as various attributes of corporate governance. No prediction tool fits every circumstance and reliability of those tools is uneven. Short sellers appear to have a reasonable degree of success predicting restatements, however.

In conclusion, these results are synthesized as indicated in Figure 1 (Appendix), which broadly conforms to the above discussion. In summary, environmental factors such as incentive compensation, firm characteristics, and auditor attributes can create a fertile ground for restatements to occur. Observed restatements then have a variety of attributes and direct causes and effects such as regulation and litigation. Finally, once revealed, a company’s restatements impact certain of its competitors, equity markets, and have given rise to a plethora of

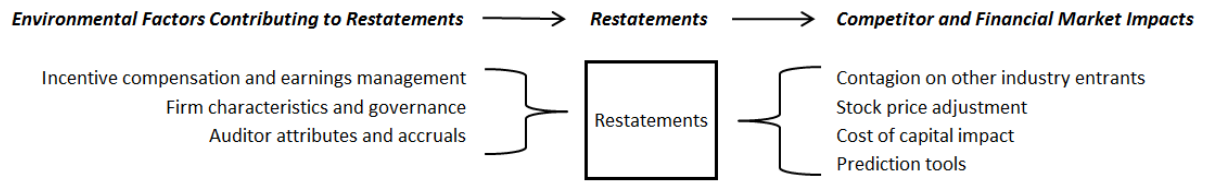
methodologies for predicting them, and even a budding industry of analysts attempting to profit by doing so.

Although the broad topic of restatements and executive compensation has been widely covered in the 100 articles covered in this review, there are still wide areas for new empirical research. Questions that remain uncovered include event studies regarding differential impacts of different types of restatements on securities prices, researching the possible impact of restatements on credit and equity risk (for example, by relating the observed market Beta for each asset to its frequency of restatement), and relating restatements to profitability growth (could it be that quickly changing markets are less predictable and hence numerous restatements indicate future growth opportunities). Finally, a possible path for future research could be a more detailed analysis of short interest and bid/ask data to delineate whether there is different trading behavior between companies that have restated their data and those who have not.

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APPENDIX

Figure 1



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