

The financial close process: Implications for future research

ABSTRACT

This study advances our understanding of the current financial close process. Attention to the topic is warranted for four reasons. First, the recent economic volatility and increase in the number of restatements has increased pressure on companies to report performance timely, completely, and accurately to market participants. Second, regulations such as Sarbanes-Oxley, fair value accounting standards, and the SEC's XBRL mandate have increased the workload for accountants at period end thus negatively impacting the efficiency of the close process. Third, several recent SEC filings have contained significant control weaknesses related to the financial close process. Finally, academic research suggests that the time needed to complete the financial close process may serve as a proxy for a firm's internal information environment quality. We draw upon prior research in accounting, psychology, regulation, and information systems and a field investigation to examine the role of four factors - need to meet expectations, collaboration between multiple participants, estimation process, and ability to incorporate new regulations - in the current the financial close process. Further, we will develop recommendations for companies and suggest several directions for future research.

Key Words: financial close process, performance reporting, estimation process

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1. Introduction

“The economic volatility of the past few years has left businesses hungering for more timely and uniform financial information to help them react quickly to fast-changing conditions.” Emily Chasan, *Wall Street Journal*, 2012

“Finance organizations need to proactively manage the challenges of data quality and prepare for the upcoming regulatory requirements to avoid creating a perfect storm for their financial close and consolidation processes.” Raj Chhabra, Deloitte Consulting Director, 2010

The financial close process, i.e. the routine process of completing the accounting cycle and preparing internal and external reports, has recently received increased attention from business executives, regulators, and academic researchers (Chasan, 2012; O’Leary, 2012). The increased attention reflects recognition that the financial close process can impact the effectiveness and efficiency of the performance reporting process. Further, the financial close process involves a trade-off between information quality and timeliness. However, some researchers and practitioners may question whether emphasis on a routine accounting process is justified (Busco et al., 2007; van der Steen, 2011). Our goal is to enhance understanding of the current financial close process, provide practical recommendations to companies that may ultimately improve the effectiveness and efficiency of the performance reporting process, and develop recommendations for future research in this important area.

Attention to the financial close process is warranted for four reasons. First, the economic collapse in late 2008 and subsequent volatile economy increased emphasize on providing accurate performance measures in a timely manner to the marketplace and thus reduce the trend of increasing restatements by publicly-traded companies (PricewaterhouseCoopers, 2007; Badertscher and Burks, 2011; Burks, 2011; Files et al., 2013). Further, senior management is now requesting more analysis during the financial close process to timely identify emerging

external and internal risk thus providing the ability to better react to economic downswings without restricting the ability to profit from upswings. Second, the efficiency of the financial close process may be negatively impacted as accountants' period end workload expands to include meeting several new regulations requirements (e.g., reducing the report lag between period end and issuance of financial reports (SEC, 2002; SEC, 2005), changes in materiality thresholds (Chhabra, 2010), new disclosure requirements such as XBRL (SEC, 2009), new fair value accounting standards (FASB, 2007), and potentially IFRS (Clark, 2010)). Third, audit guidelines identify the financial close process as a high risk area since it is a source of internal controls weaknesses disclosed in recent SEC filings (Approva, 2006; Doyle et al., 2007; PCAOB, 2007, 2010; Klamm et al., 2012). Finally, some academic researchers use the speed of the financial close process as a proxy for the quality of a firm's internal information environment (Jennings et al., 2012; Gallemore and Labro, 2013).

Company accounting systems often vary by firm size. Further, large companies are more likely to have adopted at least one ERP system over the past two decades (Brazel and Dang, 2008; Ugrin, 2009). However, regardless of firm size or accounting system used, all companies are impacted by the financial close process. Interestingly, despite its importance to financial reporting, accounting practitioners and scholars have made little progress understanding the current financial close process and how technology specific to the financial close process may improve this process. In this study, we engage prior research in financial accounting, psychology, regulation, and information systems and conduct a field investigation with corporate financial officers to provide a systematic examination of the role of four factors – need meet management expectations, collaboration between multiple participants, estimation process, and

ability to incorporate new regulations - in understanding the current financial close process and how it can be improved.

In the next section, we define the financial close process and discuss the various factors effecting how it may be improved. Based on this discussion and our field investigation, we offer four major recommendations. First, we recommend that researchers examine further how the need to meet (or beat) expectations impacts management's actions and the effectiveness and efficiency of the financial close process. Second, we caution that technology advances may or may not resolve the challenge of ensuring all hidden information is revealed in a timely manner during the financial close process. Third, we acknowledge the difficulties of preparing adequate estimations during the time-pressured financial close process and suggest that an ex post estimate analysis (i.e. Lundholm, 1999) may improve not only estimate quality but also the effectiveness and efficiency of the financial close process. Fourth, we examine how rapidly changing regulations impact the financial close process and how technology advances may assist management in meeting new regulation requirements in a timely manner. We discuss these recommendations in detail and conclude with a discussion of suggestions for future research.

2. Financial close process

The *financial close* process describes a company's ability to complete its accounting cycles and produce financial statements for internal management and external legal reporting working under time (and potential resource) pressures. While this research concentrates on preparing financial reports, many companies today also prepare non-financial reports such as timely sustainability and corporate responsibility that may have some elements of traditional financial close process.¹ Financial close is a recurring process with known input sources and pre-

¹ We acknowledge that sustainability and corporate responsibility reporting may not have the tight period end deadlines companies deal with when preparing required legal financial reports such as SEC filings. Further, some

defined outputs. While most recurring processes have deployed technology to achieve efficiency, quality, repeatability, and capture of performance metrics, many companies today still rely on a highly manual work process to perform the necessary financial close tasks (Clark, 2010; Zubizarreta 2013). The process can be very time consuming especially in ‘pencil down’ situations where one department must wait for another department before completing their duties (Adams, 2002).

Accountants often distinguish between three types of financial close processes. First, the *hard close* process focuses on accuracy and results in GAAP/SEC financial statements at quarter or fiscal year end. Second, in contrast, the *soft close* process occurs on interim months between quarter-end and produces financial data to be used for internal management reporting. Third, some executives periodically demand a *virtual close* that reflects on-demand availability of vital management reporting (Morrow, 2008; O’Leary, 2012). Further, some executives require their accounting staff to estimate consolidated income statement numbers before the fiscal period end. This process is known as an *early close* or *forecast*.

2.1. Characteristics of a quality financial close process

By definition, a company’s internal information environment, including the financial close process, is private to the company and its quality is not publically observable (Gallemore and Labro, 2013). However, the output of the financial close process, the final financial statements and supporting material, is publically observable. Users often evaluate financial statement quality based on timeliness, reliability, accuracy, and quantity (Gallemore and Labro, 2013). These characteristics, particularly timeliness and accuracy, may involve a tradeoff

companies, particularly financial services and investment management, may have different systems, processes and even deadlines for internal management rather than external reporting.

between producing the most accurate financial information and providing timely information (Ballou and Pazer, 1995; Gigler et al., 2012).

2.2. Steps in the financial close process

In general, the financial closing process is not dependent upon a particular accounting information system. For example, many large companies may use ERP systems to record and process routine transactions while smaller, more specialized companies may use industry-specific systems to complete the same processes. For all companies, the financial close process (as illustrated in the lower half of Figure 1) starts after routine transactions are entered and processed at the period end.² First, the company aggregates financial amounts and prepares preliminary results. Often, this involves initially downloading general ledger data into a spreadsheet(s) and exporting aggregate totals from the spreadsheet(s) into a word processing document. Management reviews the preliminary results and may offer recommendations for final adjustments. Next, the numbers are finalized and reports prepared. The reports are forwarded to interested parties. At this time, external auditors review the reports for publically traded companies.

<< Insert Figure 1 Financial close process >>

2.3. Financial close process internal controls

Internal controls are an important part of the financial close process (Kogan et al., 1999; Hunton et al., 2004) and a critical component of internal controls over financial reporting as defined by PCAOB Auditing Standard No. 5 (see paragraphs 24 to 27). However, several recent SEC filings document many internal control weaknesses that can be attributed to the financial close process ((Approva, 2006; Doyle et al., 2007; Klamm et al., 2012). Management is

² Note, during the early close process, only the transactions incurred-to-date have been recorded in the general ledger.

ultimately responsible for internal controls over the financial close process. During the financial close process (see upper half of Figure 1), management, often assisted by internal auditors, evaluate and test controls.³ If problems are detected, they will attempt to remediate the control concerns. Each quarter, management of publicly-traded companies must aggregate and analyze internal control review results and then disclose this information to appropriate parties. Further, Sarbanes-Oxley now requires CEO and CFO to sign off quarterly that the financial statements were prepared with adequate internal controls and external auditors to issue an audit opinion on these results (SOX, 2002; PCAOB, 2004).

Internal controls over the financial close process may vary between companies but generally include the five components suggested by the recently updated COSO framework (COSO 2013): control environment, control activities, risk assessment, information and communication, and monitoring. For example, the control environment including tone at the top, management responsibility and accountability are important to the financial close process. Some companies carefully document their financial close process while others conduct risk assessment of their financial close processes. Companies may design internal controls to improve process scheduling and communication between all parties involved. Further, companies may develop procedures to ensure that management has the time and knowledge needed to review the key results. Others may monitor the financial close process through benchmarking. Common benchmarks (see Figure 2) are often categorized into three groups: costs, quality, and timeliness. Under the cost category, benchmarks used include the cost of non-compliance / control failure, FTEs used for the close process, finance as a percent of revenue, and audit fees as a percent of revenue. Within the quality category, company benchmarks include the number of control

³ Note, given time constraints within the financial close process, management may elect to evaluate and test these internal controls either before or after the financial close process is complete.

remediations, auditor adjustments, and post-close adjustments. When monitoring timeliness, companies generally track the number of days to close and/or the percentage of financial statements prepared late as benchmarks.

<< Insert Figure 2 Benchmarks and key performance indicators of financial close process here >>

2.4. Tradeoff between financial close process quality and timeliness

The financial close process requires management to weigh the need to produce quality company performance reports vs. providing this information in a timely manner. For example, if a company reduces its monthly close process by just two days, it increases the resources available to other high-priority projects by 24 days per year. However, reducing the time taken in the financial close process may also reduce the quality of the process and its output. Prior information systems research has examined this tradeoff between information quality and timeliness (Ballou and Pazer, 1995; Chengalur-Smith et al., 1999; Fisher et al., 2003). Ballou and Pazer (1995) develop a framework for studying the quality and timeliness tradeoff while Fisher et al. (2003) find that data quality increases as participants' experience levels progress from novice to professional. Overall, this research provides evidence supporting the intuition that the financial close process is more effective when experienced staff and management participate.

3. Factors affecting the financial close process

Our underlying premise is that the problems with financial close process will continue to impact corporate performance reporting effectiveness and efficiency unless companies make concentrated efforts to improve this critical process. To make changes, companies must first understand the factors that may impact the financial close process. Based on prior research in financial accounting, psychology, regulation, and information systems, we delineate and discuss four factors – need to meet management expectations, collaboration between multiple

participants, estimation process, and ability to incorporate new regulations - to improve our understanding of the current financial close process.⁴ To guide our discussion, we summarize the factors and selected research in Table 1.

<< Insert Table 1 Factors affecting financial close process and selected citations from financial accounting, psychology, regulation, and information systems research >>

3.1. Need to meet (or beat) expectations

Publicly-traded companies often attempt to meet or beat analyst expectations in hopes of generating a greater than expected stock price increase (Choi et al., 2010; de Jong et al., 2012). The pressure to meet or beat analyst expectations may result in pressure from senior management when the bottom line number generated by the financial close process is not the expected number. Further, senior management may apply pressure to earlier financial close steps if they perceive that the current process will not generate the bottom line number they expect. The need to meet (or beat) expectations is important to the financial close process since it may impact the financial close process in one of two ways. First, management may rush through the financial close process and accept unique allowances to meet forecast. In contrast, management may delay the financial close process by manipulating accruals and / or estimates to ‘manage’ earnings and meet expectations.

Analysts may predict earnings prior to their actual announcement to allow clients to benefit from buying or selling before the market reacts to earnings news. Even some private companies may have financial targets to prevent lenders from calling critical loans or significantly increasing interest rates on these loans. Lenders may form earnings expectations before period end to monitor their portfolio risk and cash flow needs. Both analysts and lenders

⁴ We considered discussing two additional factors: complexity and size of company and extent of procedure documentation. However, we were unable to find interesting insights on how these factors may improve the financial close process during our search of prior financial accounting, psychology, regulation, and information systems research.

generally form their early expectations about earnings direction and quality through company analysis, external environment changes, discussions with company senior management, and through use of proprietary analytical models (Beaver et al., 1979; Kim and Verrecchia, 1991, 1997; Barron et al., 1998).

Company management often believe that higher variability in expectations will result in a greater market reaction to the earnings announcements for public companies and lower interest rates for private companies – positive or negative. This implies that a company will benefit from quickly confirming (or denying) analysts’ and lenders’ expectations, as a quick response generated by an effective and efficient financial close process will reduce variability (and by implication, uncertainty). In contrast, providing a quick response may cause managers to become overly focused on short-term goals (i.e., the short-termism hypothesis) that are not in the best interests of the company (Gigler et al., 2012).

Interestingly, earnings research suggests that analysts’ expectations can be poor indicators of expected results because of lack of publicly-available information, errors in analysts’ model specifications, and/or differences in estimation among analysts. (Abarbanell et al., 1995). Further, expectation concerns are not limited to year-end earnings as recent research finds that quarterly announcements may significantly influence stock prices (Lobo and Tung, 2000). Finally, research suggests that new online investors add volatility to a company’s stock price following earnings announcements (Ahmed et al., 2003). Thus, management’s need to meet or exceed analysts’ (and/or lenders’) expectations may be a driving consideration as companies consider improvements to their financial close process.

3.2. Collaboration Between Multiple Participants

Collaboration between multiple participants is examined since the financial close process involves collaboration between many individuals including general ledger accountants, division and product accountants, the controller, the CFO, the CEO, and external auditors performing tasks in a predefined order. Even today, the financial close process often is viewed as a stop-and-wait process where participants need to wait until the prior task is complete before starting their task. However, several recent technology advances suggest that the days of a stop-and-wait financial close process may be numbered. For example, new financial close technologies often include scheduling and job tracking technology. Further, some packages provide concurrent update controls so that updates from multiple participants are properly tracked.

Collaboration is an issue since the financial close process may be viewed as a hidden-profile task. A hidden-profile occurs when team members individually possess only part of the information required to reach an optimal decision and the team must collectively pool this information to make the optimal decision (Stasser, 1992). In the financial close process, hidden-profile type tasks can arise as different team members possess relevant information (e.g. revenue and expense numbers for individual divisions, detailed balance sheet information vs. detailed income statement numbers), which needs to be integrated for the team to reach an optimal decision or product. In the financial close process, the optimal product is a set of financial statements that adequately reflects the underlying economic activity of the company. Three information-related steps are involved in solving hidden-profile tasks (Kerr and Murthy 2009). First, each participant must share uniquely held information with the other participants. Second, participants must process the information exchanged and recognize what information is uniquely held. Hidden information generally evokes additional information exchange thus the exchange

becomes an iterative process. Once all information has been exchanged, participants can complete the last step – solve the problem.

The emphasis on collaboration is a pertinent remedy for common risks associated with hidden profile tasks, such as when individuals work in teams on a financial close where not all members have access to the same information. The literature reports that individuals involved with hidden profile tasks often fail to consider all necessary, “private” data and thus often reach a suboptimal decision, defined here as an error and/or omission from the financial statements (Dennis, 1996; Lightle et al., 2009). To assist with hidden-profile task issues, many financial close technologies include computer-mediated communication tools such as bulletin boards and chat tools. Murthy and Kerr (2004) research’s uses task-technology fit theory (Zigurs and Buckland, 1998) to hypothesize and find that teams using a bulletin-board tool outperformed teams using a chat tool or communicating face-to-face in an audit related hidden-profile task. Unlike the financial close process, participants were not under any time constraints. A follow-up study (Kerr and Murthy, 2009) asking participants to complete a similar audit related hidden-profile task under time constraints found that teams communicating face-to-face rather than those using computer-mediated communication tools were more likely to solve the hidden-profile task. The authors suggest that face-to-face communications is preferred when operating under a time constraint due to the relative immediacy of feedback and multiplicity of cues available.

Further, to be effective, users must accept and use the new financial close technology containing collaboration features. While one might assume that requiring all financial close participants to use a new financial close technology would be easy, information systems research indicates that merely making a new technology available is not sufficient; users must accept and use the technology (Davis, 1989; Davis et al., 1989; Venkatesh et al., 2003). Research indicates

that users are more likely to accept, and therefore use, new technology when it is perceived to be useful (Davis, 1989). While useful is in the eye of the beholder, factors leading to perceptions of usefulness include relevance of the technology to the task, ease of use, quality of output generated, and demonstrated success using the technology (Legris et al., 2003). Thus, as company management considers adopting new collaboration technology to address financial close process challenges, they need to be aware of training and user education issues (Beaman and Richardson, 2007). Specifically, training personnel to use new technology should focus on components that are salient to the users. In other words, “one size” does not fit all.

Finally, psychology research suggests that role ambiguity may impact participants’ willingness to collaborate. Role ambiguity refers to uncertainty by employees about key requirements of their jobs. While failure to document financial close procedures may be one cause of role ambiguity (IOMA, 2010), practitioner research indicates that even with documentation, participants may question their role and how it may change frequently due to staffing issues and/or new regulation requirements. Prior psychology and auditing research indicates that higher role ambiguity is associated with lower quality exchanges between management and subordinates (Major et al., 1995) which creates uncertainty regarding the degree of management authority, duties, relations with others, sanctions, and rewards for their behaviors (Bamber et al., 1989). Providing adequate supervision and feedback during the financial close process may reduce role ambiguity.

3.3. Estimation Process

As noted earlier, an important goal of the financial close process is to produce accurate financial statements in a timely manner. One process that often slows this process down is the preparation of accounting estimates. Accounting estimates are financial statement items based on

the outcome of future events (AICPA, 1988). These estimates often require management to make difficult judgments about the magnitude and likelihood of future events (Grenier et al., 2012; Bratten et al., 2013). Several key financial close activities involve estimations including the allowance for bad debts, warranty expense, and fair value estimates made for marketable securities and derivatives (FASB, 2007; Cohen et al., 2011). Many estimates are critical to the portrayal of the company's financial position, as even small changes in management's judgments can trigger a material misstatement (Peecher et al., 2011; Christensen et al., 2012).

Management (and external auditors) are often concerned about the quality of accounting estimates, particularly those prepared during the stressful financial close process. Estimates that are more accurate are generally thought to be of a higher quality and thus more useful in predicting the following year's earnings (Lev et al., 2010). Lev et al. (2010) provides some evidence that quality of estimates can be linked to the predictability of earnings. However, even accurate accounting estimates are not necessarily good predictors of future cash flows.

To address accounting estimate quality, Lundholm (1999) proposed that companies analyze their estimates ex post to determine if the original estimates were accurate. Recent experimental research suggests that investors find ex post estimate analysis informative (Hirst et al., 2003; Koonce et al., 2010; Bell and Griffin, 2012).

3.4. Ability to incorporate new regulations

The efficiency and effectiveness of the financial close process may be periodically challenged by the need to incorporate new regulations. Recent regulations that have impacted the financial close process include Sarbanes Oxley, SEC's XBRL mandate (SEC, 2009), fair value accounting standards (FASB, 2007), and the Dodd-Frank Act (2010). Regulation and public policy research discusses and debates the impact of regulations at both the society and individual company level. Sunder (2010) argues that many new regulations balance the need for

standardization with the need for professional judgment. The SEC's XBRL mandate is an example of this tradeoff. For example, the FASB in conjunction with XBRL.US has developed standard XBRL reporting taxonomies for US companies (Debreceeny et al., 2010). However, some companies argue that attempting to fit their unique financial statement items into a pre-determined standard taxonomy reduces their stakeholders' ability to apply professional judgment when evaluating their company performance (Chasan, 2013).

Further, additional regulations may add significantly to management's already complex workload in a short period of time (Filbeck et al., 2011). For example, companies are currently examining how additional reporting requirements due to the Dodd-Frank Act may impact their financial close process workload.⁵ Both practitioners (Barrett, 2003; Clark, 2010) and prior research (O'Leary, 2011; Williams, 2012) suggest that technology advances may assist management in addressing changes in regulations and ultimately improve the timeliness and quality of the financial close process. Some technology solutions involve outsourcing all or part of the process to a financial printer. Other solutions require companies to purchase financial close technology for internal use. Prior outsource / in-house research provides mixed direction on how outsource vs. in-house may impact processes (Desai et al., 2011; Lacity et al., 2011). In general, research indicates that while outsourcing may be less expensive, particularly in the short run, in-house processing increases organizational knowledge (Lacity et al., 2011; Gray and Yoon, 2012; Janvrin and No, 2012).

⁵ We note that the Dodd-Frank Act imposes governance regulations on all publicly-traded companies, not just financial institutions. These regulations include increased disclosures for proxy filers, mandated resolution publication in proxy statements by minority shareholders and new stock exchange listing requirements (Morrison and Forester, 2010).

4. Field investigation

To evaluate whether our findings regarding factors that impact the financial close process are appropriate, we conducted a field investigation by interviewing eleven financial officers responsible for the financial close process. We chose companies from diverse industries including manufacturing, utilities, and financial services. Participant titles varied from directors of financial analysis to corporate controllers. All participants had at least five years of accounting experience and several had been with their current employer for over 20 years. Seventy-five percent of the participants were male. Each interview lasted between 30 and 45 minutes.

Similar to several other accounting studies (e.g., Hirst and Koonce, 1996; Cohen et al., 2002; Beasley et al., 2009; Trompeter and Wright, 2010; Hermanson et al., 2012; Griffith et al., 2013) that followed methods advocated by Cooper and Morgan (2008) and Yin (2008), we employ a qualitative research approach to verify our findings for two reasons. First, given the recent emphasis on the financial close process, interviews allow us to explore *actual* perceptions of the financial close process from participants. Second, since our research is exploratory in nature, interviews provide rich and detailed descriptions of how people experience a given research issue (Creswell, 2012).

An interview guide (see Exhibit A) was developed based on our analysis described above. A colleague reviewed the interview guide for completeness and clarity. After our first interview, we reevaluated our guide and revised it to address topics that surfaced during the initial interview.

The interview guide consisted of a series of open-ended questions organized into four sections. Questions in the initial section obtained general information about the financial close process. Questions in the second section examined how the factors discussed above impacted the financial close process. Questions in the third section explored how companies monitor their

financial close process. The final set of questions explored other factors that may impact the financial close process.

Our interviews followed a semi-structured format. When the interviewee's response took us down an important path, we pursued that path by asking additional questions to better understand the issue before returning to the planned interview materials. In addition, not all questions were asked to every interviewee because some questions were not relevant.

We started each interview with non-threatening questions (e.g., job title and responsibility) to make respondents feel comfortable. We then explained the main purpose of the research, followed by a brief background of our prior work with the financial close process. The respondents were assured that their identity and responses would be held in strict confidence and that they could withdraw their responses at anytime. Based on the detailed process examples offered and the wide variance in opinion expressed regarding the financial close process, the respondents to date appeared to be fairly candid and honestly described their perceptions of the financial close process.

During each interview, the authors took detailed notes. Following the interviews, each author transcribed his/her notes and the notes were summarized for analysis. The summary was reviewed and modified based on feedback from the authors to ensure that the analysis of the paper was not based on errors made in the summarization process; and, thus, faithfully represents our interviewees' responses with respect to their financial close process.

5. Summary of field investigation

We summarize our field investigations results first identifying risks and obstacles to the financial close process and internal controls used. Next, we discuss key internal controls discussed by our participants. Finally we provide examples of how our participants believe each factor identified from prior research impacts the current financial close process.

5.1. Financial close process risks

Respondents identified four risks to the financial close process. Three respondents noted their financial close processes were highly dependent upon multiple general ledger and financial close systems that were often patched together rather than carefully integrated. The risk that at least one system would go down and delay the close process was high with at least one respondent indicating system available problems had occurred in the last close cycle. Further, three respondents indicated that their greatest risk was obtaining accurate and timely information from subsidiaries. Completing the financial close in a timely manner was also high on three respondents' risk concerns. Finally, three respondents⁶ reported that their biggest risks were material misstatements in their financial statements.

5.2. Obstacles to a successful financial close process

The inability to communicate and coordinate the financial close process due to the high number of people and departments involved was the most common obstacle to a successful financial close process. Further, the number of tasks to be completed was also an obstacle. One large Fortune 500 company indicated that they completed nearly 6,000 tasks during the financial close process. Three respondents stated that the lack of US GAAP knowledge among their foreign divisions was a major obstacle. Finally, one respondent discussed how pressure to meet the close deadline without adequate staffing was an obstacle to a successful financial close process.

5.3. Internal controls

Participants described key internal controls which covered each COSO component. For example, four participants indicated that involvement by top executives was critical to the success of their financial close process. Control activities identified include tracking timeliness

⁶ Note, some respondents identified more than one risk.

and accuracy of information submitted by subsidiaries, maintain and updating a detailed checklist, publishing and tracking progress on a detailed financial close task calendar, SOX signature review, analytical procedures, segregation of duties via system access, and performing analytical procedures. Risk assessment was also an important control for several respondents.

One executive noted,

“Our biggest risk obstacle is coordinating multiple systems. We assess the risks involved with these systems annually and are working to (1) reduce the number of multiple systems involved in the close process, and (2) monitor the systems outputs more closely.”

Participants described information and communication as an internal control that some felt needed more attention. While detailed checklists were often used and procedures were documented, some expressed concern that not all participants were following these checklists and procedures. A controller articulated this concern as follows,

“We currently maintain our checklists in a spreadsheet but are now investigating the new financial close software programs with hopes that such technology will improve our processes. Of course, even if we acquire new software, we need to make sure all key participants are willing to learn the new software and benefit from the improved communications.”

Finally participants reported implementing several key monitoring controls including detailed sign-off procedures involving several layers of management to meet SOX requirements, reviewing and approving all major period-end general entries, timely reviewing of reconciliations, and comparing close numbers to latest forecast numbers.

5.4. Impact of need to meet management expectations

We noted that most respondents noted two different types of management expectations, one related to the timeliness of the report delivery and the second related to how close the actual bottom line met the most recent forecast. While all managers interviewed indicated that the need to deliver a timely close was critical, the need to meet forecast bottom line was more apparent

with firms who updated their forecasts more often. Further, two respondents suggested that the need to meet management forecast expectations varied with the company culture. As one controller noted,

“I have worked in two different companies. Each company had its unique culture. At one company, meeting the forecast number was critical. At the second company (in the same industry), management is only concerned with providing a timely report and rarely compares actual numbers to the latest forecast numbers.”

5.5. Impact of need to collaborate between participants

The need to collaborate between participants was the one factor that all respondents noted as critical for a success financial close. The method used to collaborate between participants varied significantly from distributing and monitor excel-based checklists to pre-scheduled daily meetings among senior managers and accounting leadership to incorporating collaboration software into their financial close process. The majority of participants expressed concern that their biggest risk was omission of key data by one or more members of the financial close team. One respondent noted,

“Communication is very important especially since we have more than 150 accountants collaborating world-wide each month to produce our final financial reports.”

While few respondents were aware of hidden-profile task theory, several expressed interest in learning if and how this theory may improve the financial close process. The six respondents who were currently using financial close software with at least some collaboration capabilities indicated that while the software did not completely solve the problem of making sure all data is shared in a timely manner, it was a big improvement over the older methods of preparing and tracking the financial close process with spreadsheets and word documents.

5.6. Impact of estimation challenges

The impact of estimation challenges was generally dependent upon the number and significance of estimates in the financial statements. Eight respondents indicated that estimates were major components of their financial statements. Four of these respondents relied on SOX reviews conducted periodically throughout the month to ensure the estimates were acceptable. Two other participants compared each estimate to the prior period estimate and investigated large differences when they existed. One respondent indicated that while the estimates were significant, they were routine and did not vary significantly between periods. Finally, one respondent admitted that the estimation process relied on multiple large spreadsheets and significant manual processing and was a ‘significant wildcard at present’.

Of the remaining respondents, two indicated that estimates only played a moderate role in their financial statements and one reported that his/her company’s financial statements did not contain any material estimates. None of the participants interviewed reported they compared their estimates ex post to actual values as suggested by Lundholm (1999) although some respondents indicated that such a comparison would be a useful internal control.

5.7. Impact of need to meet regulation changes

We specifically asked about how four different regulation changes impacted the financial close process: fair value accounting standards, SEC XBRL mandate, Sarbanes-Oxley (SOX), and standardization. The need to meet regulation changes varied significantly among respondents and regulations.

Given fair value accounting is industry dependent, only three respondents indicated that fair value accounting standards impacted their financial close process. These respondents reported that fair value accounting adjustments were easier as time passed and generally now they compare the current adjustments to prior adjustments for reasonableness each period end.

All respondents impacted by the SEC XBRL mandated reported that tagging the financial statements was now routine and no longer caused any delays to the financial close process.⁷

Similarly, SOX has been in effect since 2005 and its impact is low at this time. One controller noted,

“Due to SOX, we investigate if there are controls problems that we can fix anytime we have a last minute adjustment to the financial statements. Further, all levels of management must sign off on internal controls on the second day following close.”

Finally, the impact of standardization varied. Four respondents in regulated industries indicated that standardization impacted the financial close process. The other respondents, generally in less regulated industries did not view standardization as a factor in the financial close process.

6. Recommendations and directions for future research

This paper systematically examines prior research in financial accounting, psychology, regulation, and information systems related to the financial close process and reports on the results of a field investigation involving high-level financial officers to increase our understanding of the financial close process. We provide the following observations and related recommendations based on this examination.

6.1. Implications for accountants

Various circumstances involving people, processes, and technology may suggest that a company needs to improve its financial close process (Barrett, 2003; Morrow, 2008). For example, people issues include paying excessive overtime to employees during the financial close process and/or experiencing undetected errors caused by fatigue. The financial close process may be a labor-intensive manual process involving many journal entries that is constantly pushing or missing deadlines. Subsidiaries may be submitting inconsistent reports that

⁷ Several respondents noted that they questioned whether investors were using the XBRL tags.

need further investigation. The accounting staff may spend too much time manipulating data and not enough time analyzing the generated reports (Morrow, 2008). To address people issues, process improvement or re-engineering may be appropriate as management could identify bottlenecks during the financial close process and redistribute work as needed.

Process obstacles often involve the lack of documented policies and procedures. Further, the degree of accounting centralization may impact the financial close process as participants from highly decentralized accounting companies often expresses concern over the quality and timeliness of subsidiary reports. When process issues are encountered, management may consider better defining the process and perhaps assigning explicit ownership to the financial close process. Further, the company could develop a plan for clean handoff from one financial close process to the next. Finally, the company could develop a well-defined workflow using financial close software.

Technology inefficiencies may involve combining totals from multiple general ledger systems into the financial close process. Further, due to the multiple general ledger systems, drilling down to detailed information is often difficult if not impossible (Morrow, 2008). In addition, several companies today still download their aggregate financial information into spreadsheets that are modified before financial statements are prepared. Several technology vendors have recently developed or modified products to improve the financial close process (CFO Research Services, 2010). These vendors advertise that their technology will reduce the close processing time by up to 50 percent and increase accuracy. Furthermore, some technologies integrate word processing and spreadsheet editing capabilities and include linking capabilities to enable ‘change once, update everywhere’. Several technologies allow multiple authors to work simultaneously in the same document without conflicts. Many technologies are

also designed to meet the recent SEC mandate requiring publicly-traded companies to furnish their financial statements with XBRL tags (SEC, 2009). We caution though that as discussed below, software alone may not resolve the hidden-profile problem often encountered in the financial close process.

6.2. Directions for future research

In addition to implications for practice, our paper suggests several directions for future research. First, while research has examined to some degree who analysts and lenders form their early earnings expectations (Beaver, 1979; Kim and Verrecchia, 1991, 1997; Barron et al., 1998), how expectations impact management's actions and the effectiveness and efficiency of the financial close process remains relatively unknown.

Second, since the financial close process involves close collaboration among multiple participants performing a hidden-profile task, we encourage researchers to consider how hidden-profile task research may assist in examining how to improve the collaboration between participants in the financial close process. Prior research suggests that groups do not necessarily process more information better/more accurately than individuals (Dennis, 1996; Lightle et al., 2009). Groups often fail to integrate new information well and share all the information required to come to an optimal solution. Sometimes individuals in group settings are reluctant (or forget) to share "private" information. Additionally, even when individuals come together to solve a common problem, combining the correct level of skill and expertise is necessary, since "two heads are not always better than one" (Hammersley, 2006).

Research suggests that structure helps address hidden profile task problems (Lightle et al., 2009). Merely allowing groups to "chew" on the same, or common, information does not improve accuracy. Senior management review of the results *before* or *after* the closing process may affect the outcome (since individual senior managers may be reluctant to share "private,"

damaging information). Additionally, collaboration technology needs to fit the task (Kerr and Murthy, 2009). For example, tasks performed under a time pressure (e.g. financial close) are better suited for more face-to-face collaboration than those performed without a time pressure. This suggests that mere adoption of technology is not adequate in optimizing collaboration and that technology that allows for “face” interaction is preferred for financial close tasks.

Third, examining estimation research generates several future research opportunities. For example, one could explore how time pressure impacts the effectiveness and efficiency of the estimation process. Further, could ex post estimate analysis improve not only period-end estimates but potentially the financial close process? Also, improvements in technology and documentation techniques may affect the accuracy of estimates.

Fourth, we noted limited research discussing how companies incorporate new regulations into their current process. Given the number and significance of several regulation changes, we encourage researches to examine this question. Further, often implementing new regulation involves the need for new technology or at minimum, significant changes to existing technology. Research examining when and how existing systems need to be modified or if new systems need to be developed to meet the needs of new regulations is appropriate.

Further, to the extent that multiple “shadow” systems exist (e.g. perhaps manual systems and end user computing systems housed on personal computers or several separate non-integrated end user computing systems), how does adoption of a “unifying” technology affect the effectiveness and efficiency of the financial close process?

Finally, while we acknowledge that auditors are often involved in the financial close process, particularly for publicly-traded companies at year end, we did not consider the impact of either continuous monitoring by management or continuous auditing by external audit firms on

the financial close process. Perhaps, future research could examine whether more timely monitoring and/or auditing may reduce the number of financial statement restatements caused by ineffective and/or inefficient financial close processes.

As with any study, we acknowledge limitations. First, each company's financial close process varies somewhat. Thus, the generalization of our results may be limited due to the characteristics of the financial close process used by the companies and individuals we interviewed. Second, we limited our interviews to discussions surrounding the financial close process for companies filing with the U.S. Securities and Exchange Commission. Reporting requirements in other countries may be different than those described here. Further, we do not examine how the extent of procedure documentation or the company size may impact the financial close process quality.

In conclusion, recent economic volatility, an increase in number of restatements, and constantly changing regulations have brought the financial close process under increased scrutiny by practitioners and regulators. Additional research in this area is important to companies individually and to the overall economic goal of providing accounting information to facilitate a free and efficient marketplace.

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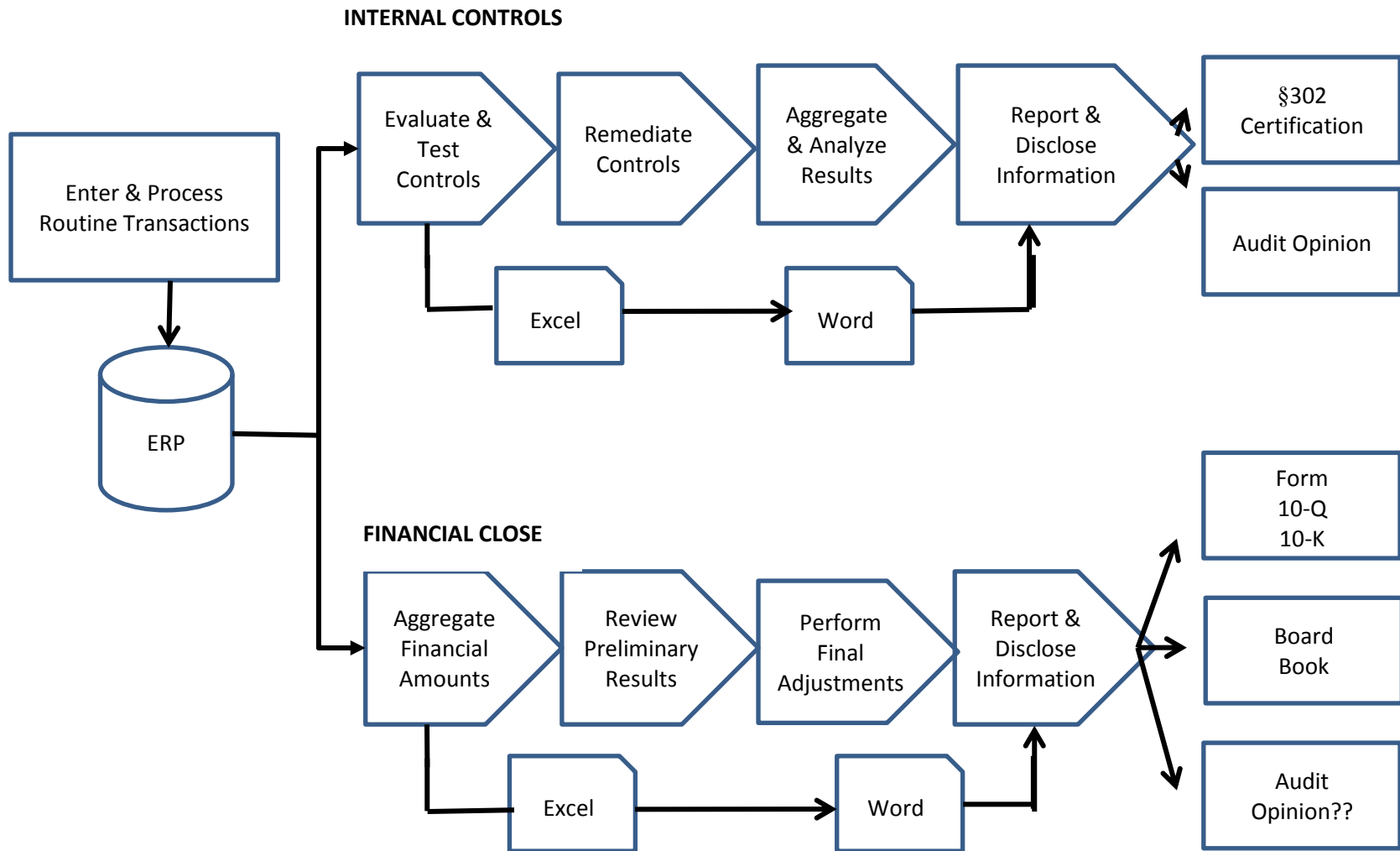
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Fig. 1 Financial close process^a



^a Source: Keller 2006

Fig. 2. Benchmarks and key performance indicators (KPIs) of financial close process^a

<u>Category</u>	<u>Benchmarks</u>	<u>KPIs</u>
Costs	Cost of non-compliance/control failure	Increase in number of non-recurring transactions
	FTEs for close	New account requests
	Finance as percent of revenue	Task re-work; supporting schedules
	Audit fees as percent of revenue	Journal entries containing errors or requiring re-adjustment
Quality	Number of control remediations	Changes in policies/procedures
	Auditor adjustments	Increase in issue escalations
	Post-close adjustments	Increase/decrease in expected results (returns, receivables, etc.)
Timeliness	Days to close	Increase in expected volumes (purchase orders, invoices, paychecks, etc)
	Percent tasks late	Post cut-off transaction postings Current days to close vs. previous days to close

^a source: Clark 2010

Table 1

Factors affecting financial close process and selected citations from financial accounting, psychology, regulation, and information system research

Factors	Summary of effects	Research citation
Need to Meet Expectations	Companies often attempt to meet or beat analyst expectations during the financial close process.	Choi et al. (2010)
	Expectation concerns are not limited to year-end earnings.	Lobo and Tung 2000; Ahmed et al. 2003
Collaboration between Multiple Participants	The financial close process may be viewed as a hidden-profile task.	Strasser 1992
	In a hidden-profile task, teams using a bulletin-board computer-mediated communication tool may outperform teams using a chat tool or communicating face-to-face. However, under time constraints, communicating face-to-face may be better.	Murthy and Kerr 2004; Kerr and Murthy 2009
	Before collaboration technology can be effective, participants need to accept the technology.	Davis 1989; Legris et al. 2003; Venkatesh et al. 2003
Estimation Process	Role ambiguity may impact participants' willingness to collaborate.	Bamber et al. 1989; Major et al. 1995; Brazel et al. 2004
	Even small changes in management's estimates can trigger a material misstatement.	Peecher et al. 2011; Christenson et al. 2012
	Estimates allow analysts to predict the future year's earnings, although they are less predictive of future cash flows.	Lev et al. 2010
Ability to Incorporate New Regulations	Investors find ex post estimate analysis informative.	Lundholm 1999; Hirst et al. 2003; Koonce et al. 2010; Bell and Griffin 2012
	Many new regulations balance the need for standardization with the need for professional judgment.	Sunder 2010
	Technology may improve the timeliness of the financial close process.	O'Leary 2012
	In-house processes may increase organizational knowledge while outsourcing options may be cheaper.	Lacity et al. 2011; Janvrin and No 2012;

Appendix A. Interview questions

Overview of process

What do you view as the biggest risks with the financial close process?

What are your biggest obstacles to a successful financial close process?

Types of financial close processes

- a. Do you have a hard close (*results in GAAP / SEC financial statements at quarter or fiscal year end*)?
- b. Do you have a soft close (*occurs on interim months between quarter-end and produced financial data for internal management use*)?
- c. Do you have a virtual close (*reflects on-demand availability of vital management reporting*)?
- d. Do you have an early close (*estimates bottom line number before fiscal period ends*)?

Impact of factors in analysis

How important is each of the following factors in your financial close process?

- a. Need to meet management expectation
 - b. Collaboration
 - c. Need to meet regulation changes, specifically
 - Fair value accounting standards
 - SEC XBRL mandate
 - Sarbanes-Oxley
 - Dodd-Frank Act
 - d. Estimation challenges
-

Appendix A. Interview questions

Monitoring financial close process

How do you monitor the financial close process?^a

What metrics do you use to track your financial close process?

What changes have you made to your financial close process?

Is timeliness vs. quality issue an issue for your financial close process? If yes, how do you handle this challenge?

What are the key internal controls for your financial close process?

How have these internal controls changed due to technology advances?

Other factors

What technology do you current use in your financial close process?

- a. Are you satisfied with this technology?
- b. What additional technology features would be helpful?
- c. In what parts of the financial close process do you use technology?
- d. Is technology used cloud-based?

Financial close process generally includes performance and then review and adjustments at the last minute. How can this process be improved?

What process will not be automated?

How do you handle the manual processes? (i.e. use checklist, employee training, etc.)

Have you participated in any mergers or acquisitions in the past five years? If yes, how have they impacted your financial close process?

Size of company?

Who is your external auditor?

^a Potential metrics include (adopted from Clark 2010): number of non-recurring transactions, new account requests, journal entries containing errors or requiring re-adjustments, number of control remediations, number of auditor adjustments, number of post-close adjustments, days to close, and percent tasks late.
