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Risk Reporting During a Crisis: Evidence from the Egyptian Capital Market

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Abstract

Research purpose

This paper examines corporate risk disclosure (CRD) practices and determinants in the annual reports of Egyptian listed companies during the 2011 political crisis (uprising) in Egypt.

Design/Methodology/Approach

Content analysis of the annual reports of a sample of nonfinancial listed companies representing different industry sectors was conducted to investigate attributes and factors underlying their risk disclosures.

Findings

The findings demonstrate that companies disclosed more monetary, future and good risk information. The results show a positive and significant relationship between company size and the level of CRD, a positive but insignificant relationship between the extent of CRD and some company-specific characteristics: industry type, profitability and cross-listing, and a negative and insignificant relationship between corporate reserves and the level of CRD.

Research Limitations/Implications

A larger sample size would be needed for greater generalization of the findings. This study extends the literature on CRD by examining CRD practices at a time of current and ongoing crisis. However, more research is needed to examine variations in CRD practices before and after the 2011 political crisis.

Practical Implications

The results could be used by information users, companies and the capital market authority to inform policy-making and tighten regulations to improve CRD. Recommendations are made for improving the quality and informativeness of risk information.

Originality/Value

It is important to investigate CRD practices, considering the dearth of research, particularly in emerging capital markets and during crises, when companies are exposed to more, especially uncontrollable, risks. This study fills a void in literature by examining CRD practices during the 2011 political crisis in Egypt.

Keywords

Risk, CRD, Annual Reports, Content Analysis, Crisis, Egypt

1. Introduction

Most previous research on CRD has been undertaken predominantly in developed and highly-regulated countries in Europe and North America (Hassan, 2009). Risk reporting has received greater academic and regulatory attention in the UK, USA and other developed countries (e.g. Germany and Finland). Nevertheless, some studies have been carried out in other developed and emerging capital markets, including Japan (Mohobbot, 2005; Konishi and Ali, 2007; Kim and Yasuda, 2013; Kim and Fukukawa, 2013), Australia (Zhang and Taylor, 2011; Taylor *et al.*, 2009), UAE (Hassan, 2009; Uddin and Hassan, 2011), Malaysia (Amran *et al.*, 2009; Othman and Ameer, 2009; Arshad and Ismail, 2011; Zadeh and Eskandari, 2012a, 2012b; Ismail *et al.*, 2012), Iran (Ramezani *et al*., 2013), Bahrain (Mousa and Elamir, 2013, 2014), Egypt (Mokhtar and Mellett, 2013) and South Africa (Ntim *et al.*, 2013).

Previous literature has highlighted the importance of communicating information on corporate risks to shareholders and other information users (Beretta and Bozzolan, 2004; Cabedo and Tirado, 2004; Hassan, 2009; Linsley and Shrives, 2006; Solomon *et al*., 2000), and the usefulness of corporate disclosure, and CRD in particular, to companies, investors and capital markets, as well as more general economic benefits (Botosan, 1997; Cabedo and Tirado, 2004; Francis *et al.*, 2005).

Academic studies have suggested additional benefits of enhanced CRD. Risk information can be used by shareholders and other investors to assess a company's future performance and exposure to risk (Cabedo and Tirado, 2004; Campbell *et al.*, 2010; Deumes, 2008; Linsley and Shrives, 2000). Improved CRD helps institutional investors make better portfolio investment

decisions based on potential returns and expected risks (Solomon *et al.*, 2000; Cabedo and Tirado, 2004), and to predict stock returns and changes in stock prices (Beretta and Bozzolan, 2004; Deumes, 2008), as well as protecting investors by keeping them informed and reducing information asymmetry as all investors receive the same information simultaneously (Campbell *et al.*, 2010; Linsley and Shrives, 2000; Rajab and Handley-Schachler, 2009). Therefore, investors can exploit CRD to make informed decisions on a company's nature and level of risk, potential returns and future cash flows (Abraham *et al.*, 2012; Cabedo and Tirado, 2004; Linsley and Shrives, 2005b).

Companies can also benefit from risk reporting. They may reduce their cost of capital through risk disclosure (ICAEW, 1997; Linsley and Shrives, 2000; Solomon *et al.*, 2000), and may voluntarily disclose certain information to reduce demands for additional disclosure and further regulation (Rajab and Handley-Schachler, 2009). By reducing information asymmetry, CRD may also reduce agency costs (Rajab and Handley-Schachler, 2009) and increase market liquidity (Elshandidy and Neri, 2014). Risk reporting can also improve risk management practices and strategies, and underline managers' effectiveness in risk handling (Linsley and Shrives, 2000, 2005a; ICAEW, 1997).

This study examines CRD practices during the 2011 political crisis in Egypt, when companies became more vulnerable to predominantly uncontrollable risks. It investigates how companies survived and reacted to the crisis whilst keeping stakeholders informed of their risk exposure and performance. Given the lack of CRD research in Egypt, particularly during the crisis, this study extends the CRD literature by considering the political crisis in Egypt as ongoing. The

cultural, economic and regulatory context makes this study interesting and relevant to various stakeholders. The remainder of this paper is organized as follows. Section 2 reviews relevant literature, Section 3 discusses the Egyptian regulatory and political context, Section 4 develops hypotheses, Section 5 discusses the research methodology, Section 6 presents empirical analysis and Section 7 draws conclusions.

2. Literature Review

Largely in response to increasing demand for risk information following the US corporate failures and accounting scandals of 2002 and the 2007-2008 financial crisis (Lajtha, 2005; Singleton-Green and Hodgkinson, 2011), the accounting literature has highlighted the importance of risk-related information to investors and the need for improved CRD (Beretta and Bozzolan, 2004; Cabedo and Tirado, 2004; Deumes, 2008; Mousa and Elamir, 2013). while professional and regulatory bodies in highly-regulated countries have introduced disclosure regulations and guidelines to encourage companies to provide more risk information and meet users' information needs. However, Linsley and Shrives (2006) and Lajili and Zéghal (2005) underline the paucity of empirical research on CRD, particularly on non-financial companies (Dobler, 2008), and call for more research to fill this void in literature.

Organizations operate in unstable business environments with various internal and external risk factors (Cabedo and Tirado, 2004; Mousa and Elamir, 2013). However, studies have highlighted the lack of CRD and recommended improving both quantity and quality to enable investors to better predict companies' performance and assess their risk profiles (Beretta and Bozzolan, 2004; Cabedo and Tirado, 2004; Linsley and Shrives, 2006). Schrand and Elliot (1998) also argue

that financial statements provide insufficient information about risks and uncertainties. Similarly, Cabedo and Tirado (2004) recommend developing the current disclosure framework to help companies measure and report more risk-related information in their annual reports.

Linsley and Shrives' (2006) study of FTSE 100 non-financial firms found that UK companies tend to report little information on risks, and argue that managers withhold risk-related information, either to avoid disclosing commercially sensitive information or to avoid litigation resulting from providing forward-looking information. Likewise, Rajab and Handley-Schachler (2009) refer to a risk information gap between investors' expectations and the actual level of CRD, although Linsley and Shrives (2006) claim that this gap would exist even if CRD were made compulsory. Cabedo and Tirade (2004) attribute this lack of CRD to an inadequate disclosure framework, and recommend improvements to incorporate more risk information, with an additional statement in corporate reports discussing the various risks to which a company is exposed.

Most longitudinal studies have found that CRD is increasing, particularly with the introduction of risk disclosure requirements (Konishi and Ali, 2007; Neri, 2010; Rajab and Handley-Schachler, 2009; Deumes, 2008). Elshandidy and Neri (2014) found that UK companies, particularly those with good corporate governance practices, tend voluntarily to improve CRD informativeness over time. However, CRD often lacks clarity, readability, quantification of risks, and forward-looking risk information, making it difficult for investors to predict companies' future profits and risk exposure (Lajili and Zéghal, 2005; Linsley and Lawrence, 2007; Beretta and Bozzolan, 2004). The ICAEW (1999) has also emphasized the need for future and quantified risk

information to enrich the content of annual reports. Some studies underline the importance of risk assessment, which is essential for risk management (Lajili and zeghal, 2005), and reporting quantitative risk information (Beretta and Bozzolan, 2004; Linsley and Shrives 2000; Cabedo and Tirado, 2004).

Whereas most previous studies have focused on measuring the quantity of risk information disclosed by companies, Lajili and Zéghal (2005) and Dobler (2008) raise concerns about the quality of CRD. Beretta and Bozzolan (2004) also highlight the importance of improving CRD quality rather than quantity, as current disclosure regulations neither prescribe methods for measuring the impact of risks, nor explain the concepts and nature of risk and uncertainty (Miihkinen, 2010). Similarly, Rajab and Handley-Schachler (2009) argue that regulations may enhance the level of CRD yet have little impact on quality. Elshandidy and Neri (2014) support a voluntary approach to risk reporting, whereas Linsley and Shrives (2005a) observe that UK disclosure regulations have improved CRD by obliging companies to provide such information. Institutional investors in Solomon *et al.*'s (2000) investigation recommended that companies voluntarily disclose risk-related information to shareholders to enable informed decision making.

A few studies have examined CRD practices during crises. Meier *et al.* (1995) examined the measurement and disclosure of political risks facing US companies operating in Kuwait before and during the Gulf War, finding that companies provided inadequate disclosures of the war's impact on their risk exposure, and that disclosure regulations provide no guidelines on the assessment and reporting of political risks. Recent studies have examined the impact of the

global financial crisis on CRD practices, with mixed results. Linsley (2011) suggests that CRD should report coherent, risk-related information specific to the company's business activities. Leitner-Hanetseder (2012) demonstrates that the quality of risk information improved over the period 2007-2008, while Probohudono *et al.* (2013) find an insignificant increase in reporting business and credit risks during the crisis period 2007-2009. Although Ntim *et al.* (2013) find increasing CRD, they report that it provides predominantly qualitative, historical and good risk disclosures, while the CRD practices of South African companies did not differ significantly before, during and after the financial crisis.

Mokhtar and Mellett (2013) have conducted the only empirical study examining CRD and its drivers in the 2007 annual reports of Egyptian companies. Their study investigates the relationship between the quantity of voluntary or compulsory CRD in annual reports and a number of corporate characteristics. The results reveal that companies show a low level of compliance with mandatory requirements and voluntarily disclose little risk information in annual reports, and that financial risk is the most prevalent type disclosed in annual reports. The study also shows that CRD is qualitative in nature, with emphasis on historical and good risk information, and that several factors positively affect the level of CRD, including auditor type, board size and competition.

The above discussion indicates growing interest in CRD within the literature and in regulations, especially in developed countries; yet little empirical work has been done in the Arab world (Hassan, 2009), and Egypt in particular. This study contributes to the existing body of literature

by investigating the CRD practices and determinants of Egyptian companies during the 2011 political uprising.

3. The Egyptian Context

3.1. The regulatory context

Corporate disclosure is governed by the legislation of the country in which the company operates. In Egypt, several regulations have been enacted to encourage investment and enhance corporate disclosure, and hence transparency. According to Article 6 of the Capital Market Law (EFSA, 1992), companies must disclose timely information on any material events that may affect their performance. Similarly, Article 24 of the listing rules (EFSA, 2002) addresses "irregular material events", their positive or negative impacts on a company's financial position and share price, and the need to report them in a timely manner.

McGee (2010) argues that investors are more willing to invest in companies that adopt strict governance practices (CG), as this should improve transparency, reduce the cost of capital and elevate share prices. According to CG rules for private sector companies (EIoD, 2011), boards of directors (BoD) should identify and assess the types and level of risk to which companies are exposed and develop risk management policies based on company size, nature of activities and the markets in which they operate, as well as provide clear information on risk and risk management. However, CG rules are voluntary guidelines intended to protect shareholders by balancing their interests with those of company management and enhanced disclosure (EIoD, 2006).

With some exceptions (EFSA, 2006), Egyptian accounting standards (EASs) have been prepared and issued according to International Financial Reporting Standards. CRD requirements can therefore be explored through accounting standards. According to EAS 7, listed companies must disclose information on the nature and impacts of any events after the reporting period which might affect investors' decisions, for example any financial obligation resulting from adjudication against the company. Companies are required, according to EAS 13, to disclose positive and negative impacts of changes in foreign exchange rates when translating foreign currency financial statements and transactions. Similarly, EAS 15 requires companies to reveal information on the effects of related party transactions to help information users assess their impact on the company's financial position, net income and level of risk.

EAS 25 and EAS 26 handle disclosure and presentation as well as measurement and recognition of risks relating to the use of derivative financial instruments. EAS 25 requires companies to provide information to help investors assess a company's financial position, business activities, cash flows and level of risk associated with derivatives, as well as disclosing their risk management policies, but does not stipulate a particular pattern of risk disclosure or location within annual reports. Despite great similarities between EASs and IFRS (Hassan *et al.*, 2009), other aspects of disclosure have not yet been addressed within the EASs or other regulations. Elsaman and Alshorbagy (2011) call for reform of existing legislation to encourage investment.

3.2. The political context

This section briefly discusses the performance of the Egyptian Stock Exchange (EGX) during 2011 in light of the EGX 2011 Annual Report. The EGX witnessed the most severe deterioration

in its history in 2011 as the revolution and other external crises negatively affected the performance of the Egyptian economy. Consequently, it was closed from 28 January to 23 March 2011 to protect investors, with some negative consequences. First, credit rating agencies downgraded Egypt's government bond ratings four times during 2011. Second, investment outflows totalled four billion Egyptian pounds and the stock trading volume decreased significantly. Third, the US debt crisis and the downgrading of its credit rating also affected the global economy. All industry types were affected and the EGX fell by around 50 per cent in 2011, and 21 per cent in January alone.

The Capital Market Authority responded by imposing new rules to enhance disclosure and transparency, requiring companies to report on their financial, operating and administrative performance and ownership structure. However, companies were not specifically required to report risks. On the other hand, there were some positive indicators. First, listed companies managed to raise seven billion pounds during 2011. Second, nine companies were listed during this year and the number of investors increased by 1,000.

The table below presents the key events that occurred throughout 2011 (EGX, 2011, p.11).

Table 3-1: Key events in 2011

	Date	Key events
1	25 January	The Egyptian Revolution Started
2	28 January	Trading Suspension
3	23 March	Trading Resumption
4	30 May	Capital gains tax rumour spread
5	12 June	S&P downgraded Egypt's Credit Rating
6	August	US and Europe debt crisis heightening
7	October	EGX 20 Capped Index launch
8	30 October	Moody's downgrades the Egyptian government bonds' rating from Ba3 to B1 with a negative outlook

9	13 November	launching NILEX new trading system
10	24 November	Overnight Deposit Rate was raised by 100 bps to reach 9.25% and overnight lending rate was raised by 50 bps to reach 10.25%. The discount rate was also raised by 100 bps to 9.5%
11	28 – 29 November	The parliamentary elections
12	22 December	Moody's downgrades the Egyptian government bonds credit rating for the fourth time from B1 to B2

As explained above, the revolution exposed companies to various types of risk. Political uncertainty and instability is expected to have negatively affected companies' performance and be reflected in their CRD practices.

4. Hypothesis Development

This study investigated narrative CRD practices and factors influencing the extent and nature of risk-related information by examining the impact of company-specific characteristics on CRD. A set of hypotheses was developed.

4.1 Attributes of CRD

Hypotheses were developed to explore CRD practices and attributes of risk information.

4.1.1 Nature of CRD

Previous literature has highlighted the importance of improving CRD by disseminating more quantitative risk information, enabling investors to assess company risk profiles (Beretta and Bozzolan, 2004; Linsley and Shrives, 2006). Concerns have been raised about the lack of quantitative risk information in corporate reports (Konishi and Ali, 2007; Mohobbot, 2005), although Linsley and Shrives (2006) suggest that a major obstacle is the difficulty of risk measurement. Accordingly, the first hypothesis is:

H1: Qualitative CRD is significantly greater than quantitative CRD.

4.1.2 Time Orientation of CRD

Investors need both historical and forward-looking information to assess a company's future performance. Although competitors may use forward-looking information to take advantage of a company's threats and opportunities (Aljifri and Hussainey, 2007), it may also help investors make better decisions (Linsley and Shrives, 2005b). The ICAEW (1999) places particular emphasis on future risk information. Previous studies reveal that companies disclose little forward-looking risk information (Beretta and Bozzolan, 2004; Mohobbot 2005), although UK companies provide greater amounts (Linsley and Shrives, 2006). This leads to the second hypothesis:

H2: The amount of future CRD is significantly greater than the amount of past CRD.

4.1.3 Tone of CRD

It is assumed that companies are more likely to disclose good news about business opportunities and risk management systems to reassure investors, facilitate raising capital and lower the cost of capital, as well as to avoid reputational damage (Linsley and Shrives, 2006). Ntim *et al.* (2013) found that South African companies disclosed more good news before, during and after the global financial crisis. On the other hand, Skinner (1994) argues that directors voluntarily disclose bad news to avoid facing legal exposure for withholding material information or providing misleading information. Therefore, the third hypothesis is:

H3: The amount of good CRD is significantly greater than the amount of bad CRD.

4.2 Determinants of CRD

Previous literature on CRD reveals several factors affecting the level of disclosure. Further hypotheses were developed to examine the association between the amount of CRD and company-specific characteristics.

4.2.1 Company Size

Previous studies have focused on the impact of company size on the level of corporate disclosure. Hossain *et al.* (1995) argue that information users expect more disclosure from large companies, while Rajab and Handley-Schachler (2009) claim that larger companies tend to provide more information to reduce agency costs and reduce information asymmetry. Some studies have found a significant positive relationship between company size and disclosure level (Ahmed and Courtis, 1999; Raffournier, 1995). Similarly, most CRD studies have found that larger companies report more risk information than smaller ones (Beretta and Bozzolan, 2004; Hernandez-Madrigal *et al.*, 2012; Linsley and Shrives, 2006; Vandemaele *et al.*, 2009). However, other studies have found either an insignificant or no relationship between company size and the level of CRD (Hassan, 2009; Rajab and Handley-Schachler, 2009). Accordingly, the fourth hypothesis is:

H4: There is a positive association between company size and the level of CRD.

4.2.2 Industry Type

CRD may be affected by the sector in which a company operates, as industry characteristics, competition level and market conditions may all affect its risk exposure. However, the results of previous research are mixed. Aljifri and Hussainey (2007) found an insignificant relationship

between industry type and the amount of forward-looking disclosure, and Konishi and Ali (2007) found no association between industry type and the level of CRD. Other studies have found that industry type significantly affects the amount of CRD (Amran *et al.*, 2009; Beretta and Bozzolan, 2004; Hassan, 2009; Rajab and Handley-Schachler, 2009). On this basis, the fifth hypothesis is:

H5: There is a positive relationship between industry type and the amount of CRD.

4.2.3 Profitability

Highly profitable companies are exposed to higher levels of risk and might therefore be expected to report more risk information. Aljifri and Hussainey (2007) found that highly profitable companies provide more forward-looking information, and Mousa and Elamir (2013) found that profitability and the level of CRD are significantly correlated. However, other studies report a negative association (Allini *et al.*, 2014; Miihkinen, 2010; Vandemaele *et al.*, 2009) and Mohobbot (2005) found no relationship between the two variables. This leads to the sixth hypothesis:

H6: There is a negative relationship between the level of CRD and profitability.

4.2.4. Cross-listing

Companies wishing to raise additional capital may seek foreign listings on international capital markets. A few large Egyptian companies trade shares on international capital markets in the form of global depository receipts. Cross-listed companies are subject to greater regulation and are therefore more likely to disseminate more risk information. Abraham and Cox (2007) suggest that the additional disclosures required by foreign stock exchanges should also be

available to domestic investors. Furthermore, Rajab and Handley-Schachler (2009) claim that cross-listed companies tend to enhance their CRD to increase the trading volume of their securities. Some studies have found a significant positive relationship between cross-listing and the quantity and quality of CRD (Miihkinen, 2010; Rajab and Handley-Schachler, 2009). Therefore, the seventh hypothesis is:

H7: There is a positive relationship between cross-listing and the extent of CRD.

4.2.5 Amount of Reserves

Higher corporate reserves may indicate a higher risk profile. The Companies Act (1981) requires Egyptian companies to establish a percentage of net income in mandatory reserves to cover any potential losses and/or increase their capital. Moreover, it indicates that companies can have other voluntary reserves for particular purposes to maximize shareholder value. Little research has examined the association between reserves and CRD, although Hassan (2009) finds an insignificant and negative relationship between the two variables. Therefore, the eighth hypothesis is:

H8: There is a positive relationship between the amount of reserves and the level of CRD.

5. Research Methodology

5.1. Sample selection and data collection

The study sample comprised 31 non-financial listed companies as at 31 December 2011. Several selection criteria were used. First, financial companies were excluded because they undertake different business activities, with different risks and disclosure requirements (Linsley and Shrives, 2005b; Miihkinen, 2010; Mousa and Elamir, 2013). Second, the sample encompassed

companies of different sizes from all non-financial sectors to investigate differences in CRD practices across industry types and ensure the generalizability of research findings, as well as providing a snapshot of recent CRD practices in light of political uncertainty and instability. Third, the sample included four Egyptian companies cross-listed on the London Stock Exchange or in the US in 2011 to examine the impact of cross-listing on CRD.

Some studies have investigated CRD in corporate reports other than annual reports, or in particular sections of the annual report, including management reports (Bungartz, 2003 cited in Dobler, 2008), prospectuses (Deumes, 2008; Hill and Short, 2009) and interim reports (Elzahar and Hussainy, 2012). While several studies have examined CRD practices and determinants in annual reports (Amran *et al.*, 2009; Dobler *et al.*, 2011; Linsley and Shrives, 2006; Linsley and Lawrence, 2007; Oliveira *et al.*, 2011; Taylor *et al.*, 2009; Vandemaele *et al.*, 2009). Similarly, this study investigates CRD in annual report narratives, specifically management reports and notes to the accounts. Annual reports are publicly available, and investors use them as a major source of information to assess companies' performance and make investment decisions (Hassan *et al.*, 2009). Beretta and Bozzolan (2004, p.285) also argue that the "disclosure of risk is intrinsically narrative". Accordingly, this study examined the entire narrative content of corporate annual reports to gain a full picture of CRD.

5.2. Research method

Various research methods have been used in previous studies. Hassan (2009) used a disclosure index to measure the level of CRD by UAE companies, and Linsley and Lawrence (2007) measured the readability of narrative risk disclosure in annual reports. However, content

analysis (CA) has been widely used (Abraham and Cox, 2007; Beretta and Bozzolan, 2004; Lajili and Zéghal, 2005; Linsley and Shrives, 2006; Mousa and Elamir, 2013; Deumes, 2008) and was employed in this study.

CA has early been used for the analysis of texts (Hardy and Bryman, 2004). It is defined as "a method that uses a set of procedures to make valid references from texts" (Smith, 2004, p. 147). Bryman and Bell (2011, p.291) define CA as "an approach to the analysis of documents and texts that seeks to quantify content in terms of predetermined categories and in a systematic and replicable manner". CA is appropriate for investigating large amounts of narrative data (Mousa and Elamir, 2013) and was therefore used in this study to examine narrative risk reporting in annual reports. Following Linsley and Shrives (2006), a number of factors were considered.

First, a broad definition of risk was adopted, encompassing both upside risks (opportunities) and downside risks (threats) and considering information on actual and expected profits and losses associated with business events.

Second, the sentence was taken as the unit of analysis; hence, the number of sentences was counted to assess the number of risk disclosures. According to Silverman (2011), word, sentence, line or paragraph may be used as the coding unit for the number of occurrences of a particular event. Lajili and Zéghal (2005) counted both words and sentences, while several CRD studies have used the sentence as the coding unit (Abraham and Cox, 2007; Beretta and Bozzolan, 2004; Konishi and Ali, 2007; Linsley and Shrives, 2006). Milne and Adler (1999, p.243) state that "sentences are far more reliable than any other unit of analysis", and Linsley and

Shrives (2006, p.393) state that "words can only be interpreted within the context of a sentence". The use of sentences could also be more efficient and less time-consuming.

Third, the study investigated all types of risk to give a full and rich picture of companies' total risk disclosures and ensure comparability with other studies. Therefore, the study adopted the ICAEW's (1997) risk categorization used by Linsley and Shrives (2006, p.401), with the addition of litigation risk as a subcategory of strategic risks (see Appendix A).

Coding followed Linsley and Shrives' (2005a, 2006) method (see Table 6-1). A coding grid was established for each company to measure the level and attributes of CRD. CA was carried out by reading the entire annual report narrative, guided by Linsley and Shrives' (2006, p.402) decision rules (see Appendix B). These decision rules were used to reduce the element of subjectivity associated with CA. Accordingly, any sentence denoting risk information was coded in terms of the type of risk and attributes of the information (see Table 6-1). The number of risk disclosures was then counted for each company.

5.3. Reliability of measurement

A major limitation of CA is the subjective perceptions of individual coders (Linsley and Shrives, 2006). To overcome this problem, some previous studies (Abraham and Cox, 2007; Lajili and Zéghal, 2005; Linsley and Shrives, 2006) have used one or more independent coders; however, this may distort the consistency of the coding process and research findings. While Mokhtar and Mellet (2013) performed the coding twice to increase accuracy of results, in this study, a set of predefined decision rules was employed to ensure the reliability of the coding process and measurement of CRD, and to reduce subjectivity.

5.4. Measurement of variables

5.4.1. Dependent variable

The dependent variable is the level of CRD measured by the amount of risk information in terms of the number of risk-related sentences.

5.4.2. Independent variables

In order to test the hypotheses developed above, several independent variables were measured. Company size was measured by the natural logarithm of total assets at 31 December 2011. Industry type was measured by assigning a number between 1 and 12 to each industry sector. Cross-listing is a dummy variable equalling 1 for cross-listed companies and 0 otherwise. The return on equity (ROE) ratio was used to measure profitability, and reserves were measured by the amount of net income retained, taken from the balance sheet.

5.5. Statistical model

The relationship between the level of CRD and company-specific characteristics was examined using the regression model below:

$$CRD = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X3 + \beta 5X4 + \varepsilon$$

where CRD is the amount of CRD, β0 is the intercept, X1 is company size, X2 is industry type, X3 is profitability, X4 is cross-listing, X5 is reserves and ε is an error term.

6. Data Analysis and Results

6.1. Overall analysis

A total of 3,449 CRD sentences were identified. Table 6-1 displays the total number of risk disclosures for sample companies, the number of CRD sentences in each of six risk categories,

and the number of risk-related sentences for each information characteristic. Financial risks were most frequently reported by sample companies (1,748 sentences), representing 50.7 per cent of the total. This is consistent with Mokhtar and Mellett's (2013) results and implies that companies were significantly affected by volatility in interest rates, exchange rates and commodity prices during 2011. The findings show a large number of strategic risk disclosures (1,100), suggesting that companies were attempting to attribute their poor performance to uncontrollable external factors relating to political instability and global financial crises. Companies focused on reporting operational risks, and tended to attribute the impact of risks to security issues during and after the revolution, which they claimed hindered the transportation of raw materials and goods.

[INSERT TABLE 6-1 HERE]

Table 6-1 shows that companies disclosed more quantitative than qualitative risk information, contradicting the large body of literature highlighting the lack of monetary CRD. The crisis may have encouraged or forced companies to provide more specific information on their risk exposure and losses and its effect on their performance. The results also reveal significantly more future than past risk disclosures. Unexpectedly, companies disclosed more positive information about their future prospects and opportunities, perhaps seeking to reassure shareholders and other investors about their business plans, future performance and risk management strategies. However, they were concerned and uncertain about the future because of ongoing political uncertainty and instability.

Generally, companies tended to blame poor performance on the political crisis, while providing little information on their risk management systems and strategies and their effectiveness. Companies should provide more information on risk management actions in place to mitigate the impact of the crisis and assure investors.

6.2. Descriptive analysis

Table 6-2 shows that companies disclosed more quantitative than qualitative risk information (estimated means of 78.55 for monetary and 33.68 for non-monetary CRD). They also reported more forward-looking risk information (estimated means of 71.29 for future and 36.74 for past risk disclosures). Similarly, companies disclosed more good than bad risk information (estimated means of 58.13 for good and 19.39 for bad risk disclosures).

[INSERT TABLE 6-2 HERE]

Accordingly, the first hypothesis is rejected as the p-value exceeds the 0.05 significance level, indicating that the difference between the two means is not significantly different from 0. As shown in Table 6-3, there is a statistically significant difference between the number of monetary and non-monetary risk disclosures, as determined by a paired sample t-test (t = 5.945, difference in mean = 43.581, p-value = 0.000). This implies that average monetary CRD is greater than average non-monetary CRD, contradicting the results of most previous studies. For example, Mokhtar and Mellett (2013) found that Egyptian companies reported more qualitative risk information in their 2007 annual reports. However, this may be attributed to declines in the net profits of some companies in 2011, perhaps leading managers to disclose more monetary

risk information to justify poor performance and attribute losses to external factors, such as political instability and uncertainty and security concerns during and after the uprising.

[INSERT TABLE 6-3 HERE]

Table 6-3 indicates a statistically significant difference between the numbers of good and bad CRDs, suggesting that the average number of sentences revealing good risk information is greater than for bad risk information ($\mu_{good} = 58.13,\ \mu_{bad} = 19.39$). This is consistent with the results of Linsley and Shrives (2006) and Ntim *et al.* (2013), and can be interpreted as companies seeking to reassure investors by disclosing information relating to future prospects, expansion plans and risk management strategies to avoid or mitigate future risks. The findings reveal that companies disclosed more positive information on risks, even though political uncertainty presented more threats than opportunities. Companies are required to report on both threats and opportunities; regulations should therefore be introduced, with clear explanations of the concepts of risk and uncertainty and the types of risks on which companies should report.

Furthermore, there is a statistically significant difference between the number of future and past risk disclosures: the average number of future CRDs is greater than past CRDs ($\mu_{future} = 71.29,\ \mu_{past} = 36.74$). This confirms Linsley and Shrives' (2006) finding that UK companies disclosed more forward-looking risk information. However, it contradicts Mokhtar and Mellett's (2013) earlier finding that Egyptian non-financial listed companies disclosed more historical risk information in their 2007 annual reports. This contradiction may be attributable to companies changing their risk reporting behaviours and practices due to the political crisis. The crisis

brought greater risks and changes to the business environment, requiring companies to adapt and report differently.

6.3. Determinants of CRD

Table 6-4 displays the relationship between the level of CRD measured by sentences and each of company size, industry type, profitability, cross-listing and reserves. There is a significant positive association between company size and the level of CRD: the associated p-value is 0.045, meaning that the relationship is significant at the five per cent significance level (p-value = 0.045<0.05). This is consistent with the results of most previous research (Beretta and Bozzolan, 2004; Linsley and Shrives, 2006; Vandemaele *et al.*, 2009). The results ring true, as large companies conduct more extensive business activities and face greater risks than smaller ones. They also have more effective risk management systems; therefore, they have more to tell their shareholders and information users about risk exposure and management.

[INSERT TABLE 6-4 HERE]

There is a positive, but generally insignificant, relationship between industry type and the level of CRD, with a p-value of 0.429 at the five per cent significance level, meaning that industry type has no real effect on the level of CRD. This confirms Aljifri and Hussainey's (2007) finding of an insignificant relationship between industry type and the amount of forward-looking information. Political instability might also explain this relationship, as all industry sectors were exposed to similar risks during the crisis.

The results show no real relationship between the level of CRD and profitability: the associated p-value is 0.429, meaning that the relationship is insignificant at the five per cent significance

level. Most previous studies have found a negative association between profitability and the level of CRD (Miihkinen, 2010; Vandemaele *et al.*, 2009). In contrast, Aljifri and Hussainey (2007) found that highly profitable companies provide more forward-looking information, while Mousa and Elamir (2013) found that profitability and CRD are significantly correlated. Both profitable and less profitable companies had to release more risk information during the crisis, either to justify their success and survival, or attribute their losses and failures to the uncontrollable risks of the crisis.

There is a positive but insignificant association between the level of CRD and cross-listing, with a p-value of 0.069, meaning that the association is insignificant at the five per cent significance level. This contrasts with the findings of some previous studies that cross-listing and CRD are significantly positively correlated (Miihkinen, 2010; Rajab and Handley-Schachler, 2009), and may be attributable to the small number of cross-listed companies.

There is a negative association between the level of CRD and the amount of reserves. However, the associated p-value is 0.123, meaning that this relationship is insignificant at the five per cent significance level. This confirms Hassan's (2009) findings, and might indicate that establishing corporate reserves for different purposes does not necessarily reflect the actual level of corporate risk exposure and/or disclosure. Little research has investigated the impact of reserves on CRD, so this relationship needs further investigation (Hassan, 2009).

7. Conclusion, Limitations and Future Research

This study has explored the CRD practices and determinants of Egyptian listed companies during the 2011 political uprising in Egypt. The findings show that companies reported more

quantitative, future and positive risk information during the crisis, and that company size is significantly positively correlated with the level of CRD, whereas industry type, profitability and cross-listing are positively but insignificantly associated, and the amount of reserves is negatively but insignificantly correlated with the extent of CRD.

This study contributes to the growing body of literature on CRD by providing insight into CRD practices in Egypt's emerging capital market during political crisis and uncertainty. However, its major limitations are the small sample size due to the unavailability of some annual reports, and the subjectivity of CA.

Further research could be conducted to investigate other aspects of CRD, including the quality and informativeness of CRD, and the effect of other factors on CRD practices, such as CG characteristics, corporate risk level and ownership structure. Cross-country studies could be undertaken to identify differences in CRD practices, especially across countries with similar regulatory and institutional characteristics and political conditions, such as Arab Spring countries. Longitudinal studies could also be conducted to examine the impact on CRD of introducing EAS and CG rules, as well as changes in CRD practices before and after the 2011 political uprising.

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Appendices

Appendix A: Risk disclosure categories

Financial risk:
- Interest rate
- Exchange rate
- Commodity
- Liquidity
- Credit

Operational risk:
- Customer satisfaction
- Product development
- Efficiency and performance
- Sourcing
- Stock obsolescence and shrinkage
- Product and service failure
- Environmental
- Health and safety
- Brand name erosion

Empowerment risk:
- Leadership and management
- Outsourcing
- Performance incentives
- Change readiness
- Communications

Information processing and technology risk:
- Integrity
- Access
- Availability
- Infrastructure

Integrity risk:
- Management and employee fraud
- Illegal acts
- Reputation

Strategic risk:
- Environmental scan
- Industry
- Business portfolio
- Competitors
- Pricing
- Valuation
- Planning
- Life cycle
- Performance measurement
- Regulatory
- Sovereign and political
- Litigation

Appendix B: Decision rules for risk disclosures

- To identify risk disclosures, a broad definition of risk is to be adopted as explained below.
- Sentences are to be coded as risk disclosures if the reader is informed of any opportunity or prospect, or of any hazard, danger, harm, threat or exposure, that has already impacted upon the company or may impact upon the company in the future, or of the management of any such opportunity, prospect, hazard, harm, threat or exposure.
- The risk definition just stated shall be interpreted such that 'good' and 'bad' 'risks' and 'uncertainties' will be deemed to be contained within the definition.
- Although the definition of risk is broad, disclosures must be specifically stated; they cannot be implied.
- The risk disclosures shall be classified according to the grid in Table 6-1, and by reference to the Appendix A risk categories.
- Sentences of general policy concerning internal control and risk management systems shall be classified 'M5' – 'non-monetary/neutral/non-time-specific statements of risk management policy-integrity risk'.
- Sentences of general policy concerning financial risk management shall be classified 'M1' – 'non-monetary/neutral/non-time-specific statements of risk management policy-financial risk'.
- Monetary risk disclosures are those risk disclosures that either disclose directly the financial impact of a risk or disclose sufficient information to enable the reader to calculate the financial impact of a risk.
- If a sentence has more than one possible classification, the information will be classified into the category that is most emphasised within the sentence.
- Tables (quantitative and qualitative) that provide risk information should be interpreted as one line equals one sentence and classified accordingly.
- Any disclosure that is repeated shall be recorded as a risk disclosure sentence each time it is discussed.
- If a disclosure is too vague in its reference to risk, then it shall not be recorded as a risk disclosure.

Table 6-1: Aggregate risk disclosure of sample companies

		Non-financial risks							
		Financial risks	**Operations risks**	**Empowerment risks**	**Information processing and technology risks**	**Integrity risks**	**Strategic risks**	Total	Proportion (%)
Text Disclosure Sentence Characteristics		1	2	3	4	5	6		
Monetary/good/future	A	323	150	4	8	0	273	761	22.1
Monetary/bad/future	B	130	2	2	0	2	15	151	4.4
Monetary/neutral/future	C	617	1	5	0	0	36	659	19.1
Nonmonetary/good/future	D	56	70	19	20	2	175	342	9.9
Nonmonetary/bad/future	E	41	0	2	0	2	40	85	2.5
Nonmonetary/neutral/future	F	64	1	8	0	0	111	184	5.3
Monetary/good/past	G	175	93	33	1	3	153	467	13.5
Monetary/bad/past	H	122	39	2	0	1	121	285	8.3
Monetary/neutral/past	I	57	3	7	0	0	19	84	2.4
Nonmonetary/good/past	J	33	72	21	0	1	78	205	5.9
Nonmonetary/bad/past	K	3	4	0	0	1	75	83	2.4
Nonmonetary/neutral/past	L	14	6	3	0	0	4	27	0.8
Subtotal		*1,635*	*441*	*106*	*29*	*12*	*1,100*	*3,333*	*96.6*
Nonmonetary/neutral/non-time specific risk management policy	M	113	0	0	0	5	0	116	3.4
Total		**1,748**	**441**	**106**	**29**	**17**	**1,100**	**3,449**	**100**
Proportion (%)		**50.7**	**12.8**	**3.1**	**0.8**	**0.5**	**31.9**		

Table 6-2: Descriptive statistics for pairs of variables in Hypotheses 1-3

	Paired Sample Statistics (N = 31)		
	Mean	**Std. Dev.**	**Std. Error Mean**
Monetary	78.55	38.462	6.908
Nonmonetary	33.68	29.395	5.280
Good	58.13	36.397	6.537
Bad	19.39	14.521	2.608
Future	71.29	33.794	6.070
Past	36.74	23.816	4.277

Table 6-3: Paired samples test

		Paired Differences					**T**	**df**	**Sig. (2-tailed)**
		Mean	**Std. Deviation**	**Std. Error Mean**	**95% Confidence Interval of Difference**				
					Lower	**Upper**			
Pair 1	Monetary – Nonmonetary	43.581	40.818	7.331	28.608	58.553	5.945	30	0.000
Pair 2	Good – Bad	38.742	35.289	6.338	25.798	51.686	6.113	30	0.000
Pair 3	Future – Past	34.548	27.731	4.981	24.377	44.720	6.937	30	0.000

Table 6-4: Multiple regression

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients			Correlations		
	B	Std. Error	Beta	T	Sig.	Zero-order	Partial	Part
(Constant)	-280.068	131.334		-2.132	0.043			
Company size	13.356	6.324	0.519	2.112	0.045	0.509	0.389	0.333
Industry type	2.400	2.984	0.157	0.804	0.429	0.045	0.159	0.127
Profitability	1.220	1.007	0.224	1.211	0.237	0.183	0.235	0.191
Cross listing	94.081	49.470	0.621	1.902	0.069	0.445	0.356	0.300
Reserves	-1.919E-8	0.000	-0.589	-1.596	0.123	0.359	-0.304	-0.252

a. Dependent variable: CRD