Voluntary risk reporting to enhance institutional and organizational legitimacy: evidence from Portuguese banks

Abstract

Purpose: This paper explores the factors that affected the voluntary risk-related disclosures in the individual annual reports for 2006 of Portuguese banks. We also explore the extent to which in those reports conformed to Basel II requirements in terms of the voluntary disclosure of operational risk and capital structure and adequacy matters.

Design/methodology/approach: We conduct a content analysis of the annual reports of a sample of 111 banks. Voluntary operational risk and capital structure and adequacy disclosures were assessed using a list of disclosure categories that were developed from the Third Pillar disclosure requirements of the Basel II Accord.

Findings: Stakeholder monitoring and corporation reputation are crucial factors that explain the risk reporting practices observed. Voluntary risk reporting appears to enhance legitimacy for two major reasons: first, by fulfilling institutional pressures to assure the effectiveness of market discipline; and second, by managing stakeholder perception of a corporation's reputation.

Originality/values: The voluntary risk-related disclosures observed are shown to be explained by legitimacy theory and resources-based perspectives. This theoretical framework has not been tested hitherto in explaining the motives for banks to make voluntary RRD.

Keywords: Disclosure, risk, voluntary, legitimacy, reputation, stakeholders.

Paper type: Research paper.

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1. Introduction

Few studies have explored the motivations of banks to make risk-related disclosures [RRD]. Those to have done so have focused on aggregate concepts of risk or on voluntary operational risk in non-Latin countries in periods immediately after the Basel I Accord (Linsley *et al.*, 2006; Helbok & Wagner, 2006). In contrast, the present study focuses on voluntary RRD of operational risk and capital structure and adequacy that were made in 2006 (the year before the Basel II Accord became mandatory in Portugal).

The aggregated concept of risk used by Linsley *et al.* (2006) included credit risk, market risk, interest rate risk, operational risk, and capital structure and adequacy. Linsley *et al.* (2006) found a positive association between RRD and size of banks. However, they did not use a theoretical framework to explain the motivations for making RRD. In contrast, Helbok and Wagner (2006) used a framework of agency theory, signaling theory and political costs theory to explain voluntary operational risk disclosures. Their dependent variable included two categories designated as "operational risk in general" and "definitions." However, prior research has considered disclosures of information in these two categories to be "boilerplate" disclosures (Abraham & Cox, 2007; Linsley & Shrives, 2005) of limited usefulness (Linsley & Shrives, 2006, p. 400), and conducive to adverse capital allocations (Merkl-Davies & Brennan, 2007). Accordingly, the present study considers a concept of voluntary risk that does not contemplate such "boilerplate" disclosures.

Helbok and Wagner (2006) concluded that voluntary operational risk disclosures were associated negatively with capital ratio and profitability. They found that the economic rationale for RRD was that "outsiders may perceive the impact of an operational loss event to

be higher for financial institutions which are lower capitalized and less profitable." However, Blum (2008, p. 1700) argued that banks "know that reporting a high level of risk leads to a higher level of required capital." For our part, we contend that voluntary RRD are made to enhance stakeholders' confidence in a bank's reputation.

The Basel II Accord became mandatory for Portuguese banks in 2007 (Decree-Law 103/2007; and Decree-Law 104/2007). However, from 2004, many Portuguese banks began to prepare internal systems and processes to conform to Basel II requirements in 2007. In doing so, they had an increased need to develop information systems applications (Flores *et al.*, 2006). According to Boonstra (2003), what motivated banks to implement information systems to conform to Basel II requirements was the desire to improve their competitive position, improve the economic allocation of resources, and be regarded as legitimate by the supervisory entity and the market. For Boonstra (2003), one of the most important factors was a political one. The influence of the stakeholders was perceived as crucial to the survival of a bank, especially in settings where banks are publicly visible to relevant stakeholders and are subject to high levels of scrutiny by them. Consequently, the Portuguese setting was chosen because Portugal has shown a higher degree of public visibility since 2006 (assessed by the number of bank's branches per 100,000 people) compared to European common law countries (UK, Ireland and Netherlands) (European Central Bank, 2010).

Linsley and Shrives (2006, p. 400) have appealed for studies to be conducted of industry-specific risk disclosures in order to understand managers' RRD motivations. We respond to this appeal by drawing on the institutional and organizational perspectives of legitimacy theory and resources-based perspective, to contend that Portuguese banks were motivated to make voluntary risk disclosures for two major reasons: first, to conform to institutional pressure from stakeholders to ensure a socially desirable flow of information and to make market discipline effective (Diamond, 1985; Frolov, 2007; Bliss & Flannery, 2002;

Fernández-Alles & Valle-Cabrera, 2006); and second, to manage stakeholders' perceptions of the company's reputation in dealing with risk exposures. RRD would thereby help to ensure an adequate inflow of resources that are crucial to the viability of a company (Branco & Rodrigues, 2006a; Bebbington *et al.*, 2008; Sanchéz-Ballesta & Bernal Llórens, 2010).

Our results show that RRD are influenced by the perceived level of stakeholder monitoring (as assessed by a bank's public visibility) and by perceptions of a bank's reputation (as assessed by company age, depositor confidence level, and the ability of a bank to manage risk). Our results lend support to arguments that disclosure "can be conceived as both an outcome of, and part of, reputation risk management processes" (Bebbington *et al.*, 2008, p. 338); and that disclosure is "a market mechanism to create and sustain banks' reputation" (Sanchéz-Ballesta & Bernal Llórens, (2010, p. 403).

In the following section we review previous literature, develop an analytical framework, and propose hypotheses for testing. Thereafter, we explain our research method, report results, and present conclusions.

2. Analytical Framework

2.1. Prior Literature on Risk-Related Disclosures

RRD research has focused preponderantly on qualitative, descriptive studies of risk reporting practices by banks. Oliveira *et al.* (2011) present an extensive literature review based on these descriptive studies. They conclude that disclosures of risks being managed are unclear; that minimum mandatory requirements are not complied with; and that the effectiveness of market discipline is impaired. However, there has been a growing interest by banks in reporting information about operational risk, and capital structure and adequacy (BIS, 2001, 2002, 2003a; Helbok & Wagner; Avram & Skully, 2007).

(Insert Table 1 about here)

Table 1 shows prior literature on the determinants of banks' disclosures. Hossain and Reaz (2007) and Sanchéz-Ballesta and Bernal Llórens (2010) have explored the determinants of corporate disclosures by Indian and Spanish banks, respectively. However, neither study used a specific theoretical framework. Instead, they assumed that disclosure is a market mechanism to create and sustain bank reputation. Linsley *et al.*'s (2006) study of RRD by Canadian and UK banks did not specify a theoretical framework. In contrast, Helbok and Wagner (2006) drew upon agency theory, signalling theory and political costs theory to analyse the determinants of operational risk by European, Asian, and US commercial banks.

Linsley *et al.* (2006) found a positive association between RRD and size. However, they did not find any relation between RRD and profitability, or between RRD and leverage. Helbok and Wagner (2006) found that financial institutions with a lower ratio of equity to assets, and lower profitability, accord greater importance to voluntary operational risk disclosures. However, they did not control their results for size, reputation or ownership structure effects.

Consistent with Sanchéz-Balesta and Bernal Llórenz (2010) and Bebbington *et al.* (2008), we seek to resolve the conflicting results. We propose a theoretical framework based on legitimacy theory and resources-based theory. We contend that risk reporting by Portuguese banks is influenced strongly by two factors: monitoring by stakeholders, and corporate reputation. Our theoretical framework has not been used hitherto in explaining the motives for banks to make voluntary RRD.

2.2. Development of Hypotheses

2.2.1. An institutional perspective of legitimacy theory
Institutional theory posits that when institutional pressures "exert strong influences, the strategic decisions of managers result (…) in conformity to institutional pressures which

leads to (…) legitimacy" (Fernández-Alles & Valle-Cabrera, 2006, p. 505). Legitimacy "is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions" (Suchman, 1995, p. 574). Legitimacy is underpinned by a process through which a company seeks approval from groups in society (Kaplan & Ruland, 1991). Conformity with institutional pressures (such as adherence to Basel II requirements) is rewarded through improved social support from stakeholders; and increased company legitimacy, resources, and survival capabilities (Carpenter & Feroz, 2001; Fernández-Alles & Valle-Cabrera, 2006).

Compliance and conformity with any minimum disclosure requirements promotes legitimacy. Stakeholders can assess this legitimacy through monitoring. Therefore, we contend that stakeholders' monitoring needs can explain the level of RRD. Commonly, the proxy for closer monitoring by relevant stakeholders is public visibility, measured either by size or company listing status (Branco & Rodrigues, 2006b, 2008a, 2008b; Leventis & Weetman, 2004; Sanchéz-Ballesta & Bernal Lloréns, 2010).

Size

Brammer and Pavlin (2008, p. 124) argue that "larger firms (...) tend to be more visible to relevant publics [crucial stakeholders]" since they tend to be more complex. Thereby, they are likely to be subject to increased inherent risk. Since most relevant stakeholders are unable to participate in the management of a bank, they attribute greater importance to information about risk exposures and risk management practices. Consequently, the greater the size and public visibility of a bank, the greater are the social and political pressures it experiences to provide risk-related information crucial to fulfilling stakeholders' expectations. Van Hoose (2007, p. 108) argues that "larger banks with more resources may be better able to provide the information required to permit market discipline." Therefore, stakeholder monitoring

through public visibility (market discipline) suggests that a greater level of legitimacy will be required (Branco & Rodrigues, 2008a).

Hypothesis 1: There is a positive association between size and the level of risk-related disclosures.

Company Listing Status

Listed companies are more visible in society than unlisted companies. They are subject to more extensive RRD related to corporate governance reports. This social visibility tends to expose them to greater levels of stakeholder monitoring (Branco & Rodrigues, 2006b; Oliveira *et al.*, 2006). Thus, greater levels of RRD are expected.

Hypothesis 2: There is a positive association between company listing status and the level of risk-related disclosures.

2.2.2. Organizational legitimacy theory and resources-based perspectives

From an organizational view "legitimacy [is] a resource (…) that organizations extract – often competitively – from their cultural environments and they employ in pursuit of their goals" (Suchman, 1995, p. 576). Hybels (1995, p. 243) considers legitimacy to be an intangible asset that is "a symbolic representation of the collective evaluation of an organization" by the relevant stakeholders and how "each [of them] influences the flow of resources crucial to the organizations' establishment, growth, and survival." Legitimacy needs to be gained, maintained or restored through a specified level of public disclosure (O'Sullivan & O'Dwyer, 2009).

Galbreath's (2005) typology of intangible resources and capabilities includes reputational assets. Corporate reputation is an asset that is difficult to imitate (Branco & Rodrigues, 2006a). From a resources-based view differentiation can create competitive

advantages through the heterogeneity of resources and capabilities that are vital for the viability of firms (Fernández-Alles & Valle-Cabrera, 2006). Like legitimacy, corporate reputation is something that must be built, maintained and restored (Branco & Rodrigues, 2006a).

Due to their public visibility and their importance to the stability of the financial system, finance companies disclose risk-related information to build a good reputation with their relevant stakeholders. Thereby, they reduce information asymmetries between managers/owners and debt-holders, attract more deposits, and re-inforce the confidence of stakeholders.

Consequently, according to legitimacy theory and a resources-based view of the firm "companies take measures to ensure that their activities, image and reputation are acceptable to their stakeholders" (Singh & Point, 2009, p. 23). In similar vein, Sanchéz-Ballesta and Bernal Lloréns (2010, p. 403) argue that disclosure by banks "…[is] a market mechanism to create and sustain banks' reputation." Therefore, higher levels of legitimacy promote higher levels of reputation through RRD, since higher levels of RRD will enhance or sustain appropriate levels of reputation. Commonly, corporate reputation is proxied by company age, level of depositor confidence, and risk management ability (Fombrun & Van Riel, 1997; Hamid, 2004; Sabaté & Puente, 2003; Sanchéz-Ballesta & Bernal Lloréns, 2010).

Company Age

Reputation has been considered to represent the public's cumulative judgements of firms over time (Fombrun & Shanley, 1990); and as "a collective representation of a firm's past actions" (Fombrun & Van Riel, 1997, p. 10). The latter arises "from learning over time from observed behaviour about some exogenous characteristics of agents" (Diamond, 1989, p. 829). According to legitimacy theory and resources-based perspective, the age of a finance

company is related to its public reputation, its involvement in enhanced risk management activities, and the level of confidence depositors have in it (Hamid, 2004; Sanchéz-Ballesta & Bernal Lloréns, 2010). The longer a bank has been established, the higher its reputation level is likely to be. Therefore, higher levels of RRD are expected to build and sustain reputation.

Hypothesis 3: There is a positive association between company age and the level of risk-related disclosures.

Depositor Confidence

Sabaté and Puente (2003, p. 281) contend that "resource holders [the primary stakeholders such as depositors] will come to the firm attracted by the information content of its reputation." Good reputation about bank risk exposures and bank risk management abilities encourage the confidence of stakeholders. The higher the confidence of stakeholders, the higher the level of deposits attracted to the bank (Sanchéz-Ballesta & Bernal Lloréns, 2010). To sustain this level of resources and confidence, a high level RRD will be needed.

Hypothesis 4: There is a positive association between depositor confidence level and the level of risk-related disclosures.

Risk Management Ability

A good way to foster transparency is to improve a company's risk management system, since "the ability of a [company] to quantify fully its risk exposure will be irrelevant if it is not underpinned by a strong risk management function" (Heap, 2008, p. 33).

An effective risk management system improves corporate reputation about a bank's ability to deal with risk exposures. It will encourage and build the confidence of bank depositors (Sensarma & Jayadev, 2009; Sabaté & Puente, 2003). The better the risk management systems are, the better risk reporting seems likely to be (Solomon *et al.*, 2000). Moreover, "if banks recognise that they need to disclose more risk information, then an

incentive exists for them to improve their risk management capabilities as they will not want to be viewed as inferior to other banks in this respect" (Linsley & Shrives, 2005, p. 206).

Hypothesis 5: There is a positive association between risk management ability and the level of risk-related disclosures.

2.2.3. Control variables

Ownership structure

Gulamhussen and Guerreiro (2009) have suggested the highly concentrated equity structure in Portuguese banking sector causes Portuguese banks to experience reduced agency costs. Banks do not face a conflict of interest between owners and entrenched managers who exercise control without a stake. Rather, they face a conflict between controlling owners and minority shareholders. In more concentrated ownership structures, agency costs are lower, because owners internalise the benefits of monitoring management. This reduces opportunistic behaviour by management and levels of RRD (Jensen & Meckling, 1976; Gulamhussen & Guerreiro, 2009).

However, if there is a convergence of interests between the largest shareholder and outside investors, a positive relationship is expected between the owner's holdings and disclosure (Jensen & Meckling, 1976). The same is valid when institutional holders/blockholders are long term investors (Jung & Kwon, 2002).

Profitability

Linsley *et al.* (2006) argue that one of the reasons for a bank to signal its risk management abilities through disclosure is because there is a positive relation between risk management abilities and profitability. However, they did not find any relation between RRD and

profitability. Sensarma and Jayadev (2009) argue that better risk management systems can have a negative impact on profitability due to regulatory capital requirements. Helbok and Wagner (2006) found a negative relationship between operational risk disclosures and profitability.

Mutual Agriculture Credit Banks

In 2006, Mutual Agriculture Credit banks were subjected to a substantial business restructuring and an image change. Operational risk disclosure requirements were intensified and all ensuing steps to change business processes had to be explained in detail.

3. Research Method

3.1. Sample

Our sample consists of 111 Portuguese commercial banks that had individual annual reports for 2006 published in the database of the Portuguese Central Bank as at December 31, 2007. We focus on commercial banks because of their high levels of public visibility and consumer-orientation.

3.2. Dependent Variable

In analysing voluntary RRD items, we consider two categories required by the third Pillar of the Basel II Accord: operational risk, and capital structure and adequacy. Disclosures pertaining to these items were voluntary in 2006. For each of these categories we developed a list of sub-categories (see Appendix A).

Two semantic properties were considered: economic sign (monetary/non-monetary), and type of measure (past/future) (Beretta & Bozzolan, 2004; Linsley *et al.*, 2006). The list of disclosure items was pre-tested and several decision rules were established. The entire annual

report was analysed in view of findings by Woods and Marginson (2004) that risk disclosures were scattered throughout the annual report. Most of the operational risk and capital structure and adequacy disclosures were narrative. Sentences were used to record those disclosures because of conclusions that sentences are more reliable and valid in cases where purely narrative text is being studied (Milne & Adler, 1999). Sentences are easily identifiable, less subjective to inter-judge variations, and are more suitable in inferring meaning (Haniffa & Cooke, 2005). However, some disclosures about capital structure and adequacy were included in tables. Therefore, narratives and tables and graphs were codified, as suggested by Woods *et al.* (2008). Inter-coder reliability was acceptable (Scott's *pi* = 83.2%) (Beattie *et al.*, 2004).

We analysed the hidden correlation between the two risk categories using Cronbach's Alpha (0.82) and then computed the disclosure score as:

$$RRDj = \sum_{i=0}^{sa} or_{ij} + \sum_{i=0}^{sa} csa_{ij}$$

where

or_{ij} = number of operational risk sentences for the sentence attribute i in the jth bank;

csa_{ij} = number of capital structure and adequacy sentences for the sentence attribute i in the jth bank; and

sa = number of sentence attributes (sa = 4).

3.3. Independent and Control Variables

Table 2 presents definitions of independent variables and control variables, and reveals the predicted signs of these variables (based on legitimacy theory and resources-based perspective).

(Insert Table 2 about here)

Size was assessed using the following variables: spatial competition index [SC], number of branches, number of employees, total assets, and profits (Branco & Rodrigues, 2008a). Since these size variables were highly correlated, we applied a principal components analysis to generate an index for size. Uni-dimensionality (one component extracted explained 83 per cent of the total variance) and internal consistency (Cronbach's Alpha = 0.94) were assured. Principal components analysis was validated by the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO = 0.80), and Bartlett's test of sphericity (χ^2 = 1,131.52; p $\leq$ 0.01). The size index for the jth bank is defined as:

$Size_j$ = 0.564*SC + 0.978*Branches + 0.988*Employees + 0.981*Total assets + 0.976*Profits

"Company listing status" was assigned 1 if the bank was listed on one or more regulated stock exchange markets, and 0 otherwise (Oliveira *et al.*, 2006; Leventis & Weetman, 2004).

"Company age" was assessed by the number of years the bank had been in operation since its inception up until 2006 (Hamid, 2004).

"Depositor confidence" was measured by the ratio total of deposits to total assets (Sanchéz-Ballesta & Bernal Lloréns, 2010).

"Risk management ability" was assessed by the regulatory capital adequacy ratio. Sensarma and Jayadev (2009) used this ratio as a proxy for solvency risk. However, this regulatory ratio incorporates assessments of minimum capital requirements for credit risk, market risk and operational risk. It represents "the available cushion to a bank's unexpected losses and implicitly protects the interests of uninsured depositors. (…) [It] builds confidence

of bank depositors" (Sensarma & Jayadev, 2009, p. 11). Therefore, it is a suitable proxy to overall risk management ability of a credit institution.

Control Variables

"Ownership structure" was assessed by the percentage of shareholdings greater than 2%, following the concept of qualified shareholding stated in the Portuguese Securities Code.

"Profitability" was measured by the return on assets ratio (Linsley *et al.*, 2006; Helbok & Wagner, 2006).

"Mutual Agricultural Credit Banks" was measured by considering the business restructuration and image change these commercial banks were subjected to during 2006: commercial banks classified as Mutual Agriculture Credit banks were assigned 1, and 0 otherwise.

3.4. Empirical model

The estimation model tests whether factors associated with legitimacy theory and resources-based perspectives [LRb] affect the volume of RRD in bank *j* when we control for other company-level drivers of disclosure [C].

$$\text{RRD}_j = f\,(\text{LRb}_j,\, \text{C}_j) + \upsilon_j$$

4. Results

4.1. Descriptive and bivariate analysis

Table 3 reports the descriptive statistics of the dependent, independent and control variables. On average, Portuguese commercial banks had low levels of RRD (mean = 16.78 sentences). The effects of this lower level of disclosure were exacerbated by comparability difficulties, by inability to understand narratives, and by a failure of narratives to explain numerical

disclosures (Oliveira *et al.*, 2011). These results support previous findings (Ernst & Young, 2008; KPMG, 2008, 2009; PriceWaterhouseCoopers, 2008; Woods *et al.*, 2008a, Woods & Marginson, 2004).

(Insert Table 3 about here)

The highest levels of disclosures were made by large listed banks, consistent with our theoretical framework. Their public visibility requires a higher level of legitimacy to fulfil stakeholders' expectations. This reduces information asymmetries between managers/owners and debt-holders, helps monitoring efforts of stakeholders', and builds corporate reputation by improving stakeholders' confidence.

The mean values for ownership structure (shown in Table 3) confirm that Portuguese commercial banks are highly concentrated. This indicates the possibility of different agency relations between controlling owners, managers and minority shareholders (Gulamhussen & Guerreiro, 2009).

Table 4 (Panel A) shows 1,863 sentences containing voluntary RRD: 968 of operational risk, and 895 of capital structure and adequacy. Most of these sentences are qualitative and backward-looking, consistent with Linsley *et al.* (2006). Quantitative and forward-looking disclosures are highly sensitive and are subject to higher levels of proprietary costs (Linsley *et al.*, 2006). Therefore, consistent with legitimacy theory and resources-based perspective, it is understandable that managers prefer to disclose qualitative and backward-looking voluntary risk information. Such disclosures are less harmful to corporate image and reputation.

Table 4 (Panel B) presents the results of the independent sample *t*-tests and Mann-Whitney U tests for RRD. There are statistically significant differences in the means (medians) between the two groups of each dummy variable. Listed credit institutions have greater levels of RRD because they are exposed to closer stakeholder scrutiny than unlisted

banks. Despite the fact that Mutual Agriculture Credit banks were subjected to a business restructuring and image change during 2006, and were required to make additional disclosures to detail the processes involved, the "other commercial banks" show greater levels of disclosure.

(Insert Table 4 about here)

Table 5 presents the pair-wise correlation coefficients between the model variables. The magnitude of the correlation coefficients indicates that multicollinearity is minimal.

(Insert Table 5 about here)

4.2. Multivariate analysis

The regression model was tested for autocorrelation, multicollinearity, heterocedasticity, outliers, and normality of residuals. Three outliers were identified and excluded. Normality tests revealed that the raw continuous dependent, independent and control variables were not distributed normally. Following Cooke (1998) these raw variables were normalised using Blom's transformation.

The regression model is statistically significant (p-value < 0.01) with an adjusted R^2 of 0.36 (Table 6). The removal of outliers improved the previous adjusted R^2 from 0.30 to 0.36.

(Insert Table 6 about here)

RRD is associated positively with size (p-value < 0.01), company listing status (p-value < 0.05), company age (p-value < 0.05), depositor confidence (p-value < 0.05), and risk management ability (p-value < 0.05). Hypotheses H1, H2, H3, H4, and H5 are supported. Thus, Portuguese commercial banks appear to adopt legitimacy strategies for two major reasons. First, from an institutional perspective, publicly visible banks (as assessed by size and company listing status) enhance legitimacy by conforming to institutional pressures associated with Basel II requirements. Enhanced legitimacy improves market discipline

because of stakeholders monitoring (Bliss & Flannery, 2002; Carpenter & Feroz, 2001; Fernández-Alles & Valle-Cabrera, 2006; Frolov, 2007). Second, from an organizational perspective, banks with higher levels of corporate reputation (assessed by company age, depositor confidence, and risk management abilities) adopt legitimacy strategies through voluntary RRD to manage stakeholders' perceptions of their reputation (Bebbington *et al.*, 2008; Sanchéz-Ballesta & Bernal Lloréns, 2010).

RRD is associated negatively with the Mutual Agriculture Credit banks (*p*-value < 0.1). As expected, other commercial banks disclosed more voluntary risk information since their public visibility is greater. Thus, according to legitimacy theory, they are exposed to extra demands to fulfill stakeholders' expectations through disclosure of voluntary risk information.

RRD is not associated with ownership structure. This result was expected due to the highly concentrated nature of the Portuguese banking sector (European Central Bank, 2006; Gulamhussen & Guerreiro, 2009). The latter characteristic reduces the possibility of existing agency costs due to management entrenchment. This non-significant result also indicates a low possibility of existing agency conflicts between owners/managers and minority shareholders. The result lends support to the explanatory capacity of our theoretical framework to explain voluntary RRD. As expected, RRD are not associated significantly with profitability, consistent with Linsley *et al.* (2006).

5. Conclusions

Our analysis of RRD practices by Portuguese commercial banks supports explanations of RRD that are based on a combination of legitimacy theory and resources-based perspective. Corporate reputation risk management seems to be an important determinant of risk reporting practices by banks.

Public visibility (assessed by size and company listing status) is a crucial factor in promoting legitimacy strategies through RRD. Highly visible banks are subject to greater scrutiny because most relevant stakeholders do not participate in a bank's day-to-day management. Consequently, publicly visible banks are exposed to extra institutional pressures to conform to minimal RRD requirements that are considered conducive to reducing information asymmetries. These disclosures also promote stability of the banking system, market discipline effectiveness, and sustain the social support of stakeholders. On the other hand, reputation (assessed by company age, depositor confidence level, and company risk management abilities is crucial to a company strategy to enhance legitimacy by building a sustainable stakeholder management mindset (Jagersma, 2009). Older banks with better risk management abilities, and with more confident depositors, take advantage of this situation: through disclosure of risk information they try to influence how well stakeholders perceive the bank's reputation is being managed. This promotes confidence among relevant stakeholders and, consequently, helps guarantee a continuous inflow of resources to the banks (Sanchéz-Ballesta & Bernal Lloréns, 2010; Fernández-Alles & Valle-Cabrera, 2006).

The present study is cross-sectional and based on a Portuguese sample that reflects a highly concentrated ownership structure. Such a setting reduces agency conflicts. Further research could beneficially investigate whether, in different settings with different agency conflicts, the theoretical framework we propose remains suitable (Alexander, 2006). Other corporate governance variables not usually included in company annual reports (such as board composition, audit committees, external auditor quality, leadership duality, and CEO compensation schemes) could be used to control the results.

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Table 1 – Prior literature on determinants of banks' disclosures

Type of analysis	Dependent variable			
	Risk-related disclosures	Operational risk disclosures	Corporate disclosures	Corporate disclosures
	Lisnley *et al.* (2006)	Helbock and Wagner (2006)	Hossain and Reaz (2009)	Sanchéz-Ballesta and Bernal Llorens (2010)
	Bivariate	Multivariate	Multivariate	Multivariate
Explanatory variables				
Size				
Total assets	+		+	
Market capitalization	+			
Profitability				
Return on assets	0	–		
Leverage				
Book-to-market value of equity	0			
Equity to assets ratio		–		
Debt to total assets				0
Liquidity				
Cash to debt				0
Monitoring and reputation				
Size				
Total assets				+
Customers' deposits				
Customers' securities deposited to total assets				+
Age			0	
Company listing status			0	
Complexity of business				
Number of subsidiaries			0	
Assets in place				
Book value of net fixed assets to total assets			+	

Positive and statistically significant relation: (+); Negative and statistically significant relation: (-); No relation: (0).

Table 2 – Definition and predicted signs for independent and control variables

Variables	Definition	Predicted Sign
Panel A: Independent Variables		
Size [a, b]	Spatial competition index assessed by the market share of credit institution j in district k weighted by the relevance of that local market for the bank.	+
	Number of branches	+
	Total assets (100^3 Euros)	+
	Number of employees	+
	Profits (100^3 Euros)	+
Company Listing Status	Dummy variable = 1 if company is listed on one or more regulated stock exchange markets; 0 otherwise.	+
Company Age	Number of years the company has been in operation since inception until 2006.	+
Depositor Confidence	Total deposits to total assets	+
Risk Management Ability	Regulatory capital adequacy ratio	+
Panel B: Control Variables		
Ownership structure	Shareholdings greater than 2%.	?
Profitabilility	Return on assets = Total income to total assets.	?
Mutual Agriculture Credit Bank	Dummy variable = 1 if company is a Mutual Agriculture Credit Bank; 0 otherwise.	?

[a] The spatial competion index proposed by Branco and Rodrigues (2008a) as a proxy for size was calculated as follows:

$$SC = \sum_k \left(\frac{n_{jk}}{n_k} \times \frac{n_{jk}}{n_j} \right) \quad \text{where:}$$

n_j = total number of branches of credit institution j in a given year

n_k = number of credit institution branches in district k in a given year

n_{jk} = number of branches of credit institution j in district k in that year

Table 3 – Descriptive statistics for the dependent and independent variables

	Unit of measurement	N	Minimum	Maximum	Standard Deviation	Mean
Continuous variables						
Voluntary risk-related disclosures	Number of sentences	111	2.00	146.00	22.24	16.78
Spatial competition	Index	111	0.00	0.30	0.05	0.04
Number of branches	Count	111	1.00	853.00	152.02	47.79
Number of employees	Count	111	0.00	10,520.00	1,738.40	496.23
Total assets	100^3 Euros	111	13.93	81,891.87	12,185.75	3,019.63
Profit	100^3 Euros	111	-34.64	689.76	104.69	24.69
Company age	Count	111	0.00	162.00	36.99	46.33
Depositor confidence	Ratio	111	0.21	2.55	0.20	0.85
Risk management ability	Ratio	111	0.08	1.04	0.13	0.17
Ownership structure	Percentage	111	0.00	1.00	0.33	0.73
Profitability	Ratio	111	-0.03	0.10	0.01	0.01
Dummy variables			Frequency	Per cent		
Company listing status	Dummy = 1	111	3	0.03		
	= 0		108	0.97		
Mutual Agriculture Credit Banks	Dummy = 1	111	89	0.80		
	= 0		22	0.20		
	Total			100.00		

Definition of variables:
Spatial competition index = market share of credit institution j in district k weighted by the relevance of that local market for the bank; Company listing status = 1 if company is listed on one or more regulated stock exchange markets, and 0 otherwise; Company age = number of years the company has been in operation since inception until 2006; Depositor confidence = total deposits to total assets ratio; Risk management ability = regulatory capital adequacy ratio; Ownership structure = percentage of shareholdings greater than 2%; Profitability = return on assets ratio; Mutual Agriculture Credit Banks = 1 if company is a Mutual Agriculture Credit Bank, and 0 otherwise.

Table 4 – Frequencies and differences in the means (medians) of voluntary risk-related disclosures

	Voluntary risk-related disclosures	Operational	Capital structure and adequacy
Panel A: Number of sentences of risk-related disclosures for each sentence attributes			
Monetary	462	7	455
Non-monetary	1,401	961	440
Future	55	21	34
Past	1,808	947	861
Total	1,863	968	895
Panel B: Differences in means (medians) of risk-related disclosures			
Company listing status:			
Listed - Unlisted	81.76 ***	40.71 ***	41.05 ***
	(86.00) ***	(44.00) ***	(42.00) ***
MACB:			
MACB - Other commercial banks	-25.55 ***	-14.07 ***	-11.49 ***
	-(12.00) ***	-(7.00) ***	-(5.00) ***

Independent sample *t*-tests (Mann-Whitney U tests) are used to test the difference in means (medians).

Difference statistically significant at: ***0.01 level (two-tailed); **0.05 level (two-tailed); *0.1 level (two-tailed).

Table 5 - Correlations among dependent, independent and control variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Correlations (Pearson) among continuous variables									
(1) Voluntary risk-related disclosures	1.00								
(2) Size	0.51 ***	1.00							
(3) Company Age	0.12	-0.01	1.00						
(4) Depositor's Confidence	-0.10	-0.10	-0.14 *	1.00					
(5) Risk Management Ability	-0.19 **	-0.50 ***	0.03	-0.30 ***	1.00				
(6) Ownership Structure	0.22 ***	0.33 ***	0.08	-0.25 ***	-0.24 ***	1.00			
(7) Profitability	-0.08	-0.04	0.07	-0.25 ***	0.21 **	0.03	1.00		
Panel B: Correlations (Spearman) between the categorical and continuous variables									
(8) Company Listing Status	0.27 ***	0.27 ***	0.00	-0.23 ***	-0.17 **	-0.14 *	-0.11	1.00	
(9) Mutual Agriculture Credit Bank	-0.38 ***	-0.59 ***	0.20 **	0.41 ***	0.39 ***	-0.49 ***	0.09	-0.34 ***	1.00

Definition of variables:

Size = Principal components analysis (Spatial competition index; Number of branches; Number of employees; Total assets; Profits); Company listing status = 1 if company is listed on one or more regulated stock exchange markets, and 0 otherwise; Company age = number of years the company has been in operation since inception until 2006; Depositor confidence = total deposits to total assets ratio; Risk management ability = regulatory capital adequacy ratio; Ownership structure = percentage of shareholdings greater than 2%; Profitability = return on assets ratio; Mutual Agriculture Credit Banks = 1 if company is a Mututal Agriculture Credit Bank, and 0 otherwise.

Significant at the: ***0.01 level (one-tailed); **0.05 level (one-tailed); *0.1 level (one-tailed).

Table 6 – Results of regression model for voluntary risk-related disclosures

Variables	Pred. Sign	Voluntary risk-related disclosures (N = 108)	
Intercept		0.51	(1.85) [†]
Size	+	0.43	(4.12) [***]
Company listing status	+	1.15	(2.15) [**]
Company age	+	0.14	(1.72) [**]
Depositor confidence	+	0.23	(2.07) [**]
Risk management ability	+	0.23	(2.23) [**]
Ownership structure	?	0.09	(0.90)
Profitability	?	-0.08	-(0.99)
Mutual Agriculture Credit Bank	?	-0.61	-(1.84) [†]
R^2 (F-statistic)		0.40	(8.40) [†††]
Adjusted R^2		0.36	
Durbin-Watson		1.90	
Maximum VIF		3.16	
Kolmogorov-Smirnov statistic (p-value)		0.05	(0.20)

Dependent and independent continuous variables were normalised using Blom's transformation. Figures in parentheses are t-statistics. White heteroskedasticity-consistent standard errors, when necessary.

Regression models: $RRD_j = f(LRb_j, C_j) + \upsilon_j$

Definition of variables:

Size = Principal components analysis (spatial competition index; number of branches; number of employees; total assets; profits); Company listing status = 1 if company is listed on one or more regulated stock exchange markets, and 0 otherwise; Company age = number of years the company has been in operation since inception until 2006; Depositor confidence = total deposits to total assets ratio; Risk management ability = regulatory capital adequacy ratio; Ownership structure = percentage of shareholdings greater than 2%; Profitability = return on assets ratio; Mutual Agriculture Credit Bank = 1 if company is a Mututal Agriculture Credit Bank, and 0 otherwise.

Significant at the: ***0.01 level (one-tailed); **0.05 level (one-tailed); *0.1 level (one-tailed)
Significant at the: †††0.01 level (two-tailed); ††0.05 level (two-tailed); †0.1 level (two-tailed)

Appendix A: Disclosure categories

Operational Risk [a]

Operational risk categories

1. Internal fraud
2. External fraud
3. Employment practices and workplace safety
4. Clients, products and business practices
5. Damage to physical assets
6. Business disruptions and system failures
7. Execution, delivery and process management.

Operational risk management categories

8. Purchase of insurance
9. Hiring and retaining highly trained and experienced staff
10. Outsourcing of specialised business activities

allocation of responsibilities between external service providers and the outsourcing bank

12. Developing control quality system and equipments maintenance
13. Implementing an operational risk management system responsible to developing strategies to identify, assess, monitor and control/mitigate operational risk, such as, self-risk assessment (checklists, workshops or even scorecards), risk mapping, risk indicators and measurement

14. Have routines in place for ensuring compliance with a documented set of internal policies, controls, and procedures concerning operational risk management system;
15. Regular reporting of operational risk exposures to business unit management, senior management and to the board of directors
16. Regular review by internal/external auditors and supervisors entities
17. Developing an operational emergency response plan such as disaster recovery and business continuity plans taking into account different types of plausible scenarios
18. Extensive use and appropriate investments in new processing technology and information security
19. Maintaining comprehensive programs and contingency plans to control health, safety and environmental risks
20. Assess legal risk before making an investment.

Capital Structure and Adequacy [b]

21. Internal process for assessing capital adequacy and for setting appropriate levels of capital
22. Provide analysis of changes in the bank's capital structure and the impact on key ratios and overall capital position;
23. Information about how the requirements, under Basel II Capital Accord, have been calculated or fulfilled
24. External evaluation of risk in a generic way.

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[a] The development of the list of categories and sub-categories was based on Lajili and Zéghal (2005), and BIS (2005).

[b] The development of the list of sub-categories was based on BIS (2003b).