

## Risk Disclosure Policies:

### A cross-sectional analysis of the Greek Banking Industry

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#### Abstract

In this paper, we examine the under-researched Greek banking market; inadequate transparency and disclosure about exposures has led to counterparty concerns and renewed strains in bank funding markets. Greek banks, now struggling with the need to increase provisions against bad debts, asset write-offs and with problems of liquidity as a result of being frozen out of the interbank lending market are completely reliant on the European Central Bank. The study examines the impact that Basel II had on the risk disclosure practices in the Greek banking sector. The disclosure practices and their potential relationship with size, risk profile and profitability of the most actively traded Greek banks are examined. In 2010, the latest wave of outcry from investors surfaced, demanding the disclosure of information showing how Greece and Greek banks used derivatives to hide their deficits when Greek banks entered into a large number of private, off-market swaps from 2001 through 2007. There is a compelling public interest in relevant information being disclosed.

The results show that inadequacies still exist despite the fact that Basel II managed to raise the risk disclosing amounts in the annual reports of the Greek banks. The informational content of the disclosures is suspect, due to that little quantitative information is disclosed; favouritism towards qualitative and past related disclosures is revealed.

Furthermore, no quasi-norms between the size, profitability or risk profile of the institutions and their risk disclosing quantities is revealed.

Disclosing policies and the quantity of disclosures have evolved, throughout the examined period in the Greek banking industry; yet, transparency issues and quality problems are still present owing to the high degree of secrecy of the internal Greek market.

**Keywords:** risk, disclosure, size, profitability, regulation

#### 1. Introduction and Motivation to the Study

The decline of conventional banking and the simultaneous rise of shadow banking have created many challenges for regulators and supervisors to react to the new reality by implementing new policies and strategies able to respond to the new status-quo. This need grew even greater especially after the East Asian crisis (1997), with investors favorably disposed to more capable regulation for controlling risk taking and information disclosure. The 2007 crisis came to further highlight the inadequacies of existing regulations. It emphasized the need to control systemic risk and to develop and modernize risk management through stressing the need to raise the quality and quantity of risk disclosures addressed in the Basel II accord. The existing regulatory framework has not been sufficient. Greater transparency through enhanced risk disclosure guides well informed decisions and reduces mistrust and moral hazard among the market participants. Markets could potentially be less harsh in high-disclosure regimes than otherwise, hence a far-reaching disclosure of bank problems can quickly lead to recuperation from a

crisis, thus assisting in moderating projected (realized) losses (Rosengren, 1999). However, there is limited research and conflicting views regarding how risk reporting and risk disclosure practices can evolve. Most of the research to date concentrates on fully developed financial markets and only on aggregate measures which make it difficult to dissect reporting practices on a regional basis. There is little research on the field of risk disclosure of Greek banks which represent a sizeable proportion of funds for the Greek market. The country's low disclosure ranking (Cerf Index), the results of the most recent stress testing exercises of the Greek banking industry, the failure of the Agricultural Bank of Greece (ATE) to comply with disclosure requirements and withstand the extremely adverse scenario prompted our interest in researching the Greek region. We evaluate the impact that Basel II had on the volume and quality of credit risk and interest rate risk disclosures in the Greek banking sector by examining the level of disclosures in the periods right before and after the implementation of Basel II and IFRS requirements<sup>1</sup>; we examine the extent to which risk disclosure practices have evolved by studying potential relationships between risk disclosure volumes and size, risk profile and profitability parameters. Five objectives have been established in order to meet the aims of our study:

- i) To test whether the application of Basel II increased the volume of banks risk disclosures in the Greek region.
- ii) To test whether a potential relationship exists between bank size and the volume of risk disclosures.
- iii) To test whether a potential relationship exists between the risk profile of banks and the volume of risk disclosures.
- iv) To test whether a potential relationship exists between bank profitability and the volume of risk disclosure.

## 2. Disclosure

A richer information set is not necessarily linked to positive 'returns'. Economic theory presents us with contradictory expectations regarding the advantages of greater banking stability through enhanced disclosures. More information is rather associated with both beneficial and destructive externalities. Hence, richer disclosure and transparency can, on the one hand, influence sensible bank risk-taking through market discipline (Barth et.al. 2004). Equally, on the

other, richer disclosure has also the prospect of destabilizing effects by transmitting depressing informational spillovers throughout a banking system (Tadesse, 2006). The bulk of the evidence however, implies that heightened disclosures tend to support the stability of the banking system (Nier and Baumann, 2006). Goldstein (1998) and Shirai (2001) argue that low quality disclosures, transparency and auditing standards contribute greatly in the occurrence of a crisis. More diaphanous regimes maintained by authoritarian establishments that direct the provision of generous information disclosures both quantitatively and qualitatively are inclined to be more dynamic to the instability that cyclically captures the banking system. Basel II offered the opportunity for improved risk management systems in banks, upgrading the supervisory approaches and fostering market discipline. The three 'mutually reinforcing pillars' of the Accord aim to enable the supervisors and banks to make an assessment of the risks faced. All these were expected to greatly contribute to the soundness and safety of financial structures.

Linsley et al. (2006) find out that most information regarding risk is qualitative rather quantitative (66.6% qualitative – 33.4% quantitative) with greater disclosure of future risk information rather than present or past; they conclude that there is a positive association between the levels of risk disclosure with the bank size and the number of risk definitions. On this matter more recent research (KPMG, 2009) shows that most European banks talk about consequences of the crisis on their risks and returns. Additionally, Linsley and Shrivs (2005) also discovered a correlation among bank size and quantity of disclosures. They assert that this is due to the fact that large companies have higher number of stakeholders to whom the firm is accountable and as a result it has to present more information. On the other hand, Woods et al. (2009) in their paper discover that increasing levels of disclosure and the size of the bank do not correlate but the bigger the report the more disclosures it contains. Yet again, Beretta and Bozzolan (2004) in their research on listed non-financial firms discover that the quantity of disclosures is not a satisfactory proxy for the quality of disclosure. They argue, however, that size is both a strong driver and an enabler. Poshakwale and Courtis (2005) discover that there is indeed a negative relation between the level of disclosure and the cost of equity capital but this applies only to European banks. Linsley and Shrivs (2005) also found out that better disclosure encourages better risk management; they cite fear of judgment relating to risk disclosures denoting to the future, that might not come true thus creating sometimes the opposite result (i.e. less disclosure). Abdelsalam and Weetman (2007) found that

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<sup>1</sup> Introduction and transition to IFRS was required by the end of 2005, with permissions to delay introduction until 2007 and be fully functional by 2008.

disclosure levels are associated with audit firm type, business type, leverage, liquidity and legal form.

And there have been other studies that show the presence of a significant relationship between industry type and disclosure level (Cooke, 1991, 1992; Meek et al. 1995; Wallace and Naser 1995; Naser 1998; Camfferman and Cooke 2002; and Archambault and Archambault 2003). On the other hand, other research reports no relationship between industry types and levels of disclosure (Wallace et al. 1994; Inchausti 1997; Owusu-Ansah 1998; Naser et al. 2002; Akhtaruddin 2005; and Al Saeed 2006). Several research questions emerge from the literature regarding risk disclosure. Some researchers (Linsley et al. 2006) ask for reproduction and extension of their project on other regions in different points in time in order to have an image of how techniques change throughout time and markets. Woods et al. (2009) argue that even though banks stand at a vanguard position regarding developments in risk management, the banking sector is still under-researched when it comes to public risk disclosure. Jordan et al. (2000) observe that - especially for such types of banks that do not comprehensively account for their factual circumstances in preceding admissions - investors find qualified information valuable in valuing bank securities.

Hence, there is some evidence that the efficacy of market-based restraints also depends on the efficacy of the regulatory environment; and the number of studies on risk disclosure after 2008 is even more limited. Bank reporting (both the elements of disclosure and transparency) should be regarded as endemic to the regulatory establishments underlying the banking system. Barth et al. (2004), for instance, investigate the association between bank regulation in general and banking system rigidity. Even less studies bestow the community with international comparisons of disclosure requirements as part of level-playing regulatory regimes or equally of the effects that variation has in required transparency on banking system stability. In the case of Greece, the low rank assigned to the degree of corporate disclosure and transparency has motivated research studies but disclosure and transparency is examined in a different research context. Research on financial disclosure has also been quantified in the literature mainly through the Cerf index which covers measurement, recognition and disclosure of accounting data (Maggina, 2010). Most of the research, in fact, covers inconsistencies and factors that cause informational gaps that are most apparent in small and medium sized Greek listed companies. For example, Apostolou and Nanopoulos (2009) find that among Greek

corporations there is a significant extent of non-compliance in respect of IASs and the disclosures of Greek regulations. However, such research covers non-bank corporations.

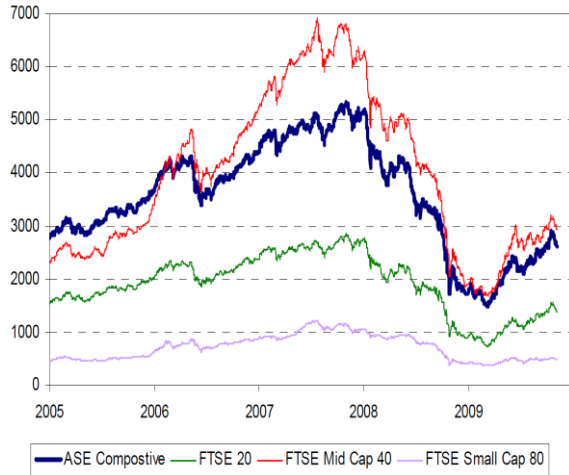
## 2.1 The Greek Banking Market.

Gray (1988) indicates that capitalistic, advanced markets place a high degree of emphasis on independence, professionalism, transparency, flexibility and optimism, while socialist-oriented markets emphasize dependencies through statutory control, secrecy, uniformity and conservatism. Greece's institutional setting is usually depicted as a fragile institutional environment with the topical market considered having a meagre legal regime, enforcement and transparency rules (Ballas et al., 1998).

Additionally, various authors (Ballas, 1994; Ballas et al. 1998; Baralexis, 2004) suggest that Greek firms rely on private deals to obtain funding, which reduces the informativeness of accounting reports. Tzovas (2006) states that high levels of discretion associated with a poor institutional setting and low level of monitoring creates the conditions for earnings management to materialize. Greece's institutional setting directs to the suspicion that managers can employ higher levels of judgment in the methods of corporate image management.

The Athens Stock Exchange (ASE) got listed among the developed markets in 2001 (Artikis et al. 2008) and at the end of 2006, 317 companies were listed; however, as of March 2010 the Greek Stock Market has been retained by FTSE on the Watch List for possible demotion to Advanced Emerging status (FTSE, 2010); *'The Greek authorities have, in recent years, introduced a regime of regulatory development. However, while many of these changes reflect progress in bringing the Greek market in line with other developed markets, international investors have noted that these reforms are not yet fully reflected in market practice...'* (FTSE, p.1). Greece's complete incorporation into the EU buoyed the domestic investors to take on higher risk investments. There was a growth in the transaction volume and a dramatic rise in operating entities in the market complemented by a rise in the number of listed companies from 45 to 343. Since 2003 the ASE composite index was rising in a stable pace reaching a record high closing price of 5334.5 points in October 2008 (see Figure 1 below). However, due to the economic crisis the index fell sharply (by 68%) and especially after 2009 never reached again a closing price beyond 1,700 points as at the time of writing.

**Figure 1:** Athens Stock Exchange Indices

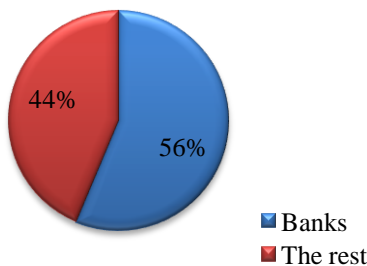


Source: Alpha Bank 2009

The recent economic slowdown, rising provisions and increasing pressures of improving capital adequacy, resulted in strict lending standards and a near ‘stop’ to the process of credit expansion (Deloitte, 2010).

The quality of the loan portfolios is the primary concern as of now. The financial crisis together with the downgrading of the credit rating of Greece is likely to deteriorate the quality of loan portfolio. The total number of banks in the Greek region is 66 (Bank of Greece, 2010), and 15 out of those institutions were listed on the ASE (Hellenic Bank Association, 2010). 40% of the companies consisting the FTSE/Athex 20 are banks. More specifically their participation on the index reaches 56% as indicated in figure 2 (ASE, 2010). By observing the examined period of this research is obvious that the banking sector index outperformed ASE General Index during the period 2004 to 2007. International analysts gave favourable recommendations for most of Greek banks during this period (Deloitte, 2007).

**Figure 2**



Source: ASE, 2010

Nevertheless, the extraordinary performance of the banking sector during the period 2004-2008 was reversed in the year 2009 following strong pressure on the Banking Index because of the economic turmoil; leading to a sharp deterioration in the “FTSE ATHEX Bank Index” starting from January 2008 (figure 3) (Deloitte, 2010).

**Figure 2:** General and Banking Indices 2005 – 2010



Source: Naftemporiki, 2010

Holding nearly three quarters of the total invested assets banks are among the leaders of ASE (Artikis et al., 2008); and Greece’s simultaneous adoption and implementation of IAS and Basle II provides a unique opportunity to examine how the nation's structural terrain shapes the implementation of disclosure requirements.

### 3. Methodology and Sample

The analysis covers the disclosures of the financial statements of banks for the years ended 2005 and 2008. Evans and Taylor (1982) recommend in depth examination of published financial statements to measure the degree of disclosure because it allows for a more comprehensive picture of the implementation process. There are various methods utilised in the way that researchers decide to approach the subject so far. Woods and Marginson (2004), Linsley et al. (2006), Woods et al. (2009), have utilised content analysis as the main tool of research. Others, such as Reynolds’ et al. (2008) support their methodologies on a survey-based analysis. Other research studies utilise cross-section models in which each type of a disclosure index is regressed on proxy-related variables in order to detect the existence of a statistically significant relationship (Poshakwale and Courtis, 2005; Mohan, 2006). Other researchers have made an attempt on researching all accessible measures of disclosure

(e.g., Healy and Palepu, 2001; Beattie et al. 2004). Our study utilizes an approach similar Linsley's et al. (2006) and Wood's et al. (2009).

One noticeable fact is that many papers fill out each other thus creating continuity. Linsley et al. (2006) utilizes nine pairs of UK and Canadian banks based on their assets, while Woods et al. (2009) uses the top 25 banks of the world in terms of market capitalization. Wood's et al. (2009) provides an interesting cross-country research example in that it examines the annual reports of 25 banks in three different time intervals; "*start (2000), mid (2003) and end (2006)*" (p.11) trying to discover "*changes in disclosure practices over time*" (p.15); unlike Linsley's et al. (2006) paper where changes over time are not researched. In our case a combination of both is applied solely in the Greek region. The top 15 Greek banks are employed instead of bank pairs, where the banks are:

- (i) Paired with themselves in two different fiscal years (before IFRS and Basel II and after).
- (ii) Grouped into Big and Small for the same fiscal years

Another very important factor that varies greatly among the literature is the size of the sample and the geographical or regional context of it. Reynolds (2008) utilizes the 100 top banks for her research in order to have a global view on the subject; Woods et al. (2008; 2009) also use a worldwide but much smaller sample of 25 banks. KPMG (2009), narrows down the regional framework and concentrates only on sixteen European banks whereas Woods and Marginson (2004) narrow it down even more on both terms (regional and sample size), concentrating only on nine FTSE100 UK banks. Linsley et al. (2006) choose to compare nine pairs of similar size UK and Canadian banks in order to trace the differences in the banking risk disclosures between the two markets and isolate differences that are country-specific.

Textual analyses include thematic; meaning-oriented content analysis where the whole text is analysed. By using content analysis, we decompose information on a sentence-by-sentence basis so as to achieve greater informative content; the coder used in order to code and classify risk-related references is based not on words but fully articulate sentences, considered more reliable (Milne and Adler, 1999). This is in line with Hassan and Marston (2010) who claim that "*in-depth future research is needed to update these results because fast and continuous development in content analysis software and changes in the financial reporting environment have taken place since 1994*" (p.4).

No pairing of banks takes place, but instead the annual reports of the years 2008 and 2005 of the sample banks are compared and employed in order to draw conclusions regarding the effectiveness of Basel II (Pillar 3), in the Greek banking industry. Employing those two years makes it possible to understand whether or not Basel II was successful in fostering market discipline by pressing banks to disclose more information regarding the credit and interest rate risks they face and making them more transparent.

As with any research method, content analysis has an equal share of merits and demerits. While the advantages are that is a very transparent, non-reactive and flexible method which can be applied to many different kinds of unstructured information it can also be used for both qualitative and quantitative studies and is a great method for creating comparative analysis between samples. Also, it offers the opportunity to statistically analyze text which is crucial for our study. Equally though, content analysis can only be as good as the documents on which the practitioner works. It is also considered to be subject to increased error. This is the reason why a computer-assisted content analysis approach (GATE software) through the use of a coder is implied; computerization of a content analysis assists in error minimization.

### 3.1 Sample

The annual reports of 15 listed Greek banks in the ASE serve as the sample for the study. According to the Bank of Greece (BoG, 2009), the total amount of banks in the Greek region is 66 banks including co-operative banks, Greek banks and branches of foreign credit institutions; hence, our sample represents approximately 23% of the banking institutions in Greece. More specifically, the annual reports of the 15 sample banks for the years 2005 (before the implementation of Basel II in Greece) and 2008 (the first year of full implementation of Basel II in Greece) are collected from the filings that each institution preserves with the BoG<sup>2</sup>.

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<sup>2</sup> Some exceptions take place due to missing data. In the tests for market capitalization and book-to-market ratio for 2005, "TT Hellenic Postbank" and "Laiki Group" are excluded; they were not listed in the ASE at this point in time, meaning that their market capitalization and book-to-market could not be measured.

*Table I. Sample of Banks in Alphabetical Order*

	<b>Foundation Year</b>	<b>Year of Listing</b>	<b>Index Participation</b>	<b>Category</b>	<b>Total Assets*</b>
ATE Bank	1929	2001	FTSE/Athex 20	Big Cap	€28.03bn
Alpha Bank	1879	1925	FTSE/Athex 20	Big Cap	€64.94bn
Aspis Bank	1992	1998	FTSE/Athex 80	Med/Sm Cap	€2.61bn
Attica Bank	1925	1964	FTSE/Athex 80	Med/Sm Cap	€4.50bn
Bank of Cyprus	1989	1991	FTSE/Athex 20	Big Cap	€36.11bn
Bank of Greece	1928	1930	-	Med/Sm Cap	€70.92bn
Piraeus Bank	1916	1918	FTSE/Athex 20	Big Cap	€54.64bn
Eurobank EFG	1990	1999	FTSE/Athex 20	Big Cap	€81.96bn
Emporiki Bank	1907	1909	FTSE/Athex 20	Low Disp. & Sp. Feat.	€29.76bn
Geniki Bank	1937	1963	FTSE/Athex 80	Big Cap	€4.92bn
Marfin Egnatia Bank	1936	1991	-	Low Disp. & Sp. Feat.	€19.32bn
Marfin Popular Bank	1901	2007	FTSE/Athex 20	Big Cap	€38.35bn
National Bank of Greece	1841	1905	FTSE/Athex 20	Big Cap	€101.06bn
Proton Bank	2001	2005	FTSE/Athex 140	Big Cap	€1.96bn
TT Hellenic Postbank	2002	2006	FTSE/Athex 20	Big Cap	€14.70bn

\* For the year 2008

Big Cap = Big Capitalization

Med/Sm Cap = Medium and Small Capitalization

Low Disp. & Sp. Feat = Low Dispersion and Special Features

The sample is carefully structured in order to offer information before and after the implementation of Basel II for comparison purposes. During the design process of the sample, the choice between annual reports and quarterly reports had to be taken. Annual reports are chosen on comparability and relevance and reliability grounds mainly due to three reasons: (i) a considerable amount of both quantitative and qualitative information that is missing from the quarterly reports, (ii) a sizeable percentage of quarterly statements that are unaudited and (iii) not all sample banks offer quarterly reports of previous years<sup>3</sup>. The table above (Table I) provides an alphabetical list of the sample banks along with their year of listing, categorization of market capitalisation and total assets.

Source: ASE, 2010

### **3.2 Description of the Process – The Coding Grid**

The procedure followed is broken down in 4 stages with the aim of easing the degree of understandability to the reader. However, because there are no specific details presenting the way in which variables are taken under consideration during the design process, the coding grid which is employed in this research is redesigned from scratch. Figure 4 on the next page is a simple way to represent the method and idea on which the coding grid is built.

<sup>3</sup> Marfin Egnatia bank was created after the merger of Egnatia bank with Marfin Financial Group in 2007. It is treated as being the same bank in both financial years examined. The same applies to Marfin Popular bank (former Laiki Group). Additionally, the annual reports of Marfin Egnatia bank and Marfin Popular bank are utilized for 2008; whereas for 2005 the annual reports of Egnatia bank and Laiki group are employed.

**Figure 3:** Schematic of the Coding Design



The first step of the design process separates credit from interest rate risk. In each category only disclosures pointing directly on one of the two types of risk are included. More specifically, phrases like “negative economic and financial environment” are not included even if credit and interest rate risk are implied by the term financial.

In the second stage the separation of quantitative from qualitative disclosures takes place; for example, qualitative disclosures which reference or point out some quantitative data are included in the quantitative category<sup>4</sup>. It should be noted that the distinction among the two groups is on the new disclosure pools created on the first stage. Thirdly, after the first grouping of the disclosures the criteria under which the information is categorized into good/bad/neutral news are decided. In the good news category phrases with a positive meaning (i.e. ‘decrease of credit risk’ or ‘increased provisions against credit risk’) and positive management related phrases as well are contained. On the other hand, the opposite meanings go under the bad news category. The ‘neutral’ category contains phrases regarding the systems and policies that banks use or risk-related information which do fit neither the good nor the bad news categories.

The final and most challenging part contains the decision over which criteria the distinction of tense should be made. Since annual reports, essentially, represent a point in time, the decision not to use present tense is obvious. Additionally, under the past category, we include phrases referring to the past or even quantitative information such the quantity of provisions which have already been taken by the firm. On the other hand, under the future group - besides information or prediction

regarding the future - also fall general policies of the bank which were and will continue to be active in the future. Only in cases where is specified that a policy was initiated in the past year, exceptions are taken and go under the past type. Based on the above, 12 different coding classifications are created and shown in Table II below. In the definitions set, all phrases that specifically define each of the two types of risks are decided to be included.

**Table II.** Disclosure Coding Grid

	Credit Risk	Interest Rate Risk	Total
<i>Text disclosures sentence characteristics</i>	1	2	
Quantitative/good news/future	<b>A</b>		
Quantitative/bad news/future	<b>B</b>		
Quantitative/neutral news/future	<b>C</b>		
Qualitative/good news/future	<b>D</b>		
Qualitative/bad news/future	<b>E</b>		
Qualitative/neutral news/future	<b>F</b>		
Quantitative/good news/past	<b>G</b>		
Quantitative/bad news/past	<b>H</b>		
Quantitative/neutral news/past	<b>I</b>		
Qualitative/good news/past	<b>J</b>		
Qualitative/bad news/past	<b>K</b>		
Qualitative/neutral news/past	<b>L</b>		
Definitions	<b>M</b>		
<b>Total</b>			

A descriptive analysis of the coding results takes place before the statistical tests. The main statistical tests utilized in this study are non-parametric; Wilcoxon’s two-tailed test and Spearman’s correlation coefficient. All hypothesized relationships are tested at a 5% level of significance.

Two measures have been selected to represent the size of each institution, total assets and market capitalization. There are many other ways to measure and represent size like employee numbers or turnover; however there is no evidence to favor one over another (Hackson and Milne, 1996). For measuring relative profitability, two options were examined: the Return on Equity (ROE) and the Return on Assets (ROA), which is finally chosen due to its greater stability throughout various

<sup>4</sup> Table titles were also included in the quantitative category

capital structures. In order to measure the risk profile of the banks, book-to-market ratio is employed. This ratio is chosen based upon the Fama and French (1992) study and Linsley's et al. (2006) choice of the same ratio for the same purpose. The section that follows provides a descriptive analysis of the preliminary findings.

#### 4. Descriptive Analysis of Findings

Throughout the coding process, a total of 907 risk<sup>5</sup> sentences were identified in the sample of annual reports. From table III below, the category with the highest frequency of appearance is F – “qualitative / neutral news / future” (371 disclosures in total).

**Table III.** Number of risk sentence disclosures for the sample of banks

Text disclosures sentence characteristics	2008			2005			Total	
	Credit Risk	Interest Rate Risk	Total	Credit Risk	Interest Rate Risk	Total		
	1	2		1	2			
Quantitative/good news/future	A	0	0	0	0	0	0	
Quantitative/bad news/future	B	0	0	1	0	1	1	
Quantitative/neutral news/future	C	13	0	4	0	4	17	
Qualitative/good news/future	D	31	3	12	2	14	48	
Qualitative/bad news/future	E	5	0	3	0	3	8	
Qualitative/neutral news/future	F	164	62	115	30	145	371	
Quantitative/good news/past	G	6	0	1	0	1	7	
Quantitative/bad news/past	H	1	0	1	0	1	2	
Quantitative/neutral news/past	I	67	18	8	10	18	103	
Qualitative/good news/past	J	9	0	4	1	5	14	
Qualitative/bad news/past	K	6	0	5	0	5	11	
Qualitative/neutral news/past	L	137	39	74	25	99	275	
Definitions	M	18	13	13	6	19	50	
Total		457	135	592	241	74	315	907

The disclosures of category F mostly consist of clarifications and explanations of general risk management policy. Another point that highlights the preference towards such type of disclosures is the consistency of the results for both years. In the annual report of Alpha bank (2009) is stated ‘*The early detection of credit risk and the adoption of measures to address it are a key priority for Alpha Bank as well as distinct competitive advantage*’ (p.13). In the same report is also highlighted that ‘*Central to the measurement of credit risk are credit rating systems*’ (Alpha Bank, 2009, p.60). Statements and admissions of this type aim at restoring confidence in market participants that

banks are equipped with adequate risk monitoring systems. However, such kinds of disclosures do not provide any sort of specific actions or results regarding the management of the risk. It is likely that disclosures of such kind are favoured because while on the one hand they provide assurances to the user, on the other, they are not bound to any future promises. Promises that can prove costly, especially when the market monitoring mechanisms- which banks try to avoid due to fear of judgment – are highly capable of extending discipline when market players are caught out in isolation especially in a downturn. Another striking fact that emerges out of the results (table III) is the zero sum of category A – ‘quantitative/good news / future’ as well as the nearly-zero

<sup>5</sup> Credit risk and Interest Rate risk



disclosures made regarding ‘quantitative/bad news/future’. While it may indeed be difficult to quantify in detail future predictions banks may also avoid disclosing quantified future predictions for reasons exposed above. Categories I and K, contain neutral quantitative/qualitative information referring to past. Such results may also attest to the fact that banks also may try to avoid direct comparisons with past disclosures and past performance.

It can be implied that the disclosures made are based on scepticism and reservation. Greek banks seem to be reserved in disclosing more than what is deemed as the minimum information set necessary to alleviate fears on the one hand and avoid comparisons that could potentially extend to market discipline on the other. It also becomes clear from table IV below that, in general, Greek banks tend to disclose more qualitative information rather than quantitative.

While the Basel II framework aims at encouraging banks to improve their internal information systems and to distribute both qualitative and quantitative information in their annual financial reports, the results of table IV present an unequal distribution of disclosures. More specifically, the qualitative disclosures amount to 84.8 per cent whereas the corresponding quantitative proportion is only 15.2 per cent, indicating a big gap between them. The same pattern exists for both years examined, leading to the conclusion that on this aspect no improvement is achieved by the implementation of Basel II. Furthermore, adding to the above reasons regarding that trend is that, if the sizes of risks are disclosed then the reader would probably have a better perspective of reality.

It is quite possible that banks prefer qualitative information disclosure owing to the degree of ease for promoting their own perspective on the matter, but also because such type of information is not easily qualified; hence leaving an interpretation (subjective) to the reader. Moreover, it has been very well documented, that the proprietary costs for quantified risk information are higher due to the high sensitivity of quantified information (Garten, 1995; Admati and Pfleiderer, 2000; CEBS, 2008; Acharya et al., 2010; Asongu, 2010).

The proportion of quantitative/future disclosures in this research barely reaches 2 per cent<sup>6</sup> of the total and is mostly consisted of neutral references. This also indicates the reluctance of banks to disclose sensitive information. Due to quantitative risk information possessing greater value to qualitative,

this rule also applies to past and future disclosures. Future information is considered to have greater value compared to past and the reasoning for that follows the classic finance theory according to which, investors base their actions on future predictions. The results of the analysis are approximately 48 per cent past disclosures and 52 per cent future (table IV). Once more, within past and future disclosures, the neutrally pre-disposed disclosures account for approximately 90% of the risks disclosed; this also represents the biggest proportion of the future references and again mostly consists of general policy disclosures. Hence, the results indicate that future disclosures in reality are less than past ones.

More specifically, the disclosures examined were characterised by:

- (i) diversity on exposures disclosed
- (ii) diversity of statements regarding the impact of the crisis;
- (iii) generalism on the valuation of exposures affected by the market turmoil and their accounting; and
- (iv) variety regarding the presentations of disclosures.

What is also interesting is the fact that, in 2005, future disclosures were greater than the corresponding 2008 future disclosures on percentage terms; while also in 2005, past disclosures were also less compared to 2008 past disclosures. On the other hand, in 2008 the volume of past disclosures was marginally greater than future disclosures. The above results are an indication that Greek banks have reverted to defensive tactics. Having in mind the financial environment of the country and the credit-based system in which banks operate, it is safe to conclude – according to the expectations theory - that banks tend to disclose more future information when expecting good years ahead and less when they expect a worsening of the financial environment and by extension a worsening of a bank’s status.

The split among “good news / bad news / neutral news” disclosures favours once more the latter category. Neutral news is approximately 89 per cent, with good news reaching 8 per cent and bad news of approximately 3 per cent (table IV below). In both years examined, the gap between neutral disclosures and the other two categories is large; in both cases neutral news are preferred by directors because they indirectly promote confidence and reassurance without violating guarantees. However, in 2008 the proportion of bad news was less than in 2005.

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<sup>6</sup> 1.99%

**Table IV.** Summary of characteristics of risk disclosures (excluding definitions)

Characteristic	2008		2005			
	Total Number of disclosures	Proportion (%)	Total Number of Disclosures	Proportion (%)		
Quantitative disclosures	130	15.2	105	18.7	25	8.5
Qualitative disclosures	727	84.8	456	81.3	271	91.5
Past disclosures	412	48.1	283	50.5	129	43.6
Future disclosures	445	51.9	278	49.5	167	56.4
Good news disclosures	69	8.1	49	8.7	20	6.8
Bad news disclosures	22	2.6	12	2.1	10	3.4
Neutral disclosures	766	89.3	500	89.2	266	89.8

With regards to the good news proportion, the situation is reversed; it was lower in 2005 than in 2008. Taking into account the differing financial conditions in such years, banks were less hesitant in disclosing bad news in their annual reports due to the flourishing economic environment through a state of euphoria and confidence to investors; embedded is the belief that the markets are capable of ‘absorbing’ bad news. On the other hand, in a downturn, such as in year 2008, banks were slightly more ‘sanguine’ in disclosing good news and avoid bad news in order to reassure investors of the bank’s financial status; embedded is the belief that markets tend to be less forgiving during such times.

It was expected that the quantity of credit risk disclosures would be much bigger compared to interest rate risk disclosures. Credit risk disclosures are in total more than triple to interest rate risk ones. Disclosures for both categories of risk show great growth, in 2005 the total amount was 315 whereas in 2008 they reached 592, leading to a growth of approximately 88 per cent<sup>7</sup>. Credit risk disclosures grew, from 2005 to 2008, by almost 90 per cent<sup>8</sup> while at the same time interest rate risk disclosures grew by 82 per cent<sup>9</sup>. The results in the section above provide an initial indication showing that, in total, due to the implementation of Basel II accord Greek banks tend to indeed disclose more risk related information in their annual reports. It is not clear though, that such information is indeed materially useful. It is also not clear whether the quantity and

quality of information disclosed is owed to bank-specific indicators such as size and profitability or whether it is owed to market-wide factors and the collective regional structural domain. This is the aim of the section that follows.

#### 4.1 Hypotheses Testing

The Basel Committees’ target regarding risk disclosure, in Basel II, was to push banks towards more risk information disclosure in their annual reports; it is rational to posit that the 2008 annual reports will disclose more risk related information compared to those in 2005. Therefore the first set of hypotheses tests whether the implementation of Basel II resulted in making Greek banks disclose more risk related information.

**Hypothesis 1.1:** Banks in year 2008 will disclose a greater amount of risk-related information than in the year 2005.

**Hypothesis 1.2:** Banks in year 2008 will disclose a larger amount of credit risk information than in the year 2005.

**Hypothesis 1.3:** Banks in year 2008 will disclose a larger amount of interest rate risk information than in the year 2005.

The non-parametric Wilcoxon test has been applied in order to test the above hypotheses in order to investigate whether the banks’ annual reports in year 2008 disclose significantly different quantities of total risk, credit risk and interest rate risk compared to the year 2005. The test proved that at the 5 per cent level of significance, total risk<sup>10</sup> disclosures are significantly different

<sup>7</sup> 87.94%

<sup>8</sup> 89.63%

<sup>9</sup> 82.43%

<sup>10</sup> Credit risk and Interest Rate risk

between 2005 and 2008 (table V below). It is after the implementation of Basel II where an increase in risk disclosures is observed ( $p = 0.012$ ). After testing hypotheses 1.2 and 1.3 a paradox arises. Interest rate risk disclosures are significantly greater ( $p = 0.011$ ) but credit risk disclosures are not. Although the actual amount of credit risk disclosures is greater in 2008 (table III), this change is not statistically significant. It should also be noted that 13 out of 15 banks had a greater amount of credit risk disclosures in 2008 than in 2005. Nevertheless, this result raises issues regarding the effectiveness of Basel II. The question that rises at this point is if the accord managed to have a crucial impact on important areas of banking in Greece or just on issues of lower significance for the industry<sup>11</sup>; or if the country's regulatory system selectively chooses which aspects of international regulation to harmonise and which not.

**Table V.** Significance level for comparisons between 2005 and 2008 (Wilcoxon test)

<i>Parameter</i>	<i>P-value*</i>
<i>Total risk</i>	0.012
<i>Credit risk</i>	0.113
<i>Interest rate risk</i>	0.011
<i>Total assets</i>	0.001
<i>Market capitalization</i>	0.002
<i>Return on assets</i>	0.363
<i>Book to market ratio</i>	0.001

Further tests have been conducted; paired comparisons for the years 2005 and 2008, of Total Assets, Market Capitalization, ROA, and Book to Market ratio in order to check whether those variables increased over time. The results showed that, banks in 2008 had significantly greater total assets ( $p = 0.001$ ), lower market capitalization ( $p=0.002$ ), and higher book to market ratios ( $p = 0.001$ ) compared to the year 2005. Their returns on assets however, did not change significantly. An important fact is that 9 out of 15 banks present a decrease in their ROA for the fiscal year 2008 compared to 2005. Such a result has occurred due to the crisis in 2008 that pushed banks to increase their provisions against risks thus resulting in reduced returns.

Prior studies on the field of disclosure, (i.e. Ahmed and Courtis, 1999), have discovered a positive association between company size and disclosure. Linsley et al. (2006) have also found that there is a positive association between company size and risk disclosure levels in the annual reports of

Canadian and UK banks. We also test for this association in the Greek banking sector. The hypotheses to be tested are:

**Hypothesis 2.1:** A positive association exists between the size of a bank and the total amount of risk disclosures.

**Hypothesis 2.2:** A positive association exists between the size of a bank and the total amount of credit risk disclosures.

**Hypothesis 2.3:** A positive association exists between the size of a bank and the total amount of interest rate risk disclosures.

In order to test the above hypotheses (i.e. the association level among the number of risk disclosures and the variables of size and profitability), Spearman's rho is calculated at a 5 per cent level of significance. Table VI that follows provides for a preliminary summary of risk disclosures identified for the sample of banks. Tables VII and VIII following immediately provide the results of the tests.

<sup>11</sup> The 'lower' significance implied here for interest rate risk relates to such type of risks being isolated and managed separately

**Table VI. Summary of disclosures for individual banks**

Banks	2008			2005		
	Total risk disclosures	Credit Risk	Interest Rate Risk	Total risk disclosures	Credit Risk	Interest Rate Risk
ATE bank	7	5	2	11	9	2
Alpha bank	42	37	5	8	6	2
Aspis bank	8	8	0	3	3	0
Attica bank	67	42	25	25	16	9
Bank of Cyprus	55	48	7	37	26	11
Bank of Greece	11	11	0	69	65	4
Piraeus bank	29	24	5	8	7	1
EFG Eurobank	47	38	9	36	28	8
Emporiki bank	15	15	0	11	7	4
Geniki bank	42	28	14	4	3	1
Marfin Egnatia bank	86	61	25	14	11	3
Marfin Popular bank	60	41	19	25	16	9
National Bank of Greece	26	18	8	15	8	7
Proton bank	56	47	9	34	29	5
TT Hellenic Postbank	41	34	7	15	7	8
Total	592	457	135	315	241	74

\* The banks "TT Hellenic Postbank" and "Marfin Popular Bank" are not included in the analysis

**Table VII. Spearman Correlation test results Total Assets - Disclosures**

Total Assets		2005	2008
Credit Risk	Spearman Correlation	0.102	-0.164
	p-value	0.717	0.558
	N	15	15
Interest Rate Risk	Spearman Correlation	0.104	-0.192
	p-value	0.712	0.492
	N	15	15
Total Risk	Spearman Correlation	0.197	-0.189
	p-value	0.481	0.499
	N	15	15

**Table VIII. Spearman Correlation test results for Market Cap. - Disclosures**

Market capitalization		2005	2008
Credit Risk	Spearman Correlation	-0.036	-0.082
	p-value	0.907	0.771
	N	13 *	15
Interest Rate Risk	Spearman Correlation	0.196	-0.122
	p-value	0.521	0.664
	N	13 *	15
Total Risk	Spearman Correlation	0.099	-0.147
	p-value	0.747	0.602
	N	13 *	15

It can be seen from tables VII and VIII to the left, that the two variables<sup>12</sup> chosen to represent the size of the institutions do not correlate with the amount of risk disclosures. No significant correlation is observed between either credit risk, interest rate risk or/and their total with total assets and market capitalization for either years (2005 and 2008). This result goes against earlier studies (for example, Botossan, 1997; Ahmed and Courtis, 1999; Street and Bryant, 2000; Camfferman and Cook, 2002; Naser et al. 2002; Ali, Ahmed, & Henry, 2004; Al Saeed, 2006; Hassan, et al. 2006; and Mangena et al. 2007) which support that a size-disclosure relationship does exist. Furthermore, Woods et al. (2009) also discovered in their research that there is no association among the bank size and the quantity of disclosures. The results show that there is no quasi-norm related to size, which Greek banks follow, by which bigger institutions should disclose more information. Arriving at the link between profitability and disclosure, this has been investigated in the past by Ahmed and Courtis (1999) but the results were not adequate to prove such an association. Linsley et al. (2006) discovered that there is no association connecting profitability and quantity of bank risk disclosures. The same research points out that it is logical to conclude that profitability results from good risk management thus the more profitable the bank the more pleased to disclose more information regarding its risks and risk management.

This theory is examined based on the hypotheses below:

<sup>12</sup> Total Assets and Market Capitalization

**Hypothesis 3.1:** A positive association exists between the relative profitability of a bank and the total amount of risk disclosures.

**Hypothesis 3.2:** A positive association exists between the relative profitability of a bank and the total amount of credit risk disclosures.

**Hypothesis 3.3:** A positive association exists between the relative profitability of a bank and the total amount of interest rate risk disclosures.

According to the results of Spearman's test (table IX below) there is no significant association between profitability and the quantity disclosures of either credit risk, interest rate risk or their total for any of the examined years. The most profitable firms can potentially be reluctant to disclose much of their risk related information which is considered to be proprietary in fear that their competitors will try to copy them to their advantage. For example, information regarding a new service improvement or innovation divulged by one bank may also be used to the gain of its rivals. This has also been documented through Verrecchia, 1983; Dye, 1986; Darrough and Stoughton, 1990; Wagenhofer, 1990. In addition, included in the costs of disclosure are the costs of assembly and distribution; the costs of accountants; the costs of the audits. Lawsuit costs may also be invited if a bank is prosecuted owing to its disclosure if the information provided turns out to be invalid. It follows that an internal decision to provide more (than the minimum necessary) information to the public can be based on a cost-benefit analysis. This has also been documented in Skinner, 1994; Healy and Palepu, 1993; and Botosan, 2000).

**Table IX.** Spearman Correlation test results for Return on Assets - Disclosures

Return on assets		2005	2008
Credit Risk	Spearman Correlation	0.106	0.136
	p-value	0.707	0.63
	N	15	15
Interest Rate Risk	Spearman Correlation	-0.082	0.117
	p-value	0.772	0.678
	N	15	15
Total Risk	Spearman Correlation	0.035	0.121
	p-value	0.901	0.666
	N	15	15

Past studies examining a possible association of the risk profile of a bank and the amount of risk disclosures, discovered that no such connection exists (Linsley et al, 2006). However, there is no previous research regarding such an association in the Greek region. The rationale that such a relationship might exist lies on the fact that the more risky a bank is, the more incentive might have to disclose risk related information in order to reassure the market regarding the safety of its business. The hypotheses to be tested are:

**Hypothesis 4.1:** A positive association exists between levels of risk of Greek banks and the total amount of risk disclosures.

**Hypothesis 4.2:** A positive association exists between levels of risk of the Greek banks and the total amount of credit risk disclosures.

**Hypothesis 4.3:** A positive association exists between levels of risk of the Greek banks and the total amount of interest rate risk disclosures.

Table X on the next page also reveals that no significant correlation exists between the disclosure amounts of credit risk, interest rate risk or their total with the book-to-market ratio which is chosen to represent the risk profile of each bank. Riskier banks do not try to offer more information to the marketplace in order to reassure the participants that their risk is manageable and under control by the risk management division. It is quite possible that riskier banks try to keep a low profile by avoiding a display of much risk related information to the market participants.

This may also be referred to as 'disclosure position' first quoted by Gibbins et al. (1990) whereby depending on whether management plays an active or passive role in controlling information a dual dimension of disclosure emerges: ritualism and opportunism. The former relates to blind devotion to predefined disclosure standards while the later relates to the propensity of directors to hunt for company explicit benefits in the disclosure (or non-disclosure) of financial information. Psychology theory may also explain the use of 'suitable' ascriptions or identity-directed propensities which are based on the motivational rationalization for this type of organizational behaviour. The results are also in line with prior research supporting the retrospective rationality and esteem-defensive behaviour, detected especially in circumstances of adverse economic conditions (see for example, Bettman & Weitz, 1983; Staw, 1980).

**Table X. Spearman Correlation test results for Book-to-Market - Disclosures**

Book-to-market ratio		2005	2008
Credit Risk	Spearman Correlation	0.213	0.231
	p-value	0.485	0.408
	N	13 *	15
Interest Rate Risk	Spearman Correlation	-	0.215
	p-value	0.629	0.441
	N	13 *	15
Total Risk	Spearman Correlation	0.13	0.259
	p-value	0.672	0.35
	N	13 *	15

\* The banks "TT Hellenic Postbank" and "Marfin Popular Bank" are not included in the analysis

Linsley et al. (2006) discovered that a positive association, between the quantity of risk disclosures and definitions related to risk, exists in the annual reports of Canadian and UK banks. However, this rationale is based on inter-cultural discrepancies. There is no prior evidence regarding such a relation in the annual reports of Greek banks; the existence of such a relationship is also examined. According to such research, banks that provide greater amount of risk disclosures have the incentive to provide more definitions as well, in order to avoid misunderstandings by the readers. Thus, the more risk disclosures an annual report contains the bigger the possibility for misunderstandings or misinterpretations. The hypothesis to be tested is:

**Hypothesis 5.1:** A positive association exists between the quantity of risk definitions disclosed and the total quantity of risk disclosures.

The test showed a significant relationship between the number of definition disclosures and the number total risk<sup>13</sup> disclosures (definitions excluded). As presented in table XI a significant positive relationship is observed for both years 2005 and 2008 (p=0.018 and p=0.008 respectively).

Clatworthy and Jones (2003) assert that such behaviour can be attributed to informational explanations. Banks with a greater amount of risk disclosures also chose to disclose more risk definitions. Accounting narratives are difficult or very difficult to read for the less experienced reader and such a result might spring from the fact that much of the information provided to the reader is highly technical and prone to

misinterpretations which bank directors wish to be avoided. It is possible that banks voluntarily disclosing more content-related, 'qualitative' risk information act in such a way either based on bounded rationality grounds or on attributional principles of discounting and augmentation. Hence, it can be implied that they also disclose more definitions to 'make it easier' for the reader and guide him towards the *correct* (intended) meaning. These results are also consistent with prior research in the area (see Aerts, 2001; Bettman & Weitz, 1983; Tsang, 2002).

**Table XI. Spearman Correlation test results for Definitions - Disclosures**

Total Risk Disclosures (excluding definitions)		2005	2008
Definitions	Spearman Correlation	0.601	0.658
	p-value	0.018	0.008
	N	15	15

## 5. Conclusions and Discussion

This study contributes to the literature by providing results produced in a different institutional setting. This is based on Aerts' (2005) suggestions that the disclosure and explanation patterns displayed by companies from different countries are subject to cultural influences. The findings of the research show that, indeed, the amount of disclosures is statistically greater after Basel II. But, is the implementation the real cause of this increase? The Greek banking sector and the economy as a whole, after 2003 and until the first half of 2008 was experiencing great growth in terms of GDP and growth ratios. This great growth from 2005 to 2008 is reflected on the significantly greater total assets and higher book-to-market ratios of Greek banks. The theoretical as well as the empirical case for transparency as an enhancer of banking system robustness is not without controversy. It is likely that the risk disclosure policies and techniques just followed the general trend of the time and as they got modernized, they resulted in increased quantity.

However, even if that is the case, it seems that still Basel II set the new standards and affected most of the EU in terms of banking regulation and supervision. Therefore, the most probable scenario is that indeed Basel II, one way or another, managed to increase risk disclosure in the Greek banking sector.

<sup>13</sup> Credit risk and Interest Rate risk

Disclosure, as a variable on its own, is judged to be latent; therefore, it can be indirectly observed through the values of a pragmatic variable. The coding pool was proven to be mostly crowded by general statements of risk management policy and methods which banks employ, rather than more specific and useful information to the reader. Another observation, regarding the coding results, is that very little quantitative risk information is disclosed and most of the disclosures incorporate past information<sup>14</sup>.

It seems like Greece and its banking system has not yet reached the higher standards of the most developed countries on the field of disclosure, such as the UK. In addition, the fact that the Greek financial crisis is mostly a result of bad management and corruption indicates the possibility of loose supervision in the Greek banking sector. Larger banks, potentially through their size and positioning apply market pressure to smaller competitors resulting in low quantity of disclosures and transparency issues in the industry; in the words of Bliss and Flannery (2002) lack of discipline in the presence of market monitoring is likely due to agency problems between bank management and market members and is additionally aggravated by limited regulation and supervision. Greece and more specifically the Greek public sector for many years now have been listed among the most corrupt of the EU<sup>15</sup>. This problem is probably much deeper and should be approached sociologically also since it has its roots in the culture and modern history of Greece. An investigation on the issue of bad management, corruption and transparency would be very interesting and enlightening regarding the impact and causes of the Greek financial crisis.

Five sets of hypotheses have been established and tested, three of which were not proven to apply. Furthermore, the rejected hypotheses put forward that there is no existing statistically significant correlation between the level of credit risk, interest rate risk or their sum and bank size, profitability or the risk profile of the firm. On the other hand, it is statistically proven that a positive association among the total amount of disclosures and the quantity of disclosed definitions exist. It has also been confirmed that the total risk and interest rate risk disclosures were statistically greater in 2008 compared to 2005.

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<sup>14</sup> In absolute numbers future information is greater but as noted above in reality past information is greater because a big part of the future category consists of general statements

<sup>15</sup> Greece is ranked 71<sup>st</sup> in the CPI index 2009 (Transparency International, 2010), classifying it as the most corrupt in the EU

Another thing that draws direct attention is the non-existing relationship between the size of an institution and the amount of risk disclosures. These results cannot be characterised as fully conclusive or final due to the different parameters and variables taken in each research. This study took place in the Greek region whereas other research has concentrated in fully developed financial markets such as the U.S, the Netherlands, Spain and the UK region. Nevertheless, it sheds some light in the disclosure domain by asserting that it is highly possible that different regions – and hence cultural factors therein - do not share the same attitude towards risk disclosure and transparency.

A further observation is that no quasi-norm relationship exists (or even existed before the implementation of Basel II) in the way Greek banks disclose their risk-related information. Such quasi-norms might have existed or currently exist in other regions but as highlighted above, it is also quite possible that Basel II eliminated them by creating a framework under which all institutions are treated equally and is not up to them to decide whether or not to disclose more; hence, a level-playing field for easily comparative disclosures among the institutions is created. Further research in this area, in the meta-Basel and meta-IFRS era, can shed further light as to whether Basle has indeed gradually achieved the intended outcomes. Furthermore, another explanation regarding the non-existence of quasi-norms might be proprietary costs and market discipline considerations. Bigger, more profitable or riskier banks do not disclose more than the minimum necessary – especially in turbulent times – providing an ‘example’ to smaller, less profitable or less risky banks to follow the same strategy, thus through herding behaviour a vicious cycle is recreated.

This study also discovers that a positive correlation between the quantity of definitions and the total amount of risk related disclosures exists. Banks that disclose more risk information in the annual reports seem more eager to disclose more definitions as well, in order to avoid misinterpretations of such disclosures. However, this could also be a coincidence; for example, as Woods et al. (2009) discovered, size and quantity of disclosures do not correlate; but the lengthier the report the more disclosures it contains. Following the same line of thinking definitions might just be growing in number simply because disclosures become greater. Further research is also needed in order to reach a solid conclusion. Many inadequacies still need to be addressed, which is obvious by the general non-transparent Greek financial sector environment. Certain problematic areas highlighted through this

research are in need of attention; firstly, the lack of quantitative information needs to be reversed and more quantitative information to be disclosed; secondly, since future information is more valuable to investors compared to past data, the amount of future risk information should also be raised; thirdly, another important issue that also needs to be addressed is whether the quarterly reports should also be regulated to the extent of being able to grasp the continuous changing nature of risks.

It is also necessary to highlight some limitations that this research has faced. Not the whole spectrum of risks was researched. The variables chosen to represent size, profitability and risk profile might also not be necessarily the desired optimum. Such limitations indeed require further research on the field. There is also a requirement to research the variables that influence the extent of disclosure contained by culture. Variables in developed markets vary to those in developing (advanced-emerging) markets. Research also calls for a greater consideration given to accounting as it is exercised among diverse markets; as this paper and other preceding studies have revealed there are important disparities in accounting disclosures among national markets. This study focuses on listed banks in the Athens Stock Exchange and financial services research is limited with the Greek domain; the research on variables that shape the extent of disclosure in the Greek banking market is still at an infancy level. Further research must endeavour not only at increasing the sample of financial institutions being investigated but also researching them across time. Hence, a final limitation of this study is the relatively limited sample and time dimensions, which may possibly impinge on the overall generalisability of the obtained findings.

Despite the existence of contradictory analyses - past and contemporary - there is a widespread consent that transparency while not a complete antidote against systemic volatility in financial systems internationally holds a considerable role in fostering financial stability.

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