EXPLORING ENVIRONMENTAL DISCLOSURE IN BANKS. EVIDENCE FROM THE EURO AREA

***Abstract**: Environmental issues have been growing in importance over the years among scholars and practitioners. In particular, environmental considerations are becoming an important facet both in the sustainability engagement and communication process of banks. Several key changes are occurring in the regulation and supervision of banking (and financial) systems, and banks have come to realize that banking operations, in particular lending, affect and are affected by environment issues.*

This work explores and compares the environmental disclosure of Global Systemically Important Banks (G-SIBs) headquartered in the Euro area by analysing environmental risk assessment and monitoring issue through a multiple case study approach. The contribution of the work is twofold: on the one hand, the research provides better knowledge of the relationship between credit risk management process and environmental disclosure, and on the other hand, it provides some thoughtful insights, and gives directions and encouragement for future research.

***Keywords:** Environmental Disclosure; Environmental Credit Risk Management; Case Studies*

Introduction

Environmental issues have been growing in importance over the years among scholars and practitioners. Currently, there is agreement about that the concept of sustainable development, which is presented as the intersection between the environment, society and the economy, which had been conceived in the past century as separate although connected entities (Giddings et al., 2002). According to Jacobs and Mazzucato (2016), throughout the history of capitalism, economic growth has been accompanied by environmental damage. Above all, environmental considerations are becoming an important facet both in the sustainability engagement and communication process of banks. As noted by Mengze and Wei (2016, p.159), '*for most banks the primary basis for sustainable finance is incorporating environmental consideration into their bank lending products and services such as lending, project finance, etc.*'.

According to Weber et al. (2008), the literature indicates that most banks consider environmental risks as part of the credit appraisal process, and detailed guidelines for integrating environmental assessment into the credit risk assessment have been published (IFC 1998). Since the 1990s, environmental legislation has increased, and many banks have developed risk assessment procedures to offset potential liability for environmental damage caused by their borrowers and developed many corporate social responsibility and risk agendas (Coulson and O'Sullivan, 2013). Banks have come to realize that banking operations, in particular lending, affect and are affected by the environment and that consequently they might have an important role in helping to raise environmental standards (Thompson, 1998; Emtairah et al., 2005; Mengze and Wei, 2015; Weber et al., 2015). Weber et al. (2015, p. 2) underline that some banks apply sustainability criteria in their lending business to manage their risks as well as to improve their reputation (Nandy and Lodh, 2012). Several examples exist of banks that have improved their proactive environmental engagement (Weber, 2012).

From a theoretical viewpoint, a few works focus on environmental issues in the operation of banks and analyse how environmental risk can be integrated into their credit risk management process. As previously mentioned, although there is a high quality of extant research, this stream of research delves into the largely unexplored terrain, and further investigations are required. Particularly, relatively few studies focus on environmental risk management and reporting in the banking industry, and no studies focusing on banks located in the Euro area have been done. Despite the interest shown by the financial sector towards Corporate Social Responsibility (CSR) issues and sustainability/environmental risks related to the credit risk management criteria adopted, only a few studies focus on sustainability report disclosure in the banking sector (Carnevale and Mazzuca, 2014). Moving from these considerations, the main purpose of this paper is to analyse the level and quality of the environmental risk disclosure in the European Union, with a focus on the Euro area level: more in detail, a qualitative explorative analysis focused on the environment, corporate social and sustainability reports published during the last five years by a sample of eight banks enclosed in the Global Systemically Important Banks (G-SIBs). Given the cross-border repercussions that G-SIBs could potentially have on the financial institutions in many countries and potentially on the global economy at large, the investigation of how environmental issues are perceived, managed and disclosed by these banks is particularly relevant.

To the best of the author's knowledge, there has been no single research conducted in the Euro area that explores and compares the bank sustainability reports, analysing environmental risk assessment and monitoring issues. In this way, this work realizes an explorative and original picture of the phenomenon under study, using a multiple case study methodology that investigates a contemporary phenomenon within its real-life context (Yin, 2013).

The contribution of the work is twofold: on the one hand, it provides better knowledge of the relationship between credit risk management process and environmental risk, and on the other hand, it offers several suggestions to banks and regulators with regard to the ways to disclose information about environmental risks.

The remainder of the work is organized as follows: the next section proposes a literature review regarding the environmental credit risk management (ECRM) in banks and disclosure practices. Then, Section 3 explains methodology and characteristics of the sample, while highlighting the main peculiarities of G-SIBs headquartered in the Euro area. In Section 4, the case studies are explored in depth by stressing the features and findings and assessing the importance of factors of environmental credit risk management and reporting disclosures. The final section concludes, discusses the limitations of this exploratory study and points to future lines of research.

Theoretical frames

The analysis of previous works revealed that there are two major trends in the literature relating to sustainability and environment in the banking industry. The first strand analyses the relevance of sustainability and environment issues in bank's disclosure (Campbell and Slack, 2011; Carnevale and Mazzuca, 2014), and the second studies how sustainability criteria are integrated into risk management models and lending practices (Thompson and Cowton 2004; Weber et al., 2010; Weber, 2012; Weber and Banks 2012; Weber et al. 2015). At the same time, a further aspect that needs to be considered is that since the 1990s, environmental legislation has increased, and many banks have developed more sophisticated risk assessment procedures and corporate social responsibility and risk agendas (Coulson and O'Sullivan 2013). The sections below provide an overview of these major academic literature strands.

The relations among environmental disclosure, environmental performance, and firm performance

After the financial crisis, banks have changed their approach to CSR (Scholtens, 2006) because they are more aware of the risks to their reputations (Thompson and Cowton, 2004; Carnevale and Mazzuca, 2013). CSR reporting can positively affect the stakeholders' perceptions of firm performance, value, risk, profitability, share price and cost of capital (Gray et al., 1995b; Scholtens, 2008; Cormier et al., 2011; Jizi et al., 2014). Miles and Covin (2000) examine the relationship between environmental performance, reputation and financial performance by concluding that being a good environmental steward provides firms with a reputational advantage that leads to enhancing the financial performance. Similarly, Konar and Cohen (2001) highlight that poor environmental performance has significant negative effects on reputation. By analysing the interrelations among environmental disclosure, environmental performance, and economic performance, Al-Tuwaijri et al. (2004) highlight a positive relationship and that "good" environmental performance is significantly associated with 'good' economic performance. Cormier and Magnan (2007) investigate the impact of environmental reporting on the relationship between a firm's earnings and its stock market value. Their results highlight that the interaction between environmental reporting, financial statement information and firm stock market value is conditioned by the reporting context of firms. Despite the growing number of works, the debate about the relationship between environmental performance and firm performance is still unresolved, and mixed results have been found (Clarkson et al., 2008; Elsayed and Paton, 2005; Lee et al., 2014; Nor et al., 2016). With regard to the role of disclosure, it is important to note that the scale or extent of Corporate Environmental Responsibility (CER) is strictly related with firm-specific factors such as firm size, ownership, legal context, industry and media exposure (Barbu et al., 2014; D'amico et al., 2016). During recent years, many theoretical attempts have been made to explain how and why companies voluntarily disclose CSR information (Dowling and Pfeffer, 1975; Gray et al. 1995b; Gamerschlag et al., 2011). More specifically, Aerts et al. (2006) highlight that according to institutional theory, firms respond to contextual pressures by following a generally accepted way of doing business to appear legitimate to investors and stakeholders. CSR disclosure can be defined as the set of information that a company discloses about 'its environmental impact and its relationship with its stakeholders by means of relevant communication channels' (Campbell, 2004; Gray et al., 2001; Gamerschlag et al., 2011). As outlined by Aerts et al. (2006) and in contrast to financial reporting, CER is industry specific, voluntary and discretionary, and many stakeholders are interested in CER (e.g., regulators, governments, community groups). CER can be viewed as an outcome of management's assessment of the economic costs and benefits to be derived from additional disclosure (Cormier and Magnan, 1999; Cormier and Magnan, 2003). In particular, Cormier and Magnan (2003) highlight that the environmental reporting strategy is determined by: (i) benefits from a reduction in information asymmetry and in overall information gathering costs to be assumed by investors (information costs); (ii) costs resulting from disclosure of proprietary information; (iii) environmental media visibility (p.47). Only a few studies have explored the sustainability disclosure status in the banking sector (Khan et al., 2009; Khan, 2010; Nobanee and Ellili, 2016). Khan et al. (2009) investigated the CSR reporting of 20 Bangladeshi commercial banks by showing that most of the banks disclose more qualitative information than quantitative.

Environmental risk and credit risk management

Environmental and sustainability issues have experienced great interest in response to the financial crisis and recent scandals caused by socially and environmentally irresponsible behaviour (Fazzini and Del Maso, 2016). Researchers explored environmental credit risk management in banks, focusing on: 1) how sustainability issues are integrated into credit risk assessment procedures in commercial lending (Thompson and Cowton, 2004; Weber et al., 2010; Weber, 2012; Weber and Banks 2012); 2) positive relationship between sustainability performance and financial performance (Weber, 2016), 3) the potential reputational damage arising from environment-related issues (Campbell and Slack, 2011), 4) the relevance of the environmental risk in lending decisions (Thompson and Cowton, 2004; Weber, 2012; Weber, et al. 2015), and 5) the linkages between systemic environmental risk and banking sector stability (Alexander, 2014). Many works develop a quantitative methodological approach to explore how banks integrate sustainability criteria in credit risk assessment in German and Swiss banks (Weber et al., 2010), Canadian banks (Weber, 2012), Bangladeshi banks (Weber, et al. 2015), and Chinese banks (Weber, 2016), while a few studies propose qualitative analysis to explore the phenomena (Weber, 2012) or to compare the recent practices adopted by banks located in different geographical areas.

Environmental risks still have a significant influence on the financial risk of credit and investment portfolios (Zeidan et al., 2015; Weber, 2016), and many banks have integrated environmental credit risk assessment procedures (Weber, 2012). The integration of sustainability criteria into credit risk management processes reveals positive effects, and the integration of sustainability indicators reveals a better credit risk prediction (Weber et al., 2010; Weber, 2015). Thompson and Cowton (2004) examined the extent to which UK banks incorporated environmental considerations into their lending decisions. Labatt and White (2003) highlight that environmental risk evaluation process enables a bank to judge whether the client is capable of managing the environmental risk in a way that limits the bank’s exposure and that there are three main levels of due diligence with respect to risk identification and appraisal, from desktop reviews through internal research to the use of external expertise. Thompson (1998) recognized the link between environmental risk and its impact on banks' loan portfolios. Many banks documented these risks and the potential reputational damage (Campbell and Slack, 2011). Ganzi and Tanner (1997) reveal that at least half of the banks in North America and Europe have some form of assessment of environmental factors built into their credit approval for commercial loans. Labatt and White (2003) highlight that risk control and risk transfer are further components of the bank’s risk management procedure. In this sense, risk control pertains to both financial and image risk on the part of banks while risk transfer is most often associated with insurance and where quantifiable risk will be borne by the insurer. Thompson and Cowton (2004) show that - from the lender's point of view - environmental risk has three major dimensions: direct risk, indirect risk and reputational risk. Banks regularly perform initial assessments of borrowers’ risk of exposure to environmental risks, and the techniques used can involve requiring borrowers to have third party audits and to establish trust funds to cover compliance costs (Aintablian et al., 2007). Moreover, from a risk management perspective, a firm’s beta is a measure of the riskiness of its stock returns compared to the returns of the market as a whole. In this sense, much research indicates that firms that improved environmental management systems and better environmental performance show a lowering of their betas (Feldman et al., 1996), and consequently, these firms would be perceived to add less risk to a diversified portfolio than before, and thus to be awarded a lower cost of equity (Labatt and White, 2003, p. 39).

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CSR practices and the normative environment

Environmental risk influences the counterparty risk, and therefore, banks affect sustainable development directly – through their "day to day" operational activities (Iraldo et al., 2011) - and indirectly, through the products and services they offer (Thompson, 1998; Case, 1999; Weber, 2012). In this perspective, it is clear that some financial regulators - for example, in countries such as Canada or China - and several international organizations and agencies have addressed the connection between sustainable development, environmental risks and banking sector efficiency and stability (Weber and Feltmate, 2016), but it is only after the crisis of 2007-08 that the reform process of banking regulation has had to consider the aim of generating *'sustainable and balanced global growth'* (G20 Summit Leaders' Statement, 2009). Several initiatives worldwide are addressing this issue. In 2014, the United Nations Environment Programme launched an Inquiry into the alignment of the global financial system with long-term, sustainable development. The Basel II Framework (with Pillar II and III) has introduced an implementation of the credit risk measurement and management, as well as a major disclosure of key information of banks' risk profile, and further by encouraging market discipline (Chernobai et al., 2008). An interesting report done by Alexander (2014) focuses on the implementation of Basel III and financial stability risks associated with systemic environmental risks, by analysing the measures taken to modulate the prudential regulations that are applied to banks according to the environmental risk. According to this work, the regulation does not affect it, although there is evidence of a group of countries (including Brazil, China and Peru) along with their banking industries that have adopted regulatory and governance practices to address systemic environmental risks. The work also notes that the Basel Committee should learn more from the experiences and consider reforms to the Pillar 2 (Supervisory Review framework) and the Pillar 3 (Market Discipline framework) that would involve recognizing systemic environmental risks as risks that potentially threaten banking stability.

From a national point of view, since 2010, the Canadian Securities Administrators (CSA) has provided new guidance on disclosure requirements relating to environmental matters under securities legislation. This applies to all Canadian and foreign 'reporting issuers', including all companies listed on Canadian stock exchanges. European banks were not exposed to the same liabilities as their US and Canadian counterparts and thus tended to focus more on the development of new environmental products than on risk assessment (Labatt and White, 2003). Corporate Social Responsibility is becoming an increasingly important element on national and transnational policy agendas (Williamson et al., 2014). In this sense, many countries such as China (Weber, 2014; Weber, 2016) and Bangladesh (Khan, 2010; Weber et al., 2015; Islam and Chowdhury, 2016; Masud et al., 2016) are paying great attention to the topic of environmental responsibility and of environmental risk. With regard to the EU area, in 2001, France became the first EU Member State to force listed companies to report on how they tackle social and environmental responsibility (Williamson, et al. 2014; Chelli et al., 2016). The Grenelle Law was convened by the President of the French Republic in 2007 with the main aim to discuss the major environmental challenges and to address them by proposing collectively shared commitments. In July 2010, a second Grenelle law containing more precise commitments was adopted. In addition, the French National Sustainable Development Strategy 2009–2012 was adopted at the end of 2009 by the government and includes specific CSR policies (Knopf et al., 2011). This law affects both companies headquartered in France and those headquartered elsewhere with operations in France and requires companies to report on up to 42 indicators spanning environmental, social, and governance categories and based on the "comply or explain" principle; furthermore, reporting should be verified by an independent party (Morris and Baddache, 2012). Similar intervention can be found in various EU Member States.

Currently, 15 Countries have developed National Action Plans (NAP) on CSR (Belgium, Bulgaria, Cyprus, Czech Republic, Germany, Denmark, Estonia, Finland, France, Italy, Lithuania, the Netherlands, Poland, Sweden, the UK), and 5 are close to completing their NAPs (Austria, Ireland, Hungary, Malta, Spain) (Williamson et al., 2014). In this sense, the Italian national action plan on CSR (2012-2014) was adopted by the Italian government in 2012, and the Ministry of Economic Development, the Italian Banking Association and the Confederation of Italian Industries have renewed their memorandum of understanding to support the disclosure of non-financial information in the banking sector (Williamson et al., 2014). Likewise, the Dutch Banking Code ('the Banking Code') has been promoted by the Dutch Banking Association (NBV) as a response to the role that its members played in the events leading up to the recent financial crisis (Van der Linden, 2013). The Dutch experience has attracted attention outside the Netherlands for its proposal to introduce a professional or Hippocratic oath for bankers (de Bruin, 2014). The revised Banking Code came into effect on 1 January 2015. In addition, laws have been established requiring all banks to report on their compliance to the code and to install a Banking Code Monitoring Commission (de Bruin, 2014). The Banking Code was combined with a Social Charter and the Banker’s Oath into a document called “Future Oriented Banking” by the NVB (Popma, 2017). The Banking Code sets out the principles of conduct for Dutch banks in terms of corporate governance, risk management, audit and remuneration and is a form of self-regulation on a ‘comply or explain’ basis. It comprises a number of recommendations and principles primarily focused on governance and banks' culture. The code contains a declaration of ethical conduct - an “oath” - that must be signed by all members of the executive boards of Dutch Banks (Van der Linden, 2013; Chandler, 2014; Béduneau and Gizard, 2016; Popma 2017). In addition to national programmes, a variety of guidelines or frameworks for reporting on sustainability such as the Global Reporting Initiative (GRI) and the ISO (International Organization for Standardization) 26000 are currently available (Weber and Feltmate 2016). The GRI guideline is considered the most common framework for sustainability reporting and represents the global best practice for reporting on a range of economic, environmental and social impacts. The GRI is a voluntary reporting framework that aims to develop globally applicable sustainability reporting guidelines (Golob and Bartlett, 2007), and banks may use these guidelines as indicators for measuring and reporting the sustainability of their environmental and social activities (Khan et al., 2011; Kiliç, 2016). In the wide range of voluntary frameworks, the Natural Capital Declaration (NCD) is a global finance initiative that tries to integrate natural capital considerations into financial products and services, and their inclusion in financial accounting, disclosure and reporting (Mulder et al., 2013). In the same vein, Equator Principles (EPs) is a risk management framework, adopted for determining, assessing and managing environmental and social risk in projects. The EPs are primarily intended to provide a minimum standard for due diligence to support responsible risk-related decisions and conceived to assure sustainable development in project finance, and the social, ethical, and environmental policies of the financial institutions that adopt this framework differ significantly from those of banks that did not adopt it (Scholtens and Dam, 2007). Currently, 89 financial institutions in 37 countries have officially adopted the EPs. The interest that sustainability practices awaken in investors as a criterion to be considered in the configuration of their investment portfolios has led to the emergence of global sustainability indices linked to financial markets (López et al., 2007; Searcy and Elkhawas, 2012) such as the Dow Jones Sustainability Index and the FTSE4Good. The FTSE4Good Index Series is designed to measure the performance of companies demonstrating strong Environmental, Social and Governance (ESG) practices. Many academic works focused on the motivation that led companies - and thus banks - to be enclosed in sustainability indices. Searcy and Elkhawas (2012) show that several motivations for engaging in sustainability initiatives may be grouped into three broad categories: business benefits, improved stakeholder relations, and other motivations. More in particular, the motivations related to the need to

improve stakeholder relations include building win-win relationships, meeting stakeholder expectations, responding to external public perception, and maintaining social license to operate (Deegan, 2007; Freeman et al., 2010; Searcy and Elkhawas, 2012). A recent work (Laidroo and Sokolova, 2015) regarding the CSR disclosure scores of international banks in 2013 notes that it was significantly larger than in 2005. The research also underlines that 1) significant improvements remained in the area of sustainable products and environmental management policies; 2) although the transnational context had contributed to the gradual convergence of CSR disclosure scores, the existence of differing national and organizational contexts had maintained some of the diversity across banks. Disclosure quality of European banks is increased with the endorsement of IAS/IFRS principles, particularly regarding the credit risk exposures (Bischof, 2009). At the same time, voluntary standards for environmental risks and sustainable banking and finance are emerging (Fullwiler, 2015).

Summarizing, the literature review highlighted that the attention to environmental issues and in particular to environmental risk management have increased during recent years. Many regulatory and international frameworks have been developed and are variously applied due to many specific factors such as size or legal context.

Methodological notes and sample issues

Moving from the consideration that environmental reporting varies widely across firms and that content is not strictly regulated (Cormier and Magnan, 2003), this work has been designed by using an inductive and comparative multiple case study (MCS) approach based on Yin's principles (see: Yin, 2013). A qualitative case study provides tools for researchers to study complex phenomena within their contexts (Baxter and Jack, 2008, p. 544) and to provide unique means of developing theory by utilizing in-depth insights of empirical phenomena (Dubois et al. 2002, p. 555). Yin (2013) describes a case study as an empirical research method, which, with the aid of multiple sources of evidence, studies a contemporary phenomenon within its real-life context. In this context, such an approach is useful to offer possible general explanations (Eisenhardt, 1989). Furthermore, the multiple case studies approach was judged to be the most appropriate due to the following reasons. First, contents and structures of sustainability and environmental reporting are extremely different between banks and between banks of different countries. This is due to different aspects that have been detailed in previous sections. Second, a multiple case studies research is also well suited for the investigation of complex phenomena due to information-rich cases (Yin, 2013).

To ensure the reliability of the study, a research protocol has been developed (Yin, 2013). Data analysis proceeded in two steps. First, using the research protocol, data were recorded and examined. Second, the description has been built with the aim to identify areas of similarities or differences between the cases. Eight European Banks included among the Global Systemically Important Banks (G-SIBs) have been analysed. A G-SIB is defined as a financial institution whose distress or disorderly failure, because of its size, complexity and systemic interconnectedness, would cause significant disruption to the wider financial system and economic activity (Basel Committee, 2011; FSB, 2016). Because of the systemic threat they pose to the financial system, G-SIBs are submitted to a specific set of rules and enhanced supervision. It is reasonable to consider that multinational banks should adopt sound and sophisticated credit risk management schemes and procedures as well as should pay more attention to risk disclosure practices (Khlif and Hussainey, 2016). G-SIBs have been compared because they are obligated to provide a wide range of data.

In addition, it is reasonable to expect that they disclose more voluntary information. In this exploratory analysis, the sample size has been deliberately limited to these eight cases to ensure

a high level of detail and quality and interest of the analyses. In the range of G-SIBs - to explore similarities and differences between banks' environmental risk disclosure practices, possibly also linked to country-specific factors - only banks headquartered in the Euro area have been selected. Following the last updated list published in 2016, of the total of 30 G-SIBs, 8 of them are in the Euro area (FSB, 2016) and are supervised within the European Banking Union. More in detail, the sample comprises the following banks: BNP Paribas (FR), Deutsche Bank (DE), BPCE (FR), Crédit Agricole (FR), ING (NL), Santander (ES), Société Générale (FR), and Unicredit (IT). Data on the analysed European banks are presented in Table 1.

Table 1: Bank's data

Bank	Country	Assets in billions of € *	Employees **
BNP Paribas	France	2,171	190,480
BPCE	France	1,219	108,000
Crédit Agricole	France	1,770	140,000
Deutsche Bank	Germany	1,803	101,104
ING	Netherlands	885.7	52,000
Santander	Spain	1,342	193,863
Société Générale	France	1,460	146,000
Unicredit	Italy	891.47	117,659

*As of 30 June 2016; **Last upgrade on banks' website

Reports from 2011 to 2015 have been analysed with respect to the terms "environmental risk" and "sustainability risk" and to the meaning in which these terms were used. Table 2 provides an overview of the documents analysed. Each report has been checked by two researchers to avoid errors and misrepresentation.

Table 2: Analysed document by bank

Bank	Documents reviewed
BNP Paribas	BNP PARIBAS Commitments to the Environment; CSR Reports (2015/2011); Registration Document and Annual Financial Report (2015/2011); Annual Reports (2015/2011); Social Reports (2015/2011);
BPCE	Registration Documents and Full-Year Financial Reports (2015/2011); Review of operations and sustainable development reports (2015/ 2011); Being Responsible (2014); Natixis Registration Documents (2015; 2014)
Crédit Agricole	Actor for Energy Transition (2015, 2014); Annual Financial Reports (2015/2011); Business Review (2015/2011); Corporate Social Responsibility reports (2015/2011)
Deutsche Bank	Annual Reports (2015/2011); Corporate Responsibility Reports (2015/2011); Annual Review (2014/ 2011) Financial Report (2014/2011); Annual Financial Statements and Management Report (2015/2011); Environmental and Social Policy Framework
ING	Group Annual Reports (2015/2011); Sustainability Reports (2015/2011)
Santander	Sustainability reports (2011/2015); Annual reports (2011/2015); Annual review (2011/2015)

Bank	Documents reviewed
Société Générale	Financial Statements (2015/ 2011); Registration documents (2015/ 2011); Corporate and social responsibility Report (2015/2016)
Unicredit	Integrated report (2014, 2015); Integrated Report Supplement (2014, 2015); Sustainability report (2011/2013); Reports and accounts (2011/2015); Environmental commitment (approved March 2015), Equator Principles document.

Learning from experience: case studies

The case studies are presented in the following sections. These sections focus on the interpretation of the data publicly available on the groups' websites. Each case has been explored with regard to the issue of environmental risk assessment and monitoring.

The case of BNP Paribas (France)

The environmental commitment of BNP Paribas is guided by several principles and global initiatives (such as the Principles for Responsible Investment, the Equator Principles, the Soft Commodities Compact of the BEI, and the Montreal Carbon Pledge). The Group endorsed the Equator Principles in 2008 and includes an extra-financial analysis in its project financing (Registration Document 2011, p. 370). The amount of provisions and guarantees covering environmental risks - both in 2014 that in 2013 - is USD 2.6 million and is related to private litigation and does not cover penalties for non-compliance with regulations (Registration Document, 2014, p. 467; Registration Document, 2013, p.430). For 2012 and 2011, the amount of provisions and guarantees covering environmental risks was USD 3.4 million. The fight against climate change is one of the 4 pillars in the CSR disclosure of BNP Paribas. Since 2010, BNP Paribas has developed a framework for managing environmental, social and governance risks as part of a global risk management approach, and it is based on:
- The development of financing and investment policies managing the Group’s activities in sectors with significant ESG issues;

- The respect of the Equator Principles for major industrial and infrastructure projects;
- The implementation of a specific ESG risk assessment framework for its products and services;
- The use of management and monitoring tools for these risks (Registration Document, 2015, p. 458).

This framework was further strengthened in 2015. A CSR screening is further used to evaluate the most relevant non-financial risks in sectors that are not covered by specific sector policies. The Corporate & Investment Banking (CIB) Division created a CSR screening tool to identify the main ESG risks applicable to large corporate clients operating in sectors not covered by the sector policies and clients are subjected to specific due diligence (Registration Document, 2014, p. 435). This screening is realized through a questionnaire in the following sectors: consumer goods, capital assets, energy and electricity, oil, gas/chemical products, ICT, healthcare, transportation, automotive, building and building materials, and metallurgy (Registration Document, 2015, p. 460).

The case of BPCE (France)

In 2009, Groupe Caisse d'Epargne and Groupe Banque Populaire *merged* to form *BPCE* as a **cooperative banking institution.** BPCE is **the second largest banking group in France,** and through its subsidiaries (including Natixis), it provides banking, financial, and real estate financing services to individuals, professionals, small and medium enterprises, large enterprises, and institutions in France and internationally. The BPCE disclosure is based on the social and environmental information set out in Article 225 of the Grenelle 2 law, which governs reporting structure and on the GRI 4 framework. The 2015 BPCE Registration document - with a sentence which is the same as that of the 2014 BPCE Registration document - states:

"The Group's activities have no major direct impact on the environment. Environmental risk mainly arises from the Group's banking business. This risk arises when environmental criteria are not taken into account in the projects being financed. Such risks are mainly associated with financing in other countries with fewer environmental regulations and where large-scale projects can give rise to environmental risks. These risks are mainly managed by Natixis through its asset management and project financing activities via specific procedures for analyzing a project's social and environmental impacts (Equator Principles). For 2015, Groupe BPCE recorded no provisions or guarantees to cover environmental risks in its financial statements". (p. 490)

Natixis is the international corporate, investment, insurance and financial services section of Groupe BPCE. Environmental and social criteria are assessed through a dedicated structure within the division's Corporate Secretariat. The structure monitors the quality of the assessment, Environmental and Social risks (E&S) in transactions, analyses reputational risk of involved parties, and implements CSR policies in sensitive sectors. With regard to the assessment and monitoring of E&S risks, Natixis - assesses the E&S risk of projects under the Equator Principles methodological framework. The assessment of E&S is also conducted outside the scope of the Equator Principles, and the quality of the governance and management of the E&S risks inherent to the industry in question are assessed on the basis of current international best practices and standards; furthermore, the services of external consultants are called upon if necessary (Natixis Registration Document, 2015, p. 382). To preserve its reputation, financial transactions are further checked to assess whether the borrowing parties have previous poor management experiences in the execution of operations from an environmental, social, sanitary or security point of view.

The case of Crédit Agricole (France)

At Crédit Agricole (CA), negative environmental and/or social impacts related to financing and investments are taken into account using three pillars: application of the Equator Principles, CSR sector policies, and an assessment of the environmental and social aspects of operations (CA Registration Document, 2015, p. 54). Since 2013, CA Corporate and Investment Banking (CIB) has introduced a scoring system for all corporate customers. Customers are scored each year on a scale composed of three levels (Advanced, Adequate or Sensitive), based on whether the customer complies with existing sector policies (Adequate), whether there is an image risk for the Bank (Sensitive), and whether the customer is listed in the main global CSR indices (Advanced).

In addition, since 2014, the EPs framework has been applied to project finance advisory services, project finance, project-related corporate loans and bridge loans. In addition to the cases determined in the Equator Principles Charter, CA endeavours to apply these principles on a voluntary basis to all other financing that is directly related to a project (CA Registration Document, 2015). The CA CSR strategy has been developed around three ambitions and 10 focus areas, is based on consultation with employees and outside stakeholders and is embodied

in a process of participatory and evolutionary progress, called FReD. FReD is based on the 3 sets of standards (i.e., the 3 CSR pillars: economic, social and environmental) to create a framework for their entities' actions: Fides (for the economic segment), Respect (for the social segment), and Demeter (for the environmental segment). Each of these areas is associated with 19 commitments. Entities must choose five areas for each set of standards and organize at least 15 projects. Part (one-third) of the long-term variable compensation of executive officers is affected by the CSR performance of CA and is based on by the group FReD Index, the arithmetic mean of the FReD indices of the 13 entities involved in the process. This part of variable compensation is paid when the Group's index is equal to 2.

The case of Deutsche Bank (Germany)

The Deutsche Bank (DB) approach to manage environmental and social risks is based on an ES (environmental/social) Policy Framework - part of the Bank's global Reputational Risk Framework (RepRisk Framework) - that defines consistent standards for the identification, assessment and management of reputational risks and is implemented through specific principles and guidelines. The general provisions define sensitive sectors, specify the requirements for ES due diligence and include criteria for mandatory referral to Group Sustainability. The ES Policy Framework - introduced in 2011 - was substantially revised in 2015 and includes general and sector-specific provisions and is applied for corporate finance including project finance, trade finance, and investment banking, defines procedures and responsibilities for risk identification, assessment, and decision-making. It also covers deal-independent screening and the identification of companies with a controversial profile from an ES perspective (DB Environmental and Social Policy Framework, 2017, p. 2). Under the ES Policy Framework, the following sectors and activities are defined as having high potential for significant ES impacts: agriculture and forestry, chemicals, infrastructure projects in certain countries, metals and mining, oil and gas, utilities, and other activities either with a high carbon intensity and/or potential for human rights infringements. In addition, the DB approach to managing ES risks is aligned with the Code of Business Conduct and Ethics. In 2015, Deutsche Bank assessed 1,349 potential transactions using the ES Policy Framework. Following the Deutsche Bank's RepRisk Framework, business units are initially responsible for identifying ES risks. In supporting business units, the ES Policy Framework acts as a starting point when assessing client relationships or transactions by defining sensitive sectors, specifying the requirements for ES due diligence, and including criteria for mandatory referral to Group Sustainability (DB Environmental and Social Policy Framework, 2016). The ES risk review process includes discussion of critical issues with clients and remediation actions, and third party subject-matter experts may be involved in this process. The final ES risk profile includes evaluation of the materiality of the identified ES risks and associated reputational risks. If the risks are deemed to pose a material reputational risk or meet one of the mandatory referral criteria, the transaction will be referred to one of the four Regional Reputational Risk Committees. If issues are not resolved at the level of a Regional Reputational Risk Committee, it has the option, in exceptional circumstances, to refer matters to the Group Reputational Risk Committee (GRRC). This body holds ultimate responsibility for overseeing reputational risk at Deutsche Bank and is chaired by a member of the Board; in addition, it receives a quarterly report from the dedicated sustainability function (Group Sustainability) on sensitive topics involving reputational risk and evolving ES trends and regulations (DB Corporate Responsibility, 2015). The GRRC's key tasks and responsibilities include making decisions on transaction related reputational risks or as required by group policies such as those relating to new client adoption (DB Corporate Responsibility, 2014). In conducting ES risk reviews, DB assess clients' ES risk management systems including governance and capacity to address ES

risks, look for policies and commitments as well as a responsible approach to stakeholder engagement and disclosure; in addition, it also assesses their track record (DB Corporate Responsibility, 2014; DB Corporate Responsibility, 2015).

The case of ING (Netherlands)

As an Equator Principles Financial Institution (EPFI), ING implements the EPs in their internal environmental and social policies, procedures and standards and does not provide project finance or project-related corporate loans to clients that do not comply with the principles (ING Group Sustainability Annex, 2014). The EPs are embedded in ING's ESR Framework. ING has a robust Environmental and Social Risk (ESR) framework that is integrated into its overall risk management methodology (ING Group Annual Report, 2014). The ESR framework - that is regularly reviewed - is applied to ING's Wholesale Banking business. The ESR Framework covers sectors such as mining and metals, chemicals, defence, energy, forestry and agro-commodities, and manufacturing. It also includes explicit restrictions for activities that are not in line with ING values (ING Group Annual Report, 2015, p.52). ING's ESR Framework is based on a double screening both on clients and on transactions. In 2015, more than 3,326 corporate clients and 4,713 corporate lending transactions were assessed under the ESR Framework (ING Group Annual Report, 2015, p.53). In addition to the ESR assessment, lending clients and transactions are reviewed against externally recognized sustainability criteria (ING Group Annual Report, 2015). Moreover, ING Bank supports the principles of the Dutch Banking Code.

The case of Santander (Spain)

The assessment of the reputational risk stemming from any financial transactions with a social or environmental impact is provided through a task force chaired by the Group Chief Compliance Officer and comprises members of Compliance, Risks, Sustainability, Legal Advisory, Communications and the business areas (Santander Sustainability Report, 2015). During 2015, this task force conducted a project to analyse and improve the status of social-environmental policies that prohibit banks from funding certain activities and place restrictions on others (Santander Risk Management Report, 2015). The methodology used to analyse project finance operations and corporate loans with a known purpose can be described as follows:

- An initial questionnaire is filled out to establish the project's risk in the socio-environmental sphere and the operation's degree of compliance with the Equator Principles in the case of project finance operations with an amount equal to or more than $10 million, and corporate loans with known destiny for a project with an amount equal to more than $100 million;
- A more detailed questionnaire has to be filled out for projects classified within the categories of greater risk (categories A and B);
- A social and environmental audit is conducted (by independent external auditors) according to the category and location of the projects (Santander Annual Report, 2015).

The Group also defined sector-specific environmental policies that incorporate the criteria for analysing social and environmental risk in sensitive sectors (defence, energy and soft commodities) (Santander Annual Report, 2015, p. 48). Moreover, since 2004, Santander has used a "Vida Tool" to assess the environmental risk of corporate clients, both current and potential, through a system that classifies in seven categories each of the companies on the basis of the environmental risk contracted (Santander Annual Report, 2013; Santander Annual Report, 2014). This tool has not been retrieved in 2015 reports.

The case of Société Générale (France)

In 2015, Société Générale (SG) joined the Positive Impact Finance Manifesto of the United Nations Environment Programme (UNEP FI) to identify the environmental and social impacts of its activities and to reduce them in compliance with international best practices. The SG credit risk and reputation management policies and processes have been gradually incorporating the assessment of Environmental and Social (E&S) criteria, and in addition to the regulatory obligations, the Group has made many voluntary commitments related to these topics (SG Registration Document, 2015). Commitments and obligations are set out in the "Environmental and Social General Guidelines".

The Group integrates the assessment of potential E&S risks and impacts into its decision-making processes both at the client assessment level and, where necessary, at the transaction assessment level (Environmental and Social General Guidelines, 2016). With regard to the client assessment level, central to the Group's assessment of E&S risks are the understanding of the E&S impacts associated with the client's activities, and the evaluation of the client's commitment, capacity and track record in managing these impacts (Environmental and Social General Guidelines, 2016, p.3). In addition to the client assessment process, transactions are subject to a specific E&S assessment when the potential E&S impacts are considered significant and when it is possible both in line with the EPs provisions and through an E&S due diligence based on a framework consistent with the supported standards and adapted to each type of financial engagement (Environmental and Social General Guidelines, 2016, p.3).

The case of Unicredit (Italy)

In 2012, UniCredit was among the first signatories to the Natural Capital Declaration (NCD) (Integrated Report, 2015, p.45). The " *Environmental Commitment"* document describes the approach, roles and responsibilities, principles, rules, procedures and systems adopted by UniCredit to prevent and manage environmental impacts and risks in operations and the value chain. Through the Group General Principles for Credit Activities and other dedicated policies and practices, UniCredit assesses and manages both traditional economic and financial impacts and non-financial impacts, including environmental and other related reputational risk impacts. For this reason, in 2003, Unicredit was among the world's first signatories of the ten principles that constitute the EPs (see Box 1) and integrates the related framework in various internal policies such as the Special Credit Policy Project Finance Transactions and the Global Policy on Structured Trade and Export Finance (Integrated Report, 2014, p.24). Unicredit manages risks related to the environment in different ways. When applying for credit, clients must fill out an environmental questionnaire. The environmental performance of the customer is then assessed, and their credit rating is adjusted accordingly (Integrated Report, 2015, p.45). The environmental impacts are managed through specific governance rules and structures. The Group Environmental and Social Council (GESC) - established in 2015 - oversees the implementation of UniCredit's environment-related initiatives and commitments, proposes the Group environmental strategy, annual objectives and targets as well as the related activities submitted to the Executive Management Committee (EMC) for approval. The EMC - chaired by the Chief executive officer (CEO) - ensures the steering, coordination and control among the Group. The function of monitor and control of operational and reputational risks at the Group level is assigned to the Group Operational and Reputational Risks Committee (GORRIC). The GORRIC controls and monitors the operational and reputational risk portfolio and risk mitigation actions and ensures consistency across business functions and legal entities for operational and reputational risk policies regarding sensitive sectors (e.g., mining, nuclear and coal-fired power generation) (Environmental Commitment, p. 2). Moreover, the Group

Transactional Credit Committee (GTCC) evaluates the potential environmental, social and reputational risks inherent in transactions as defined by the current internal Global Rules. Transactions are generally screened by the legal entity responsible at both the transactional and the client level. During 2015, 500 transactions were assessed in 2015 for potential environmental, social, human rights and other reputational issues. Decisions regarding transactions that have been assessed as “high risk” are submitted to the parent company for approval, and a regular assessment is part of the annual credit lines renewal process (Integrated Report 2015, p. 45). The international standards that inspire the UniCredit policy on environmental risk are the United Nations Environment Programme Finance Initiative (UNEP FI); the UN Global Compact; the UN Principles for Responsible Investment (UN PRI); the International Finance Corporation (IFC) Performance Standards; the World Bank Group Environmental, Health and Safety (EHS) Guidelines; the Organisation for Economic Co-operation and Development (OECD) the Guidelines for multinational companies; the Natural Capital Declaration (NCD); the Equator Principles (EPs); the Green Bond Principles; and the Climate Bonds Initiative.

Main findings

The analysis of the case studies proposed in this work allows for some preliminary considerations concerning the approach of the selected banking institution to environmental risk management and disclosure. The analysed banks highlight a lack of consistency in type, quantity and quality of environment and sustainability disclosure. This lack of consistency can be explained by the fact that CSR and Sustainability Reports are voluntary publications. In this sense, Table 1 shows that there are a wide range of reporting typologies adopted by banks and that span from comprehensive reports - that include both financial that non-financial information - to specific reports and notes. A number of documents such as the BNP Paribas Commitments to the Environment, the CA Actor for Energy Transition, the DB Environmental and Social Policy Framework, and the Unicredit Environmental commitment have been retrieved. The highly variability beyond these reporting practices can be further explained in light of the countries’ policies. In particular, this is the case of France, where a specific regulation has been applied. In this vein, French banks also have to disclose their provisions or guarantees to cover environmental risks, so the variability in the quality and typology of disclosure is strictly related to countries’ specific approaches to CSR and environmental issues. Further, the analysis reveals that environmental risk is perceived (and treated) as a potential threat for banks' reputation. This aspect is clearly remarked in the case of Unicredit and Deutsche Bank. Indeed, in these cases, the environmental impacts are managed through specific governance rules and structures. In particular, the Group Environmental and Social Council (GESC) - established in 2015 - oversees the implementation of UniCredit’s environment-related initiatives and commitments while in the case of Deutsche Bank, a specific ES (environmental/social) Policy Framework - that is part of the Bank’s global Reputational Risk Framework - is applied. Screening practices are also applied by all banks and include sensitive sectors (e.g., mining, nuclear and coal-fired power generation).

The assessment of the environmental risk is often based on a double screening both on clients and on transactions, and in addition to internal assessment procedure lending, clients and transactions are often reviewed against externally recognized sustainability criteria (i.e., ING), by external auditors (i.e., Santander) or through scoring system (Crédit Agricole).

The sample reveals that in other cases, the environmental risk is conceived a type of risk perceived only with regard to project finance initiative and thus managed through the EPs’ indication. Table 3 provides an overview of banks - included in the sample - that adopted EPs.

Table 3: Equator Principles adoption by bank

Bank	EP Adoption
BNP Paribas	October 2008
BPCE	Not adopted
Crédit Agricole	June 2003
Ing	June 2003
Deutsche Bank	Not adopted
Santander	April 2009
Société Générale	September 2007
Unicredit	June 2003
Source: http://www.equator-principles.com	

Banks that do not apply the EPs framework are BPCE and Deutsche Bank. However, in the case of BPCE, Natixis - the subsidiary that provides banking, financial, and real estate financing services to individuals, professionals, small and medium enterprises, large enterprises, and institutions – has been included in the list of EPs members since December 2010. With regard to the number of projects assessed under the EPs framework, Table 4 provides an overview of project finance transactions reported by the banks that have adopted EPs.

Table 4: Total number of project under EP framework that reached financial close in 2015 by bank

Bank	Number of projects (2015)		
	A	B	C
BNP Paribas	0	12	1
Crédit Agricole	3	29	3
ING	3	25	1
Santander	1	40	12
Société Générale	8	21	2
Unicredit	6	10	10

Under the EPs framework, projects are classified under three main categories: (i) category A: projects with potentially significant adverse environmental and social risks and/or impacts that are diverse, irreversible or unprecedented; (ii) category B: projects with potentially limited adverse environmental and social risks and/or impacts that are few in number, generally site-specific, largely reversible and readily addressed through mitigation measures; (iii) category C: projects with minimal or no adverse environmental and social risks and/or impacts.

Société Générale is the bank with the highest number of projects (8) with potentially significant adverse environmental and social risks assessed - during the year 2015 - under the EPs framework, while Santander is the bank with the highest number (40) of projects with

potentially limited adverse environmental and social risks and/or impacts. The attention paid by banks included in the sample to the use of EPs framework in assessing the environmental risk of project finance initiative and thus in disclosing results is high. However, this aspect could be potentially explained - and consequently also the decision to not apply this framework - with the fact that banks tend to engage in the EPs if the perceived benefits exceed the associated costs. Benefits can be perceived both in terms of image and reputation and in terms of financial performance. The same consideration can be applied in the case of ethical or sustainability indices. Table 5 shows banks included in sustainability indices. In particular, all banks - except for BPCE - are or were listed in the main sustainability indices: Dow Jones Sustainability Index and Ftse4Good Index.

Table 5: Banks enclosed in sustainability indices

Bank	2015	
	Dow Jones Sustainability Index	Ftse 4 Good Index
BNP Paribas	✓	✓
BPCE	×	×
Crédit Agricole	*Excluded since 2011*	✓
Deutsche Bank	✓	✓
ING	✓	✓
Santander	✓	✓
Société Générale	✓	✓
Unicredit	✓*	✓

Legends: ✓=included; ×= excluded.* Unicredit is not yet included since September 2016.

Finally, major attention is paid - by all banks - on issues related to gas emissions reduction or climate change issues, and their efforts span from the development of environmental and climate friendly financial instruments to special policies and goals (such as the effort to reduce the CO_2 emissions by 20% compared with 2014, per occupant by 2020 in the case of Société Générale).

Conclusions, limitations and future lines of research

In recent years, environmental disclosure in banks has received great attention, both in theory and in practice. This work highlighted how environmental disclosure and environmental risk are perceived and thus managed by Euro area G-SIBs. The literature review highlighted that several key changes are occurring in the regulation and supervision of banking (and financial) systems, and sometimes with regard to the environmental risk management, the situation is different in different countries. The analysis revealed that much remains to be done in terms of environmental risk disclosure. Even if the sample comes from the same geographical (and thus, regulatory) area, banks show large variability in terms of the quality and quantity of disclosure. In recent years, many countries have been increasingly exerting pressure on corporate environmental reporting, and many international frameworks have been developed; CSR and environmental disclosure are so far mandatory, standardized and not only narrative. The findings of this article affirm that the credit risk management approach, procedures and

disclosure have not been led by the fact that these banks are considered too big to fail or the fact that they are supervised under the Basel Committee regulatory framework. Certainly, regardless of the regulatory regime, banks have incentives to voluntarily provide information regarding their engagement (and commitment) in environmental and social activities, and sustainable practices. Despite the popularity and the recognized relevance of ESG factors in the business activities, in theory, ECRM practices - in the banking industry - are still embryonic and have largely been underexplored. However, the core aspect that emerges – both in theory and in practice – is that reputation – or the perceived potential reputational risk – is the core driver of corporate environmental reporting in banks. At the same time, reputational issues are strictly linked with the ECRM and risk management procedures. Reputational damage could occur if a bank does business with firms that are in trouble for environmental problems or if they finance projects that are seen as environmentally dangerous. Moreover, the case studies analysis revealed that to protect themselves from potential reputational damage, banks use both internal and self-developed credit risk management practices instead of international guidelines and frameworks (such as GRI and EPs). Nothing has emerged about the systemic risk, and this confirms that many improvements in practice are yet required. The conduct of banks differs, and this may depend on a number of factors such as size and legal context. Moreover, the nature of environmental disclosure is essentially voluntary, narrative and less standardized. Undoubtedly, there are some limitations regarding this study that should be mentioned, particularly due to its exploratory and qualitative nature. In addition, due to the dimension of the sample, no generalization can be provided. Despite these limitations, the results are revealing because many interesting questions emerge from cross case analysis, and major findings provide some thoughtful insights, give directions and encouragement for future research. In particular, despite the increasing level of interest in sustainability issues and environmental risks in the banking sector, it is not yet clear what is the real value that the market assigns to these aspects. In this sense, future research works could analyse the value that the market assigns to environmental and sustainability reporting, how environmental and sustainability performance affects the financial and operating performance, and how environmental and sustainability performance affects the reputation of European banks. Moreover, future investigations about the issues analysed in this work could find space in the field of risk management and reputational risk. Thus, future research needs to be designed to more clearly establish the relationships between environmental disclosure and the reputational perception of stakeholders and between the quality and quantity of environmental - and CSR - disclosure as well as effective responsible practices in banks. Moreover, given the cross-border repercussions that G-SIBs could potentially have on the financial institutions in many countries and potentially on the global economy at large, the disclosure of how environmental risk is perceived and managed by these banks is particularly relevant. In this sense, more attention is required both on the regulatory side and on the academic side to develop disclosure guidelines for banks of different sizes and in particular, for G-SIBs banks.

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