Will Bank Transparency really Help Financial Markets and Regulators?

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WILL BANK TRANSPARENCY REALLY HELP FINANCIAL MARKETS AND REGULATORS?[1]

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Summary:

The transparency of credit institutions is currently an issue of crucial importance not only with regard to the adaptation of regulatory tools (Basle II, IAS-IFRS international norms etc.) but also to the banking, financial and economic consequences. The current crisis places the importance of information about all banking activities centre stage in any debate. At a time when banks are controlled more than ever before, it is surprising to see them being swamped with criticism about their opaqueness and their reluctance to communicate, especially about the risks they are taking. This paper therefore, presents state of the art works on disclosure and bank transparency. It deals with questioning whether it is beneficial or not to increase disclosure levels in order to improve the discipline that the regulators and the markets exert on the banks.

Key words:

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Introduction

Since the end of the 1970s, the world economy has been rocked by banking crises on more or less larger scales and these crises have been too numerous and too regular. Lindgren et al. (1996) identified banking difficulties in 133 member countries of the IMF between 1980 and 1995. Caprio and Klingebiel (2003) list 117 systemic banking crises in 93 countries and non-systemic banking crises in 45 different countries since the end of the 1970s. As an example, in terms of financial cost, the failure of 1400 American savings banks cost the American tax payers almost 180 billion dollars, in other words 3% of GNP (Caprio and Klingebiel, 2003). As another example, the cost of rescuing Crédit Lyonnais in France is estimated at more than 75 billion dollars (Rochet, 2008).

Banks are clearly a vector for amplification of financial crises because of the detrimental effect of systemic risk. As evidence of this we only have to look at the financial crises of Mexico (1994), Korea (1997), Russia (1998), Turkey (2000) and Argentina (2001-2002) where the weakness of the banking sector was at the heart of the problem (Freixas et al., 2000; Hasman and Samartin, 2008; Nikitin and Smith, 2008). The seriousness of the consequences of these crises may be explained by the interconnection between the banking sector and the other sectors of the economy. In a favourable situation the banking sector is a motor of the real economy. In a crisis situation the banking sector is a vector for the transfer and acceleration of the crisis in the rest of the economy (Rochet and Tirole, 1996; Aghion et al., 2000; Freixas and Parigi, 1998; Freixas et al., 2000; Allen and Gale, 2000; Hasman and Samartin, 2008). The current world economic crisis originated with subprime lending (initially a property and banking crisis) which later spread to the real economy.

Following these numerous banking crises, the IMF (Fischer, 1999) and the Basle Committee (2006), through the Third Pillar and the Basle II reform, called for an increase in bank transparency. Moreover, for Fischer, the banking crises had one common denominator, namely a lack of transparency with regard to the scale of position taking by both borrowers and creditors. Bank transparency should help to facilitate the enforcement of discipline on banks. In addition to the regulatory discipline carried out in France by the Banking Commission, disclosure of information from banks aims to improve the effectiveness of market discipline. In 1991, the US Treasury Department also considered that market discipline could replace regulatory discipline to solve the problems of moral hazards and efficiency in banks.

This market discipline should have a direct effect on bank assets risk and on the cost of funding the financial structure of the bank (Landskroner and Paroush, 2008). In the banking sector, market discipline could be shown through the action of three types of players: depositors, holders of debt instruments and holders of title deeds. Market discipline aimed at banks is applied mainly to excessive risk taking. Berger (1991) explains that depositors, faced with greater uncertainty and a rise in costs related to their deposits, might demand higher returns (price effect) or withdraw their deposits (quantity effect). Similarly, creditors might demand higher returns on capital loaned to the bank, thus increasing the cost of capital for the bank. Finally, stockholders who are not satisfied could sell their shares, thus putting pressure on the quoted rate and bringing the bank management under surveillance.

From 1996, Flannery and Sorescu examine the manner in which market investors may recognise and control bank risk. They show that government guarantees, given especially to insure deposits, act as a disincentive to creditors who must depend on efficiently supervising the risk taking of banks. Morgan and Stiroh (2000) take the view that investors should know

how to estimate what is risky and should be able to recognise a rise in bank risk. To achieve this, Hamalainen et al. (2005) explain that it is necessary to improve bank transparency and to put in place incentives to encourage investors to recognise the risk taking of banks and to control it. In the context of the analysis developed by Hamalainen et al. (2005), bank transparency (with regard to capital structure and exposure to bank risk) is a necessary condition for market discipline to work effectively.

In this paper, we set out to review works that deal with the benefit to be derived from greater "transparency" or at least increased disclosure from banks to the markets and the regulators. Would regular bank disclosure to the market, bank transparency, favour efficient market discipline of bank risk taking? Or on the contrary, would this disclosure from banks, which is not necessarily synonymous of transparency on the part of the bank, be a vector of acceleration / spreading individual difficulties to the banking sector? Certain information on the financial situation of the bank, especially its liquidity, could spread panic in banking and at the end a destabilisation of the banking sector due to growth in the level of risk. (Diamond and Dybvig, 1983).

In order to answer these questions, this study will be divided in the following manner. In the first section we will present analyses from academic papers on the relationship between bank transparency and discipline of the bank markets. In the second section we will examine the relationship between bank transparency and regulatory discipline in the context of the Third Pillar and Basle II and especially as a mechanism to reinforce market discipline. In the third section an analysis is made from works dealing with the effects of transparency on the regulatory objectives which are the protection of depositors and the limitation of systemic risk. The last section will be the conclusion.

1. Bank transparency and bank discipline by the market?

In this first section, we will examine the link between bank disclosure, a reflection of some transparency, and market discipline. First, we'll offer a definition of transparency before concentrating on studies about the market as a channel for transmission and control of bank information and ending with studies that examine the effectiveness of market discipline.

1.1. Disclosure, transparency and discipline of banks: details

Bank transparency differs from disclosure of information, as explained by authors such as Cordella and Yeyati (1998), Nelson (2001) and Baumann and Nier (2004). Nelson (2001) considers that «transparency is a process whereby information about conditions, decisions and current actions is made accessible, visible and understandable ». Disclosure contributes to the effectiveness of transparency when the information is available in such a way that renders the financial institutions visible and understandable. It should also allow any interested party to assess the impact of decisions made and actions taken by these institutions.

Bushman and Smith (2003) define transparency as « the widespread availability of relevant, reliable information about periodic performance, financial position, investment opportunities, value and risk of publicly traded firms.[5] ». Cordella and Yeyati (1998) also make a distinction between « *disclosure* » which corresponds to general information or common knowledge and « *nondisclosure* » which corresponds to private bank information.

[5] *« Corporate transparency is defined as the widespread availability of relevant, reliable information about periodic performance, financial position, investment opportunities, governance, value, and risk of publicly traded firms. »* (p. 66)

The purpose of bank transparency vis-à-vis the market is better supervision and discipline of the latter. Bliss and Flannery (2002) consider that market discipline implies two elements:

- the ability on the part of stockholders to accurately assess the bank's situation through control / monitoring,
- the ability to influence management decisions to reflect these assessments (« *influence market*[6]»).

Nier and Baumann (2006) also reinforce these comments by considering that investors in the bank's liabilities must be in a position to assess for themselves the risk of loss if the bank fails. Market reactions to any change in risk profile of the bank should have costly implications for the bank and its managers and the market must have sufficient information available to measure the risk taking of the bank. For them three key factors impact on fulfilling these conditions of market discipline:

- government support: implicit or explicit government guarantees may limit market reactions to a change in risk profile of a bank and so limit the incentive effects of market discipline;
- the effectiveness of the discipline depends on the non-guaranteed financing of the banks; if a large proportion of the liabilities are not guaranteed this will make it more costly for the bank to change its risk profile;
- disclosure: being able to observe the choices in terms of risks made by the bank; the banks, in communicating more information, are subject to greater market discipline and so have a higher motivation to limit the risk they take.

Thus, market discipline is only possible if the banks make regular disclosures to the market in a way that permits an assessment of their financial health by investors, in other words, if they are more transparent.

1.2. The market as a discipline mechanism for banks

The financial market sends signals that contain relevant information that is not available in synthesised measurements like profit. For some authors, the price of the security permits an efficient allocation of investments (Grossman, 1976, 1978; Grossman and Stiglitz, 1980). For others, the price of the security gives a real improvement on decisions made (Allen, 1992). Thakor (1995) also underlines the role of *feedback* from the financial market in providing information on managerial performance, which again affects the decisions made by the manager (Ramakrishnan and Thakor, 1984). The author thus establishes the link between information spread through the security and the remuneration of the manager (stock-options, variable part of the remuneration).

Following the example of Berger (1991), Hamalainen et al. (2005) recall the role of the different parties engaged in market discipline with regard to the degree of aversion to risk of the regulator:

- Depositors are theoretically well placed to impose market discipline on the management of the bank (*bank run*). However, the power of this discipline is affected by the moral hazard associated with insurance of deposits (Diamond and Dybvig, 1983). The protection of depositors in regulatory provisions (FDICIA and Basle Committee regulations, for example) limits the discipline that the stakeholders can exert on the bank.
- Stockholders are sensitive to bank risk because the value of capital, and so of

[6] *« Market influence obtains when the return on the firm's securities impacts expected managerial actions, and those actions in turn affect security value. »*

their wealth, is the first affected in case of bankruptcy. Unlike depositors, there is no risk of *bank run* possible but they may sell their shares in great numbers. With a portfolio of diversified stock, they have more incentive to invest in risky banks, especially as they benefit from the system of insurance of their deposits when the bank is in difficulty. The incentives for stockholders to control and limit risk-taking by the bank are therefore very different from those of the regulatory authorities.

- Creditors (especially the holders of subordinated debts; Blum, 2002) hold a form of insurance on the bank's assets and so do not have the same perception with regard to risk. Even though the losses creditors may incur are limited to their financing, unlike stockholders they do not benefit from unlimited gains. So, they have an aversion to banks seeking to increase their profits by taking greater risks. The interest of creditors to curb the risk-taking of the bank is similar to that of the regulatory authorities.

Regarding the cost for the investors of obtaining information on the market in order to exert market discipline, Nikitin and Smith (2008) suggest the establishment of a model for obtaining information on the "fundamentals" of the bank. Banks faced with "fundamental" problems are the first to suffer from lack of market investor confidence and financial crises are often preceded by shocks to these fundamentals. The authors show that stockholders will put in place complementary strategies to obtain information. The thinking behind the complementarity is that the value of information increases for stockholders who have information on the fundamentals. The value of information is higher than the costs when all the shareholders (agents holding shares in the text) acquire information whereas other agents, especially holders of debt instruments and depositors, refrain from acquiring information.

Following analysis of the market as a mechanism for transmission of information by the banks and of discipline of the latter, the following works examine the efficiency of market discipline on the behaviour of banks.

1.3 ***Efficiency of market discipline***

Market discipline takes place in two stages: recognition of bank risk and control of this risk taking. Hamalainen et al. (2005) highlight four conditions, based on the work of Lane (1993), that are necessary for market discipline to work effectively:

- openness of the markets;
- public disclosure by banks of relevant information on their capital structure and their exposure to risk (increase in bank transparency);
- absence of financial bail-out: investors should not expect the banks to be bailed out, especially on the pretext of being « *too big too fail* » in the case of imminent or confirmed failure;
- banks should respond to signals from the market.

Hamalainen et al. (2005) also focus on the problems related to bank transparency. Players on the market do not necessarily have the skills to interpret information transmitted by the banks. To limit this, the information supplied by the different banks should be comparable. Moreover, the banks select the information they transmit and insofar as possible supply information that is favourable to them. Faced with these problems, Berger (1991) recommends the right to information that is sufficient, reliable, relevant, coherent and appropriate (*ex ante* to the decision regarding risk-taking, otherwise this could lead to serious problems of moral hazard).

Table 1 summarises the information regarding data and variables tested in empirical studies on the efficiency of market discipline.

Table 1 : Synthesis of empirical works on market transparency and discipline

Authors	Database	Explained variable	Explanatory variables
Bliss and Flannery (2002)	107 quoted American bank holdings Data from Warga / Lehman Brothers Corporate Bond Database Information on shares and bonds for 2490 banks quarterly from June 1986 to March 1998	1- Financial leverage Δ of the proportion of computing capital apportioned to ordinary shares, preferential shares, market capitalisation and dividends Δ of the proportion of computing capital in the total quarterly assets … *dummies* in relation to stock 2- Risk of bank assets : Δ of the portfolio / total assets 3- Measurements of managerial action : - % of full-time employees - % unrealised liabilities / realised liabilities - % liabilities / assets	Cash position /total assets Industrial and commercial loans / total assets Gross loans / total assets Market assets / total assets Net result / total assets Total liabilities / total assets Loans of more than 90 days/ total assets … Ln total assets
Curry, Fissel and Hanweck (2008)	3534 bank holdings from 1988 to 2000 Data from annual and quarterly reports and from CRSP (*Center for Research in Security Prices*) Logistic decline	Development of BOPEC rating[7] from BHC : maintenance, improvements, deterioration	Volatility of securities, abnormal results, volatility of results, *market to book*, volume exchanged (*trading* volume) Cyclical changes in economic conditions: recession and banking crisis (1988-1992), revival (1993-1995), growth (1996-2000) Size of company
Liao, Chen and Lu (2009)	American bank data from 2001 to 2005 38 banks	Δ of the value of the bank's assets Δ of liabilities rate without risk	Characteristics of the company (bank value, profitability of assets, volatility of assets, rate of distribution of dividends, tax rate, financial leverage, speed of adjustment to financial leverage target) Interest rate (rate without risk, correlation between bank value and rate without risk, volatility of rate without risk) Information linked to failure (maturity, recovery) Allowance for asset risk

[7] Rating assigned by the regulatory authorities

The influence of changes in the value of US bank securities, reflecting market discipline, on managerial actions is tested by Bliss and Flannery (2002). These authors demonstrate that there is no proof that investors (holders of shares and bonds) regularly influence managerial decisions, apprehended by variation in financial leverage, from that of bank asset risk and measurements of managerial actions (see table 1). They come to the conclusion that market discipline « remains more a matter of faith than of empirical evidence». Nier and Baumann (2006) underline that literature prior to Basle II (Berger, 1991; Bliss and Flannery, 2002; Hamalainen et al., 2005) was about the negative reactions of the price to any information on risk. This literature does not show what the degree of market discipline is and even less if the existence of market discipline influences the behaviour of banks.

On the other hand, by using synthesised information such as the ratings assigned by the rating agencies or regulatory authorities, authors like Liao et al. (2009) or Curry et al. (2008) show that progression of the bank *rating* permits the exercise of market discipline. Liao et al. (2009) study the effects of asymmetry of information and agency in the assessment of bank credit risk. They show that the problems of agency and information asymmetry create gaps in the assessment of credit risk of rating agencies, which affects the value of bank security. Similarly, Curry et al. (2008) show that the market is capable of improving anticipation of movements of the BOPEC rating from accounting ratios.
They confirm the presence of market discipline: capital in terms of market value improves the ability to explain and predict changes in *ratings* and contain information about financial risks of banks. The market value of capital gives an assessment that is independent and of sufficient economic importance on bank risk that it permits efficient market discipline. They conclude with the fact that an implicated policy increasing bank transparency, by way of Basle II, improves market discipline and permits the financial market to better predict bank risks and to influence risk taking by banks. Following the same lines as the recommendations of Curry et al. (2008), the next point will present the regulatory provisions of the Basle Committee on bank transparency and market discipline, along with academic works.

2. Bank transparency and regulatory discipline

Before looking specifically at works on the Basle II regulations and bank transparency, a short presentation of Pillar III is necessary to define the kind of information that banks will have to communicate from now on. Then, academic works especially those critical of Pillar III of Basle II are examined as well as works that see in Basle II a good opportunity to reinforce bank transparency and so market discipline.

2.1. Pillar III on bank transparency in the Basle II framework

Bank transparency was specifically the subject of the first report by the Basle Committee in 1998, studies on practices in the banking sector (1999, 2001 and 2003) and Pillar III in the revised framework of Basle II in order to reinforce market discipline exerted on the banks.

6 BOPEC is a composite rating which reflects the bank's situation from the bank's subsidiaries, other non-bank subsidiaries, the parent company, earnings and capital adequacy.

This Pillar III complements the other two pillars of the framework: requirement in regulatory capital to meet credit, market and operational risks (Pillar I) and prudential supervision (Pillar II). Basle II is designed in such a way that the three pillars reinforce each other in order to protect depositors and especially to anticipate systemic risk at the origin of banking crises. Bank disclosure vis-à-vis the market is therefore central in this third pillar in order to enhance bank transparency and to permit better supervision and influence market players (Bliss and Flannery, 2002). The qualitative and quantitative information generated by the bank, especially by means of internal rating models within the organisation, also aims for better monitoring of bank risks by allowing for better adequacy of regulatory capital.
Pillar III recommends that relevant information, the relevance of which is left to the discretionary judgement of the bank managers, be communicated by whatever means available to the bank: periodic reports, the Internet, etc. This information is published half-yearly unless in particular circumstances. Table 2 shows the type of information that banks must communicate to the market:

Table 2: General requirements of financial disclosure of pillar III of Basle II

	Qualitative information	**Quantitative information**
Application field	Name of mother company of group Presentation of differences in consolidation principles	Aggregate amount of surplus capital of insurance subsidiaries Aggregate amount of capital deficiencies in all the subsidiaries not included in the consolidation Aggregate amount of the total investments of the company in insurance companies
Structure of capital equity	Summary of information on the principal contractual characteristics of the contract of all the elements of capital, in particular innovative, complex or hybrid instruments	Amount of capital base Total amount of complementary and extra complementary capital Other elements to be deducted from capital Total eligible capital
Adequacy of capital equity	Brief analysis of the approach adopted by the bank to evaluate the adequacy of its capital to sustain its present and future activities	Capital requirements for credit risk Capital requirements for share exposure subject to IRB (internal rating) approach Capital requirements for market risk Capital requirements for operational risk Ratio of base equity and global ratio

Source: extract from the Basle Committee (2006)

The Basle Committee (2006) adds that for each type of risk (credit, market, operational, and interest rate in the bank portfolio and on shares), the banks must describe their risk management aims and policies, especially:

- their strategies and procedures;
- the structure and organisation of the corresponding risk management department;
- the scope and type of notification systems and/or risk measurement ;
- their policies with regard to risk cover and/or reduction as well as strategies and procedures for monitoring on-going efficiency of covers and/or compensation techniques.

The following table specifies the type of information that should be disclosed by the banks to the market in relation to the three risks regulated by Pillar I of the Basle II reform:

Table 3 : Disclosure requirements for credit, market and operational risks

	Points	Qualitative information	Quantitative information
Credit risk	General information expected from all banks	General qualitative requirements: • definition of unpaid and/or depreciated exposures • description of the approaches adopted for general and specific provisions as well as statistical methods • analysis of the policy of credit risk management followed by the bank • for banks that have partially adopted the IRB approach, description of the nature of exposures in each portfolio that have been submitted to 1) standard, 2) foundation IRB and 3) advanced IRB approaches	Total gross exposure to credit risk Geographical spread of exposure Exposure spread by sector of activity or type of counterparty Spread of residual contractual maturity dates for all the portfolio By major sector or counterparty categories the amount of depreciated and unpaid debts and general and specific provisions Amount of depreciated and unpaid debts Reconciliation of variation of provisions for depreciated debts For each portfolio amount of exposure subject to 1) standardised, 2) foundation IRB and 3) advanced IRB approaches
	Financial communication related to portfolios in a standard approach	• registered name of OEEC and OCE • types of exposures for which it is recognised at these organisations • description of the procedure for adaptation of credit evaluations of public issues to similar assets held in the bank portfolio • alignment on risk bands	Amounts after taking into account risk cover off-setting Bank outstandings (rated and not rated) in each risk band
	Financial disclosure related to portfolios in IRB approaches	Authorisation from control authorities to apply the approach Explanations and examination : • of the structure of internal rating and links between internal and external ratings • use of internal estimates for purposes other than capital assessment according to IRB approach • of the management procedure and consideration of credit risk reduction • control mechanisms of the rating system Description of internal rating process, set up separately over five different portfolios: companies, sovereign borrowers and banks; shares; residential property mortgages; renewable exposures on eligible retail clients; other exposures on retail clients As well as, for each portfolio: types of exposures; definitions, methods and data used for estimates and PD validation and (for portfolios using advanced IRB approach) PCD and/or EAD, including mortgages used to obtain these variables; a description of deviations.	For each portfolio: • total exposures • for banks adopting the advanced IRB approach, average loss in case of weighted default depending on the exposure (in percentage terms) and the weighting of the average weighted exposure For banks adopting the advanced IRB approach, amount of lines of non-realised credit and weighted average EAD depending on exposures for each portfolio Actual losses (write-offs and specific provisions, for example) during the preceding period for each portfolio (as defined above) and differences from the previous experience Bank estimates reported in the actual results over a long period

Market risk	Information expected from the banks adopting the standard approach	General requirements of qualitative information related to market risks, including the portfolios covered by the standard approach	Capital requirements for: • interest rate risk • share position risk • exchange risk • base product risk
	Information required from the banks adopting the internal model approach (IMA)	General requirements of qualitative information related to market risks Description of reliability of criteria on which the internal assessment is based For each portfolio covered by IMA: • characteristics of models used • description of crisis simulations applied to the portfolio • description of the approach used for *ex post* checks / validation of the accuracy and the coherence of internal models and modelling process Extent of approval by the control authority	For negotiation portfolios covered by IMA: • maximum, average and minimum VaR values during the period examined and at the end of the period • comparison of VaR estimates and actual profit/loss recorded by the bank as well as analysis of any substantial post-results "extraordinary events"
Operational risk		Description of advanced measurement approach if it is used and description of recourse to insurance to reduce operational risk	

Source: extract from Basle Committee (2006)

Disclosure requirements regarding techniques for risk reduction, securitisation activities and exposure to counterparty risk of the bank are also formulated in the third pillar of the Basle II system (2006).

2.2 Literature on Basle II transparency and regulation

Literature on Pillar III of the Basle II reform is mainly critical. Kaplanski and Levy (2007) consider that the requirement level of Basle II is not effective today and results in an inefficient use of *reporting* and disclosure procedures.

Criticisms of Basle II and in particular of bank disclosure are also reported by Linnell (2001). He considers pillar III as the most important, but notes that the disclosure requirements, both in developed and developing countries, are extremely poor. He demonstrates that poor disclosure practices do not facilitate effective market discipline and thus lead managers to make good decisions. He adds that banks with low communication levels also tend to have inadequate internal information systems. Bad decisions are made at all levels in banks. Similarly, Hall (2006) takes up some of the criticisms directed at the Basle Committee on:

- the missed opportunity to strengthen even more prudential regulation by regulatory actions (such as *prompt corrective actions*) ;
- the increase in information disclosure required in Pillar III is not sufficient to encourage effective market discipline so that the stakeholders may supervise and influence the behaviour of banks on the market (Hamaleinen et al., 2005) ;
- the lack of information on loan structure, securities held, provisions, financing structure, risky assets, etc.

Like the previous authors, pop (2007) points to the « reducing vision of market discipline in Pillar III of Basle II ». For Pop, banking securities send information to the market that may be integrated into bank supervision in the form of prompt corrective actions (Hall, 2006), in the insurance premiums of deposits, for example. Better bank transparency may come from the cost of subordinated debt contracted by the banks on the market. In effect, an increase in disclosure leads to an increase in regulatory discipline and so an increase in market discipline.

Market discipline is brought to bear directly through the issue cost, on the primary market, which is contingent on the bank's risk taking. It is also exerted indirectly through observation of variations in price (*spreads*) on the secondary market by the regulator and other stakeholders. The underlying hypothesis is that prices on the secondary market are sensitive to the bank's risk taking. The literature and the empirical study carried out by the author show that the secondary debt market fixes the price of the bank risk appropriately. The information generated by the market is integrated into the regulatory systems in force in Europe but the type of information that allows for regulatory discipline is mainly *soft*. The issue of subordinated debt by banks improves transparency and effective information disclosure.

However, other works point up the necessity of Pillar III of Basle II and the opportunity for these regulations to improve transparency and market discipline. Hall (2006) underlines the "golden" opportunity to strengthen market discipline in the context of the regulatory process. Pillar III of Basle II is clearly necessary to improve bank disclosure (half-yearly) to the market and in particular with regard to the following information:

- capital structure by presentation of the exact components of Tiers 1, 2 and 3 ;
- risk exposures (credit, market and operational) by way of both quantitative and qualitative information given to the market;
- capital adequacy by disclosing ratios and qualitative information on the internal rating systems and capital evaluation.

Some works show that reinforcement of the level of the bank's capital improves, due to greater transparency, the security of depositors. The precursory work of Kane (1995) shows the difficulty in reinforcing capital requirements in banks constituted by clusters of complex contracts which lack transparency. Reinforcing capital requirements ensures better protection of depositors when there is a poor information system.

Table 4 below provides information about data and variables used by empirical works that explain the link between transparency and regulatory discipline:

Table 4: Synthesis of empirical works on transparency and regulatory discipline

Authors	Database	Explained variable	Explanatory variables
DeYoung et al. (2001)	3992 observations on 1079 banks between the 2nd quarter 1986 and the 1st quarter 1995 Confidential data : CAMEL ratings and inspection dates are given by the OTC Data on the *spread*, debt and *call* are from Warga/Lehman Brothers Corporate Fixed Income Database Other data from FRY-9C reports and CRSP tapes	Bank ratings (CAMEL) and *spreads* of the risky debt of the mother companies	Total assets Ln total assets ROA Debts / computing capital Loans of more than 90 days/ total assets Loans not paid for more than 60 days/ total assets Other property loans / total assets Absolute value of maturity differentials of one year / computing capital
Nier and Baumann (2006)	729 banks of 32 countries from 1993 to 2000 Data from Bankscope, Bloomberg, International Financial Statistics etc. Deteriorations in panel data	Capital level: debt ratio = capital/ (debts + deposits)	Government support (1 if rating given by Fitch show that recovery is probable, 0 if not) Financing not guaranteed: % interbank deposits in liabilities, % subordinated debt in liabilities Communication : composite index

			from 18 elements of Bankscope + bank quoted on NASDAQ or NYSE or AMEX[8] + rating of one of the 3 agencies[9] Size of bank ROE Volatility of security Real GDP Deposit insurance index Market capitalisation Solvability ratio

De Young and al. (2001) examine the production of useful information from regulatory inspections for the benefit of the market. Controls carried out by the regulatory authorities that have access to sensitive information, may supply new and relevant information especially during on-site inspections. The authors show that the costs of the debt do not immediately reflect this information but the market value is probably influenced by regulatory actions as a result of the information being highlighted during the inspections. So, the information collected by the authorities has consequences for market and regulatory discipline of big banks. The authors demonstrate that regulatory discipline partially takes the place of private market discipline. They also show that regulatory discipline encourages and reinforces the discipline of investors in bonds vis-à-vis the risks taken by the bank. For investors, regulatory action leads to a reduction in the probability of bank failure and non-disclosure of CAMEL *rating* in particular, improves control capacity and bank discipline by the market.

Similarly, Nier and Baumann (2006) show that market discipline can effectively stimulate banks to limit their risk of failure through a regulatory safety cushion. The strength of market discipline is linked to government support, to the fact that bank risk choices can be observed and to the proportion of non-guaranteed liabilities on the balance sheet. Regarding the first aspect, Landskroner and Paroush (2008) consider market discipline, exerted mainly by means of Pillar III of Basle II, as a mechanism that can in a way increase or replace government interventions. The main results of Nier and Baumann (2006) are the following:

- market discipline is an effective discipline mechanism;
- government support leads to a reduction of the safety cushion by the banks;
- the discipline resulting from disclosure and non-guaranteed financing influences banks to limit their risk of insolvency by keeping a higher safety cushion; this discipline is limited in countries with high levels of government support;
- competition drives banks to take higher risks; the stronger the competition the more effective market discipline will be.

Having presented papers that deal with transparency as a condition of market discipline and effective regulation, now we will see, through the literature, how transparency allows the regulator to achieve the dual objective of protecting depositors and the banking sector from crises.

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8 [7] 1 if quoted on NYSE, NASDAQ or AMEX, otherwise 0. The idea is that if the bank is quoted on one of these markets that are very demanding with regard to disclosure, this is an indicator of its transparency.

9 [8] Rating agencies operate as intermediaries in the communication process. They have access to information that is not accessible to investors and evaluate this information through the assigned rating. The rating permits the internal information to be incorporated without discloing the details to the market (Kliger and Sarig, 2000). A *dummy* assigns the value 1 if the bank is rated, otherwise 0.

3 Bank transparency and protection from crises?

It seems to be accepted that the market needs information in order to be able to establish a price that allows stronger performance. However, if information seems necessary for correct functioning of the markets and regulation, is the duty of banks to disclose more and more always synonymous with reduced systemic risk or on the other hand, does it not push banks to take too much risk so that they can disclose what the markets expect? The point about sharing information about debtors between banks is first analysed, then the implications of transparency for the protection of depositors, to finish with the relationship between transparency and banking crises, the consequences of uncontrolled systemic risk.

3.1 Sharing information between banks

The sharing of information between informed and uninformed agencies is the subject of vast amounts of literature and can first be found in the works of Grossman (1976) and Grossman and Stiglitz (1980). So, the price system makes information obtained by informed individuals publicly available for the benefit of those not informed.

The idea that information sharing between banks helps to reduce problems of information asymmetry can be found in the works of Pagano and Jappelli (1993); Padilla and Pagano (2000); Japelli and Pagano (2002); Brown, Jappelli and Pagano (2009). Pagano and Jappelli (1993) show that lenders have the incentive to share information about their borrowers. This incentive is positively linked to the mobility and heterogeneity of lenders, to the size of the credit market and to advances in information technology. This cooperation regarding information between banks limits the entry of new competitors on the market and facilitates an increase in the volume of loans when the problems of moral hazard of the credit market are too great.
Japelli and Pagano (2002) have studied communication between banks in 39 countries. They show that lenders in many countries communicate about the risk of their clients. The type and quantity of information shared varies from country to country and the information exchange is often done through credit bureaus. They highlight the link between the size of the credit market and the information sharing between the banks and so confirm the literature that maintains that public and private information sharing facilitates a reduction in risk.

Kallberg and Udell (2003) examine the manner in which information is collected and transferred by Broker Dun & Bradstreet[10]. They point up the importance of private information about lending decisions: creditors produce and hold information about their borrowers and can share this with other banks through formal information sharing agreements. The information generated during exchanges explains the power of models for predicting failure by insisting especially on the quality of the borrower. Finally, like Japelli and Pagano (2002) they find that formal information sharing contributes positively to the

10 [9] The nature of the information gathered today by Broker Dun & Bradstreet is essentially quantitative while in the 19th century, this information was of a « *softer* » nature.

[10] The Paydex score is a composite measurement of the payment history of the company over the last thirteen months.

functioning of the credit market. The difference is in the « micro » approach used; the authors analyse the value of exchanged/generated information for credit decisions.
Table 5 gives details on the studies carried out by Japelli and Pagano (2002) and Kallberg and Udell (2003).

Table 5 : Synthesis of empirical works on information sharing between banks

Authors	Database	Explained variable	Explanatory variables
Japelli and Pagano (2002)	Data from research in credit institutions and central banks of 39 countries Logit-probit model	Information sharing between banks /GNP = Bank credits of the sector /GNP	Information about the credit risk of the debtor (default measurement): GDP, origins of French, German and Scandinavian credit law, type of information: « Black » information (negative on borrower default) & « white » information (positive on credit history, current client debt)
Kallberg and Udell (2003)	241 companies that went bankrupt and 2482 companies in activity Data from the database of broker Dun & Bradstreet Corporation data Univariable analyses and discriminant analysis	Hypothesis tested : exchanged private information generates valuable information for creditors Bankruptcy of company	Univariable analysis between the Paydex[11] score and the probability of bankruptcy of the company Paydum = *dummy* when Paydex is not available Quality of the borrower (accounting indicators like CA, financial leverage etc. or economic like the number of employees, age of the company, guarantees etc.

3.2 Bank transparency and risk for depositors

The literature concerning bank transparency as a way to protect depositors is essentially theoretical. As far as we know, no empirical study on this subject has been done. Rochet (1992), Cordella and Yeyati (1998) and Blum (2002) show that in the absence of agency cost, if deposits are not insured and the depositors can identify the risk taking of the bank, the choice in terms of bank risk is relevant. The reason is that the bank integrates into its choices the impact of risk taking on the depositors who demand in return a higher remuneration if the bank maintains a high level of risk. In a system like that, market discipline is perfect and there is no moral hazard. However, if the deposits are insured and the depositors cannot see the choice in terms of risk, then the bank may take a real risk at a higher level and at the expense of the depositors. The reason is that the depositors do not demand higher remuneration on account of the risk profile of the bank. In such a system, there is no market discipline and the choice of the bank in relation to its risk of failure is subject to moral hazard.

The impact of public disclosure about risk exposure of the bank on its failure probability is analysed by Cordella and Yeyati (1998). They study, in particular, the impact of public disclosure of bank risk profile on the incentives to risk taking by the bank and the impact of the presence of informed depositors on the stability of the banking system. The underlying idea is that, in the absence of a deposit insurance system, public disclosure on the financial situation of the bank can lead the depositors to supervise its performance and hence reduce its risk taking. The transparency can then make the banking system more sensitive to systemic shocks and have substantial economic consequences. When banks do not control their exposure to risk (especially subject to a high systemic risk), information disclosure on the

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bank's portfolio and the presence of well informed depositors can increase the probability of bank failure. On the other hand, when banks have full control of the volatility of their loan portfolios, public disclosure reduces the probability of banking crises. The presence of depositors who are better informed, especially about bank results, can be found also in Freixas and Parigi (1998) when they create a model for the contagion phenomena (or efficiency) in interbank payment systems.

Likewise, Hasman and Samartin (2008) explain financial and systemic crises starting from the example of the bank run of the depositors of Northern Rock in 2007 in Great Britain. These financial and systemic crises are the result of an accumulation of information by the depositors, of fundamental weaknesses and of an incomplete structure of the bank market. Referring to the ideas of Allen and Gale (2000), the authors show that banks maintain links to each other to insure against « *technological shocks* », thus showing their fragility faced with the acquisition of information by depositors. Their establishment of a model includes the cost of voluntary acquisition of information by depositors, which does not allow them to keep deposits in several banks.

3.3 Bank transparency and banking crises

In view of the current world crisis, the question arises as to the role of bank disclosure and transparency as a factor that limits or accelerates the crisis. Analysing the relationship between bank transparency and the weakness of the banking system has been the subject of numerous theoretical and empirical works. Chen and Hasan (2006) show that bank runs of informational origin may be ineffective and reduce the wealth of depositors. These losses may possibly be taken into consideration by the regulator. Greater bank transparency may reduce the wealth of depositors by reducing the possibility of spreading panic to other banks. An insurance system for deposits, whereby some depositors are fully insured and others only partially, may improve this propagation problem. In fact, bank runs, against the background of such a system, act as an effective mechanism of bank discipline.
Likewise, Giannetti (2007) analyses banking crises in emerging countries. He starts with a study carried out in 2003 on the effects of transparency (incomplete information on the quality of bank assets) on the stability of the banking system. He comes to the same conclusions as Nier (2005) who explains that banks that communicate more information on their assets are less likely to see their financing costs increasing. He also comes to the same conclusions as Tadesse (2006) who shows that greater transparency reduces the probability of systemic banking crises. For Giannetti (2007), the measures that improve transparency increase financial stability or at least limit the accumulation of bad debts. This depends as much on the will of banks as on market discipline of enhanced transparency.

Following on the same lines as the previous theoretical papers, the following empirical works explain banking crises from informational problems. Table 6 below gives additional information about the empirical studies.

Table 6 : Summary of empirical works on transparency, moral hazard and banking crises

Authors	Data base	Explained variable	Explanatory variables
Caprio (1998)	Descriptive study of 12 Asian and Latin American countries	Banking crises	Measurement of the transparency based on an index of corruption and a *ratings* classification of the sample countries
Nier (2005)	550 quoted banks of 32 countries between 1994 and 2000 Data from Bankscope Probit decline	Banking stability within a country	Market indicators of banking problems: Δ of the price of securities Measurement of transparency of the bank [12] : composite index compiled from 17 items from Bankscope (the same index found in the works of Baumann and Nier (2004) and Nier and Baumann (2006)) ln total assets, Béta, ROA Growth rate of real GDP Market interest rates
Tadesse (2006)	Study of 392 banks of the banking sector of 49 countries from 1990 to 1997 (or 21 banking crises for 20 countries) Data from the database on banking supervision and World Bank regulation compiled by Barth et al. (2001) Logit models	Banking crises: 1 if the country had a systemic crisis between 1990 and 1997 (based on crises censuses by Caprio and Klingebiel, 2003)	Bank transparency (Appendix 1) Control variables : Bank concentration, bank competition, restriction on bank activities, ratio of exportation price index over that of importation, inflation, GDP, presence in the country of a deposit insurance system

In two studies carried out by World Bank economists, Caprio and Klingebiel (2003) identify all banking and financial crises since the end of the 1970s. Caprio (1998), in this article, lays the foundations of future works aiming to analyse banking crises from macro and micro economic variables especially bank transparency. The author recommends bank supervision by stakeholders (shareholders, investors and the regulator) to limit informational problems.
More specifically, Nier (2005) examines the benefit of *ex ante* or *ex post* transparency and its effects on banking stability. He shows that transparency reduces the likelihood of major bank problems and so improves overall financial stability. Thus he reasserts the full importance of Pillar III of Basle II. For Nier, the rise in *ex ante* transparency improves market discipline exerted on banks, because the risk taking can be monitored more easily, thus limiting the likelihood of failure. A high level of transparency leads to a higher supervision level, lower financing cost and also a lower risk profile. The positive relation between the financing cost and the risk profile confirms what Cordella and Yeyati (1998) had shown. On the other hand, the *ex post* beneficial effects of transparency are far less obvious. Moreover, transparency may be "bad" if banks in difficulty have suffered an exogenous shock. More information generates market reaction which can worsen the bank's situation (Cordella and Yeyati, 1998). Besides, transparency is « good » *ex post* if it limits the contagion towards banks that have not been affected by the same problems or shocks. Transparency in this case helps depositors and

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 Barth et al. (2002) emphasise the difficulty of measuring bank transparency. They show as well that banking crises, that may have an informational origin, can be affected by many factors especially macro-economic ones, all equally difficult to appreciate.

the market to distinguish solvent banks from those that are not. The author takes up the idea of Giannetti (2003) for whom international capital flows are subject to contagion and are the outcome of information asymmetries between international investors and emerging market banks. Along the same lines, Tadesse (2006) focuses on the economic consequences of regulated bank disclosure especially with regard to the stability of the sector. Banking crises are less likely in countries where transparency and regulatory disclosure are high especially when:

- the information is more comprehensible;
- the financial *reporting* is more timely;
- the *reporting* gives more information;
- the financial disclosure is more credible.

Tadesse demonstrates the positive impact of accounting information on the real economy and recommends developed measurements of transparency as outlined in Appendix 1. The author's results are coherent with the literature that emphasises information asymmetries and the way in which regulated disclosure facilitates limiting these. The effects of greater bank disclosure and the consequences of bank transparency have positive economic effects on the stability of the banking sector.

Conclusion

Information is at the heart of the current debate about banks. They are being encouraged to be more and more transparent not just by the regulator and the financial markets but also by associations for the defence of depositors. Academic literature has been interested in this need for transparency for a long time and is currently focused on the need to inform the markets and the regulator so that they are in a position to discipline the banks and especially the bank managers in their decision making. In fact, an inseparable link between regular disclosure and bank transparency exists to allow for greater discipline of the latter. As the literature shows, the market is a vector for transmission of information from banks to the market, but market discipline may prove to be limited either because of lack of competence and motivation of players on the market to provide efficient supervision (depositors having their deposits insured, shareholders with their diversified portfolios, etc.) or by the banks selecting the information that seems « relevant » to them and often in their favour. Moreover, empirical studies on the subject clearly show that there is no proof of the influence of market discipline on bank behaviour (Bliss and Flannery, 2002; Berger, 1991; Hamalainen and al., 2005).

In view of numerous bank failures and banking crises linked to excessive individual risk taking that has led to a rise in general insecurity, the Basle Committee in its revised reform of 2006 has made it a point of principle to reinforce market discipline by requiring the banks to disclose sensitive information on their risk management practices. In spite of this will on the part of the regulatory authority, the literature seems lukewarm about Pillar III of Basle II: some consider it insufficient while others see in it as an opportunity to strengthen market discipline within the context of the three complementary regulatory pillars. The empirical literature even shows some substitution of regulatory discipline by market discipline, even if the first clearly reinforces the second as a result of the information communicated following on-site bank inspections and the formal obligation of Basle II with regard to transparency.

The literature also demonstrates the existence of interbank transparency based on the quality and risk of debtors. Studies point to formal exchanges of information between banks that facilitate better functioning of the credit market. This is all the more true for structured financing transactions when bank syndicates are formed to finance large loans. As regards the aim of protecting depositors, the literature clearly shows the risk of bank transparency for depositors when they are aware of the difficulties. The risk of bank runs, resulting from

massive withdrawals by depositors, can only precipitate bank failure. Furthermore, even when the bank is healthy, enhanced tranparency will only have a limited effect on the discipline exerted by depositors because of the systems for insuring deposits in force in many countries. As for the second aim of the Basle Committee which is to prevent the incidence of and to curb the harmful effects of systemic risk, the theoretical and empirical works on the subject show that more enhanced transparency improves financial stability and so prevents crises.

Addressing the issue of this article regarding whether bank transparency really helps the markets and the regulators, the literature consulted teaches us:

- that bank transparency does indeed facilitate efficient market discipline to supervise and monitor excessive risk taking by banks in order to limit failure and banking crises due to systemic risk;
- but when a bank is in difficulty, disclosure to the market may lead to bank runs because of massive withdrawals by depositors, an example being the failure of Northern Rock in 2007, and, as the current crisis shows, of market investors reacting to an exogenous shock, that first affected the American property market, then the banking sector, before contaminating world economies as a whole.

Today, after the G20 summit and the mobilisation of the Basle Committee, the issue of bank transparency remains centre stage as indicated by the number of studies carried out by Caruana (2010) on how to deal with systemic risk and improve financial stability.

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APPENDIX

Appendix 1: Breakdown of bank transparency measurements according to Tadesse (2006, p. 65) based on the Database of Barth et al. (2001)

Transparency variables	**Proxy and definition**	**Measurements**
Quality of regulated disclosure: Measurement of the manner in which regulatory authorities improve the quality of bank reporting	*Intensity of disclosure :* Measurement of the scale and comprehension of financial *reporting* required of the banks	4 variables : 1. 1 if presentation of non-performing loans 2. 1 if the consolidated financial positions and those of the subsidiaries are required 3. 1 if *reporting* on the off-balance-sheet information (derived products) is public 4. 1 if *reporting* on risk management practice is public
	Degree of information of the disclosure : Measures the degree of accuracy of the information communicated that reflects the situation of the bank	4 variables : 1. 1 if presentation of non-performing loans 2. 1 if the consolidated financial positions and those of the subsidiaries are required
	Timeliness / periodicity of the communication : Measures communication regularly	Index of average frequency of communication and comprehension of interim financial reports
	Credibility of the information : Measurement of the degree of independence, professionalism and rigour of external auditors	5 variables : 1. mandatory audit : 1 if external audit is mandatory in the country 2. extent of audit requirement : 1 if the regulations sanction the extent of external audit 3. Requirements in terms of licence : 1 if audit is licensed or certified 4. transfer of audit reports to the regulator : 1 the report must be communicated to the regulator 5. meeting between the auditor and the regulator outside bank agreement: 1 if the regulator can meet the external auditor to discuss about the report without the consent of the audited bank.
Acquiring private information	Measurement of the degree of private information collected and treated by investors or based on investor beliefs. Information other than that available in bank *reporting*.	Number of the analysts following the bank in the country (total number of analysts / total number of banks in the country) (measurement found at Bushman and Smith, 2003 and Bushman et al., 2004).
Information disclosure	Measurement of the publication of information on the bank in the country.	Average rank of country by number of newspapers and televisions (measurement found at Bushman and Smith, 2003 and Bushman et al., 2004).