

# A STUDY OF DETERMINANTS OF SOCIAL DISCLOSURE LEVEL IN UK BANKS

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## Abstract

This paper investigates the determinants of the social disclosure level in UK banks over the period 1981-1996. Content analysis is used to measure the social disclosure level. The regression results show that market structure, investment in information technology and risk factors, which have not been considered in previous studies, have a significant impact on the social disclosure level. In addition, bank size and profitability are significant but the listing status and the age of the bank are insignificant.

**Keywords:** social disclosure, banks, market structure

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## Introduction

It is well known that some companies believe that, besides their economic role in producing goods and/or services to fulfil consumers' needs, they should also have a social role in the society as argued by Hackston and Milne (1996). However, the reasons for that belief might differ from one company to another. Some companies might voluntarily get involved in conducting social activities and disclose information about these activities in their annual reports to gain good reputation in the society as argued by Alnajjar (2000). Earlier studies mention some reasons for this as: the motivation to compete, the need to legitimise their behaviour in society and to fulfil the requirements of the law {see for instance Al-Khater and Naser (2003); Nafez and Naser (1999) and Teoh and Thong (1984)}.

Most social disclosure studies concentrate on a one-year study period. Hamid (2004, p. 118) stated that "Research in specific industry will allow the researcher to see some specific pattern in disclosure theme for those industries because all social disclosure items were treated equally". The study of Hamid (2004) about social disclosure by banks in Malaysia concentrates on one year only for the study period. A weakness of this is that disclosing of social information changes through time and using just one year is not long enough to understand changes in the social disclosure level and the determinants of these changes. This can only be achieved through conducting a longitudinal study. This paper reports a long-term study of social disclosure in UK banks. There is no previous longitudinal study of the banking sector. Also, prior studies about the determinants of the social disclosure level have ignored the effects of variables such as market structure, investment in information technology and risk on social disclosure

levels. The purpose of this paper is to address these points by examining the social disclosure level in UK banks over the period 1981-1996 and by considering explanatory variables, which have ignored in previous studies.

Section II examines the literature on the social disclosure level and explains the construction of an index to measure the social disclosure level. The new variables proposed to explain the social disclosure level are then discussed and include market structure, investment in information technology and risk. Section III covers the research method. Section IV discusses the empirical evidence on the relationship between social disclosure level and independent variables. Section V presents the conclusions.

## II. Literature review

For the purposes of this study the literature review will be split into two parts, the first will cover the categories of social disclosure and the second will be about the determinants of the social disclosure level.

### II. 1: Social disclosure level and its categories

The purpose of this part of the literature review is to decide how to construct an index to measure the social disclosure level of banks.

The literature will be evaluated based on the following statements:

- "The identification and categorization of social responsibility information is a subjective task, because there is no widely accepted definition of 'social responsibility' or agreement as to what constitutes a corporate socially responsible activity" as stated by Berestford and Cowen (1979, p.p. 15-16).

**Table 1.** Review of the studies that investigated the level of social disclosure and its categories in the annual reports of the companies

| Author and year               | Study period     | Country                | Social disclosure categories used   | Measure of social disclosure level | No of banks in the study sample | The resulting ranking of the categories in descending order  |
|-------------------------------|------------------|------------------------|---|------------------------------------|---------------------------------|--|
| Ernst & Ernst<br>1978         | 1977             | US                     | - Environment<br>- Energy<br>- Fair business practice<br>- Human resources<br>- Community involvement<br>- Product<br>- Other | Average no. of pages               | 50                              | - Fair business practice<br>- Community involvement and Other<br>- Human resources<br>- Product<br>- Energy<br>- Environment   |
| Andrew et al<br>1989          | 1983             | Malaysia and Singapore | - Human resources<br>- Community involvement<br>- Environment<br>- Product  | No. of pages                       | 7                               | - Human resources<br>- Products<br>- Community involvement<br>- Environment  |
| Zeghal and Ahmed<br>1990      | 1981-82          | Canada                 | - Environment<br>- Energy<br>- Fair business practice<br>- Human resources<br>- Community involvement<br>- Product<br>- Other | No. of words                       | 6                               | - Human resources<br>- Product<br>- Fair business practice<br>- Community involvement<br>- Other<br>- Energy<br>- Environment  |
| Lynn<br>1992                  | 1989             | Hong Kong              | - Staff development<br>- Community relation<br><br>- Staff development and community relation<br>- Environmental issues       | No. of pages                       | 23                              | - Staff development<br>- Community relation<br><br>- Staff development and community relation<br>- Environmental issues  |
| Savage<br>1994                | 1992/<br>93      | South Africa           | - Human resources<br>- Community involvement<br>- Environment   | No. of pages                       | 8                               | - Human resources<br>- Community involvement<br>- Environment  |
| Tsang<br>1998                 | 1986-<br>1995    | Singapore              | - Environmental<br>- Human resources<br>- Community involvement<br>- Other  | No. of sentences                   | 6                               | In all years disclosure for human resources theme was number 1 and community involvement theme was number 2. For the period from 1986 to 1990: others theme was number 3 and environment theme was number 4. . For the period from 1991 to 1995: environment theme was number 3 and others theme was number 4. |
| Nafez and Kamal<br>2000       |                  | Jordan                 | - Environment<br>- Energy<br>- Human resources<br>- Product<br>- Community involvement<br>- Other                             | Average no. of pages               | 17                              | - Human resources and community involvement.<br>- Product<br>- Environment<br>- Energy and other   |
| Belal<br>2001                 | 1997             | Bangladesh             | - Employee<br>- Ethical<br>- Other  | Average no. of lines               | 1                               | - Employee<br>- Other<br>- Ethical   |
| Kuasirikun and Sherer<br>2004 | 1993 and<br>1999 | Thailand               | - Employee<br>- Environmental<br>- Community involvement  | Average no. of pages               | 12                              | For the two years:<br>- Employee<br>- Environmental<br>- Community involvement   |
| Hamid<br>2004                 | 1999             | Malaysia               | - Environment<br>- Human resources<br>- Community involvement<br>- Product  | No. of pages                       | 33                              | - Product<br>- Human resources<br>- Community involvement<br>- Environment   |

- "In spite of many years of experience, corporate social accounting has no unifying paradigm and a framework for adequate disclosure is still not developed" as stated by Zeghal and Ahmed (1990, p.38)

- "There is no established accounting guidelines for social reporting disclosure" as stated by Alnajjar (2000, p.164).

A number of studies have been undertaken to examine the level of social disclosure and its categories in the annual reports of the companies in different countries and these are summarized in table 1 above.

**Table 2.** Summary of the categories used in banks

| Categories             | Frequency of Consideration | Frequency of Ranking |   |   |   |   |   |   |
|------------------------|----------------------------|----------------------|---|---|---|---|---|---|
|                        |                            | 1                    | 2 | 3 | 4 | 5 | 6 | 7 |
| Environment            | 9                          |                      | 1 | 2 | 5 |   | 1 | 1 |
| Energy                 | 3                          |                      |   |   |   | 2 | 1 |   |
| Fair Business Practice | 2                          | 1                    |   |   |   |   |   |   |
| Human Resources        | 10                         | 8                    | 1 | 1 |   |   |   |   |
| Community Involvement  | 9                          | 1                    | 4 | 3 | 1 |   |   |   |
| Product                | 5                          | 1                    | 2 | 1 | 1 |   |   |   |
| Ethical                | 1                          |                      |   | 1 |   |   |   |   |
| Other                  | 5                          |                      | 2 | 1 |   | 2 |   |   |

On the other hand and based on the information shown in table 2 we can conclude that categorizing of social information is still not an objective mission and hence there is no agreed scientific framework to depend on as a basis for constructing an index of the disclosure level in e.g. the annual reports of the companies (and this is consistent with the statements mentioned-above). In the absence of an acceptable framework for the social disclosure categories and hence an acceptable measure for the social disclosure level, some other alternatives might be considered to overcome this problem and one of these is the law basis in the country and sector under investigation. In accordance with the law basis social disclosure can be classified into mandatory and voluntary disclosures. In case of longitudinal studies, the categories should be comparable over the time to gain creditability and this can be achieved through the adoption of the law basis and this will be considered in this study.

To conclude, the index, which will be used in this study, will be different from the one used by the study of Malaysians banks by Hamid (2004) in distinguishing between mandatory and voluntary items but all will be treated equally.

## II. 2: The determinants of social disclosure level

Different company characteristics have been considered in the literature, as determinants of the company's disclosure level of these are the following:

Size, performance, age, listing status. In addition to market structure, investment in information

As we can see from table 2 there is no consistency in considering the different categories of social disclosure but in terms of the frequency of the ranking of the categories human resources, community involvement, environment and product can be considered as the most important categories and this is in line with the categories used by the study of Hamid (2004) about social disclosure by banks in Malaysia and hence will be considered as a basis to construct a measure for the social disclosure level in this study.

technology systems and risk which will be considered for the first time in a study of the determinants of social disclosure level.

### II.2.1: Market structure

Market structure refers to the relationship between sellers and buyers under certain market conditions. Based on the conditions in the market, we can classify market structure into perfect and imperfect market. The conditions of the perfect market allow the free competition between the sellers and buyers but the imperfect market does not. Bain (1968) argued that the elements of the market structure are the degree of seller concentration, the degree of buyer concentration, the degree of product differentiation and the condition of entry to the market. What is important for the present study is the degree of seller (bank) concentration.

Seller concentration refers to the extent to which a small number of the largest firms in an industry dominate the market and hence affects the nature of competition within the market. The existence of competition should motivate the companies to use different strategies to compete and one of these strategies might be disclosing social information in the companies' annual reports as a marketing tool to improve the companies' image in society.

Competition is of concern to governments, which want to avoid monopoly in the market and make sure that economic resources are being used without harming the public interest.

The idea of structure-conduct-profitability hypothesis, which state that the certain conditions of a market (i.e. structure) can affect the behaviour of companies (i.e. conduct) and hence affect their profitability. In the present study we are concerning about factors affecting the level of disclosure by the companies and hence we are replacing the structure-conduct-profitability hypothesis with structure-conduct-disclosure hypothesis. The notion of structure-conduct-disclosure hypothesis is that underlying characteristics of a market (i.e. seller concentration) can affect the behaviour of companies (i.e. conduct) and hence affect the extent of social disclosure level in their annual reports.

Under the conditions of imperfect market, collusion among the firms is likely to occur. Lindsay (1995, p.15) stated that collusion can be defined as “an illegal and unfair use of market power that is difficult to detect and may be inferred from a high degree of market concentration”. The structure-conduct-profitability hypothesis

concerns the largest firms in the market, which have market power. A high degree of market concentration encourages the largest firms in the market to collude to exploit their market power and hence achieve their own interests, which is achieving higher profit on the expense of others and this situation might discourage and do not motivate other companies to use disclosing of social information in their annual reports as a marketing tool to improve their image in the society and might help in achieving more profits.

Previous structure-conduct-profitability hypothesis based studies have used a measure of the degree of market concentration to represent market structure {see for instance, Holden and El-Bannany (2004)}.

In the banking literature, the degree of market concentration has been measured in terms of total assets and total deposits. In addition, the measure of the degree of market concentration is concerned with chosen the appropriate number of the largest companies, to reflect the degree of concentration in the market. There are many sources for the market power of the large company as argued by Koch (1980) and using of assets as a comprehensive term rather than deposit as a partial term might be more convenient to reflect these sources especially in for a mutli-products industry like banking. Regarding chosen of the number of the largest companies, to reflect the degree of concentration in the market and based on the rule stated by the Monopolies and Mergers Commission in the UK (1996, p.12) which referred that “the complex monopoly is a situation where individuals or companies, account for at least 25 per cent of the supply or acquisition of particular goods or services, followed by a course of conduct, by agreement or not, that prevents, restricts or distorts competition”, the number of banks which account for at least 25% of the total assets of the market will be considered as an appropriate number of the largest companies, to reflect the degree of concentration in

the market. The concentration ratio for the industry in year  $t$  in terms of total assets (CR3ASS <sub>$t$</sub> ), which is complying with the criteria mentioned above, will be used to represent the structure-conduct-disclosure hypothesis.

Based on the above discussion, the first hypothesis is;

*H1: there is a negative relationship between concentration and social disclosure level.*

## II.2.2: Investment in information technology

Many different definitions of information technology have been provided in the literature. Information technology can be defined as “all forms of technology applied to processing, storing, and transmitting information in electronic form” as stated by Lucas, H. (1997, p.7). Information technology is “the use of computers and other electronic means to process and distribute information” as stated by Hussey, R. (1995, p.189). Information technology can be described as “technology involved in acquiring, storing, processing and distributing information by electronic means (including radio, television, telephone, computers)” as stated by Collin and Joliffe (1992, p.114).

All of these definitions refer to the possibility of using information technology as a communication tool to deliver information to the users.

Users of information can be classified into internal and external users. The main internal users are the staff and the management of the company and the main external users are investors, creditors and government authorities. As argued in section II.1 the main categories of the social information are environment, community involvement, product and human resources. Information about the first three categories is oriented mainly to the external users but information about the last category that is human resource is oriented mainly to the internal users. Zeghal and Ahmed (1990) argued that there are different means to deliver information to the different groups of users such as advertising, annual report, Internet, intranet and others.

From the above we can expect differences in the means of delivering information to the external and internal users. Means such as advertising, annual report and Internet can be used to deliver social information for external users. Means such as intranet and staff press can be used to deliver social information about human resources for internal users.

To conclude, because of the possibility of using information technology based means such as Internet and intranet to deliver social information we can expect a negative relationship between the social disclosure level in the annual report and investment in information technology systems.

The cost of investing in information technology is included the sum spent on hardware and software. But because of the data availability problem in the UK,

the published data on the hardware cost will be used as a measure of investment in information technology.

The hardware cost for bank  $i$ 's in year  $t$  ( $IT_{it}$ ), will be used to represent the level of bank  $i$ 's investment in IT in year  $t$ .

Therefore, the second hypothesis is;

*H2: there is a negative relationship between the degree of bank information technology and social disclosure level.*

### II.2.3: Bank Risk

Alnajjar (2000, p.164) stated that "Social responsibility disclosure may be done by firms that are not socially responsible but have a more sophisticated understanding of how to control public opinion and employ public relations experts who manipulate social responsibility disclosure to secure a good reputation for the firms".

Banks in higher risky position might be in need for applying this strategy to secure a good reputation about the banks. So disclosing of social information might be used as a tool by the higher risky position banks to show that they are not only able to manage these risks successfully (and hence achieve profits) but also invest (using the surplus) in beneficial activities for the society.

Higher risky position banks (regardless of the type of the risk) will disclose more social information than lower risky position banks to secure their image in the society.

Whereas discussion of the different types of risks will not add to the main idea of this section, which is mentioned above, so only one measure reflecting a type of these risks will be considered as a representative of bank risk.

Different measures of the firm specific risk have been used in the banking literature and one of these is loans to deposits ratio as a proxy for firm specific risk {see for instance El-Bannany (2002)}.

The ratio of loans to deposits will be used to represent the level of bank risk.

Based on the argument above, the third hypothesis is;

*H3: there is a positive relationship between the level of bank risk and social disclosure level.*

### II.2.4: Firm size

Firm size has been considered in the literature as factor, which might have an impact on the extent of disclosure of social information, by the companies. It has been argued that large companies are disclosing more information than small companies because of the following factors which in favour to large companies:

Cost of preparing information for disclosure. Large companies need less effort and hence cost to prepare information for disclosure because of the readability of this information as argued by Buzby (1975).

- Motivation to compete. Large companies are more capable of competing in the market than small companies and this might motivate these companies to disclose more information in all areas as argued by Hossain et al. (1995).

- Requesting of external fund. Large companies depend on obtaining external funds and hence disclosing wider information might help in attracting more investors from different interest groups to invest in these companies as argued by Ahmed and Nicholls (1994).

- Legitimacy theory: Legitimacy is defined by Suchman(1995) as "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs and definitions" and large companies rather than small ones might be more interested in fulfilling this assumption by disclosing some information about their social activities in their annual reports to improve their image in the society and hence legitimise their existence.

- Government monitoring: Large companies tend to disclose social information in the annual reports to avoid the government interfering because large companies are more monitored by government than small companies because of their effects on the society as argued by Zeghal and Ahmed (1990).

- Political visibility: Large companies are more politically visible and hence requested to be involved in social activities than small ones as argued by Belkaoui and Karpik (1989).

Studies of Hamid, F. (2004) in Malaysia, Alnajjar, F. (2000) in the US, Hackston, D. and Milne, J. (1996) in New Zealand, Belkaoui, A. and Karpik, P. (1989) in the US show a positive relationship between the level of social disclosure and the size of the company. On the other hand, studies of Davey, H. (1982) and Ng, C. (1985) in New Zealand show that there is no relationship between the level of social disclosure and the size of the company.

Different measures have been used in the studies mentioned above to represent the size of the company including total assets, annual sales, market capitalisation, and number of employees. In the absence of a scientific theoretical basis to measure the size of the bank, total deposits can be seen as a fair basis to measure the size of the bank because it is an external indicator which reflect to what extent the bank is successful in attracting more depositors and hence become larger.

Based on the above argument, the fourth hypothesis is;

*H4: there is a positive relationship between bank size and social disclosure level.*

### II.2.5: Firm profitability

Heinze (1976) stated that "profitability is the factor that allows management the freedom and flexibility to

undertake and reveal to shareholders more extensive social responsibility programmes". So, the motivation to disclose more social information for high profitable companies is higher than for less profitable companies. Study of Hackston and Milne (1996) in New Zealand shows a positive relationship between the level of social disclosure and the firm profitability. On the other hand, study of Hamid (2004) in Malaysia shows that there is no relationship between the level of social disclosure and the firm profitability. However, study of Alnajjar (2000) revealed a negative relationship between the level of social disclosure and the firm profitability.

Previous studies used return on equity and return on assets as a measure of the company profitability. Information about return on assets is requested for the management of the company to evaluate to what extent it was successful in using the resources of the company in achieving profit but information about return on equity is needed for the internal and external shareholders to make sure that the company is investing their money in the right way. Whereas return on equity is more convenient for internal and external use rather than return on assets, which is more convenient for internal use, return on equity will be used as a measure of bank profitability in this study.

Therefore, the fifth hypothesis is;

*H5: there is a positive relationship between bank profitability and social disclosure level.*

### II.2.6: Age of the firm

Based on the legitimacy theory discussed in section II.2.4., we can argue that the age of the company might play a role in motivating the companies, which gained good reputation throughout its age to invest in that factor by involving itself in extra social activities.

Study of Hamid (2004) in Malaysia shows that there is a positive relationship between the level of social disclosure and the age of the firm.

Age of the firm is measured by the number of years the firm has been in operation until each year of the study period.

Therefore, the sixth hypothesis is;

*H6: there is a positive relationship between the age of the bank and social disclosure level.*

### II.2.7: Listing status

Some companies disclose social information in their annual reports as a marketing tool to improve their image as argued by Zeghal and Ahmed (1990). Based on this argument we can say that the probability of disclosing social information in the companies' annual reports will be higher for the companies, which are seeking for external funds through registration in the stock exchange, rather than unlisted companies. Study of Hamid (2004) in Malaysia shows that there is a positive relationship between the level of social disclosure and the listing status in Malaysia.

Listing status is measured by using a dummy variable equal to 1 if the firm is listed in London stock exchange and 0 if not in each year of the study period.

Based on the above argument, the seventh hypothesis is;

*H7: there is a positive relationship between listing status and social disclosure level.*

## III. Research Method

The following points will be covered in this section: the source and the categories of social disclosure index which reflects the social disclosure level for each bank, the technique used to build up the social disclosure index (the dependent variable), the measure used for the content of the index, the sources of information about the independent variables, the study sample, the study period and the study model.

- The source and the categories of social disclosure index: the annual report, advertising and brochures are different sources, which have been used in the literature to collect information about the social disclosure {see for instance, Belal (2001)}. In terms of the verifiability, the annual report can be considered the best source of information compared to others for a longitudinal study. But in which part of the annual report can the social information be found? Information about social disclosure in this study will be based on the perceptions of the directors of the banks towards the society through collecting information about social disclosure in the Directors' reports for the UK banks over the period 1981-1996.

Kirkman and Hope (1992) stated that "Directors' report is important because it is covered by the auditor and demonstrates the high profile of the issue and/or its integration with mainstream matters of the company". Study of Naser and Al-Khatib (2000) about the extent of voluntary disclosure in the directors' report in Jordan is ignored the disclosure of social information and this issue will be considered in this study. The categories of social information used in this study are: human resources, community involvement, environment and product.

The main differences between the categories of social information used in this study and the ones used by the study of Hamid (2004) in Malaysia is that a distinguish has been made between the mandatory and voluntary disclosure items.

Based of the argument of Gray et al. (1995), the mandatory social disclosure categories in the UK over the study period are as follows:

Human resources category: consultation with employees, share ownership, disabled employment, employee data and pension data

Community involvement category: charity

Disclosure under any other categories is voluntary.

- The technique used to build up the social disclosure index, is content analysis. Content analysis as stated by Abbott and Monsen (1979, p. 504) can be defined as "a technique for gathering data that

consists of codifying qualitative information in anecdotal and literary form into categories in order to derive quantitative scales of varying levels of complexity”.

The index used to collect information about social disclosure level should be reliable and this can be achieved by discussing with other specialised researchers the meaning of the items under each category in the index to make sure that there is no vague or overlap in the meaning and after that the researchers should read the document of the analysis (annual report, brochures, .....etc.) and start to build up the index based on the agreed categories and compare the produced index with the one which was built up by the author to find out the differences and then discuss the reasons for these difference to reach at the end a homogenous index to be used for the study. In the present study the author analysed 20 directors’ reports for different banks in different years and built up the index and after that the author asked some researchers who are interested in the study area to read the same 20 directors’ reports and build up his own index and after that a comparison has been made between the researcher’s index and the author’s index to find out the differences which were minor and by overcoming these differences we reached to an agreed social disclosure index.

- The measure used for the content of the index: As mentioned in section II.1 different measures have been used in the literature to measure the disclosure level such as the number of words, the number of

sentences and the number of pages. The word itself might not give a full meaning but the sentence give a full meaning and the page is a mixed between both which means it contains some words have no full meaning and sentences have full meaning and hence the sentence can be considered the best measure for disclosure level because it gives a pure valuable meaning which does make sense compared to the other two measures and this argument can be supported by the statement of Gray et al. (1995, p.84) who stated that “sentences are to be preferred if one is seeking to infer meaning”.

- Regarding sources of information about the independent variables: the sources are the annual financial statements and the Bankers’ almanac over the period 1981-1996.

- The sample: The Major British Banks Group (MBBG) in addition to the cooperative bank as a leading bank in social activities have been chosen (see table 3) because the possibility of finding social information in the directors’ report of these large banks is higher than other medium or small sized banks as reported by many previous studies (see for instance, Gray et al. (1995, p.84).

- The study period 1981-1996 which chosen on the hypothesis that the years of the conservative party government in the UK would lead to a significant change in organization-society relationships and thus in the subjects of organizational disclosure as stated by Gray et al. (1995, p.90).

**Table 3.** The banks and data periods

| Bank                         | Data period | Observations |
|------------------------------|-------------|--------------|
| Abbey national (AN)          | 1993-1996   | 4            |
| Barclays Bank (B)            | 1983-1996   | 14           |
| Bank of Scotland (BS)        | 1996        | 1            |
| Co-operative bank (COP)      | 1990-1996   | 7            |
| HSBC (H)                     | 1982-1996   | 15           |
| Lloyds (LL)                  | 1985-1994   | 10           |
| Lloyds TSB (LT)              | 1995-1996   | 2            |
| NatWest (NW)                 | 1981-1996   | 16           |
| Royal Bank of Scotland (RBS) | 1984-1995   | 12           |
| Standard Chartered (S)       | 1991-1996   | 6            |
| TSB (T)                      | 1990-1994   | 5            |

**- The study Model**

Wang (1993/94, p.15) stated that “the regression method can be used to model any situation as long as there exists a strong causal relationship between the dependent and independent variables”. As discussed in II.1 and II.2, there are good reasons for expecting a strong causal relationship between the dependent variable and the independent variables, and thus it is suitable to use regression technique for this study.

The regression model will be as follows:

$$SDI_{it} = \alpha_0 + \alpha_1 (BDEP_{it}) + \alpha_2 (ROE_{it}) + \alpha_3 (AGE_{it}) + \alpha_4 (LIST_{it}) + \alpha_5 (CRASS_t) + \alpha_6 (RISK_{it}) + \alpha_7 (IT_{it}) + u_{it}$$

Where:

$SDI_{it}$  is social disclosure level of bank i in year t, measured by the number of sentences.

$BDEP_{it}$  is the size bank i in year t, measured by the amount of the deposits.

$ROE_{it}$  is the profitability of bank i in year t, measured by the return on its equity.

$AGE_{it}$  is the age of bank i in year t, measured by the number of years for the bank since started in business until each year of the study period.

$LIST_{it}$  Listing status is measured by using a dummy variable equal to 1 if the firm is listed in London stock exchange and 0 if not in each year of the study period.

$CRASS_t$  is the degree of market concentration of the industry in year t, to represent the structure conduct disclosure hypothesis.

$RISK_{it}$  is the risk of bank  $i$ , in year  $t$ , to represent credit risk hypothesis.

$IT_{it}$  is a variable to reflect the level of investment in IT for bank  $i$  in year  $t$ .

$u_{it}$  disturbance term.

#### IV: Analysis of the results

##### IV.1: Descriptive statistics

Table 4 reports the descriptive statistics for the social disclosure level and independent variables selected in this study. The social disclosure level for the sample banks throughout the study period varies from 4% to

100% of the maximum number of the sentences forming the social disclosure index and the mean for the social disclosure level is 30%. The independent variables represented by bank size in terms of total deposits; return on equity; investment in information technology; the age of the bank, listing status; market structure measured by the 3 banks assets concentration ratio and bank specific risk measured by the loan to deposit ratio are vary as well and as stated by Naser and Al-Khatib (2000, p. 110.) "this gives more credibility to the results of the study".

**Table 4.** Descriptive Statistics for the dependent and independent variables

N= 92 observations

| Variable   | Mean  | SD    | Min   | Max    |
|--|-------|-------|-------|--------|
| Disclosure Index ( $SDI_{it}$ )                  | 16.05 | 9.47  | 2     | 52     |
| Bank Deposits ( $BDEP_{it}$ )                    | 42530 | 31621 | 2000  | 113847 |
| Return on Equity ( $ROE_{it}$ )                  | 0.13  | 0.08  | -0.08 | 0.29   |
| Information technology ( $IT_{it}$ )             | 690   | 552   | 27    | 2119   |
| Bank age ( $AGE_{it}$ )                          | 161   | 77    | 0     | 301    |
| Listing status ( $LIST_{it}$ )                   | 0.73  | 0.45  | 0     | 1      |
| 3bank asset concentration ratio ( $CRASS_{3t}$ ) | 0.27  | .02   | 0.24  | 0.32   |
| Loan to deposit ratio ( $RISK_{it}$ )            | 0.97  | 0.11  | 0.69  | 1.38   |

##### IV.2: Test for Multicollinearity

Multicollinearity occurs when there is a high correlation between any two of the independent variables. There is many methods in the literature to detect multicollinearity and one of them is to see whether the simple negative or positive correlation coefficient between any two variables is say 0.99 or more as argued by El-Bannany (2002). If it is, we should suspect the existence of multicollinearity. The simple way to overcome multicollinearity problem is to delete one of the two highly correlated variables. The correlation coefficient matrix of the independent variables is shown in table 5.

The highest correlation coefficient value is between  $IT_{it}$  and  $BDEP_{it}$  and is less than 0.99 (it is

0.90), which means that we should not suspect the existence of the multicollinearity problem. In addition, Neter et al. (1985) stated, "the fact that some or all independent variables are correlated among themselves does not, in general, inhibit our ability to obtain a good fit nor does it tend to affect inferences about mean responses or predictions of new observations, provided these inferences are made within the region of observations". Moreover, Neter et al. (1985) stated that "deleting some variables to reduce multicollinearity reduces the model's explanatory power and may lead to specification errors". So, caution is needed when dealing with the multicollinearity problem.

**Table 5.** The correlation coefficient matrix for the independent variables

| Independent Variables | $BDEP_{it}$ | $ROE_{it}$       | $IT_{it}$          | $AGE_t$             | $LIST_t$           | $CRASS_{3t}$      | $LOADEP_{it}$     |
|-----------------------|-------------|------------------|--------------------|---------------------|--------------------|-------------------|-------------------|
| $BDEP_{it}$           | -           | 0.052<br>(0.623) | 0.901**<br>(0.000) | -0.344**<br>(0.001) | 0.061<br>(0.563)   | -0.114<br>(0.280) | -0.134<br>(0.203) |
| $ROE_{it}$            |             | -                | 0.040<br>(0.705)   | 0.001 (0.991)       | 0.054 (0.612)      | 0.139 (0.187)     | 0.077 (0.467)     |
| $IT_{it}$             |             |                  | -                  | -0.392**<br>(0.000) | 0.166 (0.113)      | -0.092 (0.381)    | 0.019 (0.856)     |
| $AGE_t$               |             |                  |                    | -                   | 0.366**<br>(0.000) | -0.024 (0.821)    | 0.014 (0.893)     |
| $LIST_t$              |             |                  |                    |                     | -                  | -0.021 (0.845)    | -0.025 (0.815)    |
| $CRASS_{3t}$          |             |                  |                    |                     |                    | -                 | -0.207* (0.048)   |
| $LOADEP_{it}$         |             |                  |                    |                     |                    |                   | -                 |

The 2-tailed significance level is shown in brackets. \* Correlation is significant at the 0.05 level (2-tailed).

\*\* Correlation is significant at the 0.01 level (2-tailed)



### IV.3. Regression results and discussion

The results presented in table 6 show that the regression model is significant and explains 48% of the relationship between the social disclosure level and the independent variables and this indicate that the model is reasonably well specified and has explanatory power better than those reported in some other prior studies such as the study of Alnajjar (2000) in the USA which was 15%.

The coefficients for bank size; return on equity; investment in information technology; market structure and risk are highly significant ( $p < 0.05$ ). The sign on all variables but return on equity are in line with the hypothesized direction. On the contrary, the coefficients representing the age of the bank and listing status are not significant and even the sign of both variables do not comply with the expected direction.

The empirical evidence suggests that: market structure measured by 3banks assets concentration ratio is negatively related to social disclosure level and this conforms to the exception of hypothesis 1. Investment in information technology measured by the value of hardware is negatively related to social disclosure level and this complies with the exception of hypothesis 2. Bank risk measured by the ratio of loans to deposits is positively related to the social disclosure level as expected by hypothesis 3. Bank size measured by total bank deposit is positively related with the social disclosure level and this is in

line with hypothesis 4 and supports the finding of most prior studies {see for instance, study of Hamid (2004) in Malaysia}. Bank profitability measured by return on equity is negatively related to the social disclosure level and this against the expectation of hypothesis 5 but supports the finding of some studies {see for instance, study of Alnajjar (2000) in the USA}. This might reflect to what extent the less profitable banks are trying to attract the attention of the society to a positive area rather than the profitability level hoping to improve their image in the market. There is no relationship between the age of the bank and the level of social disclosure and this against the expectation of hypothesis 6 the finding of the study of Hamid (2004) in Malaysia.

The reason might be that older banks, which are already well known in the market, believe that there is no need to disclose more information to improve the public image in the market.

There is no relationship between the listing status and the level of social disclosure and this against the expectation of hypothesis 7 and the finding of the study of Hamid (2004) in Malaysia. The reason might be that if the debt is not the main source of fund for the listed companies in a certain country, we might expect a positive relationship between the disclosure level and the listing status and Vic versa as argued by Saudagaran (2000) and this might be the case for the UK compared with Malaysia.

**Table 6.** The regression results: dependent variable SDI; Number of observations 92

| Regressor            | Coefficient | t-ratio               | Probability |
|----------------------|-------------|-----------------------|-------------|
| Intercept            | 24.468      | 1.57                  | 0.120       |
| BDEP <sub>it</sub>   | 0.000       | 5.14                  | 0.000       |
| ROE <sub>it</sub>    | -26.469     | -2.93                 | 0.004       |
| IT <sub>it</sub>     | -0.008      | -2.25                 | 0.027       |
| AGE <sub>t</sub>     | -0.001      | -0.09                 | 0.926       |
| LIST <sub>t</sub>    | -2.112      | -0.10                 | 0.278       |
| CRASS3 <sub>t</sub>  | -102.326    | -2.37                 | 0.020       |
| LOADEP <sub>it</sub> | 17.270      | 2.29                  | 0.025       |
| R-SQUARED = 0.517    |             | R-BAR-SQUARED = 0.477 |             |
| F (7,84) = 12.851    |             | Sig. F. = 0.000       |             |
| N = 92               |             |                       |             |

### V. Conclusions

This study investigates the relationship between social disclosure level and seven independent variables (three of them namely market structure, investment in information technology and risk have not been considered in the previous studies) over the period 1981-1996 using data for the major British banks and Co-operative bank.

The main independent variables, which have been considered in previous studies are the size, firm

profitability, the age of the firm and listing status. The size hypothesis states that larger rather than smaller banks disclose more social information because of several reasons such as motivation to compete and political pressure. The firm profitability hypothesis assumes that more profitable banks disclose more information than less profitable bank as a reflection to the level of success. The age of the firm hypothesis states that older banks will disclose more information than younger banks to retain their good reputation in the market. The listing status hypothesis presuppose

that listing rather than unlisted banks will disclose more information as marketing tool to improve their public image.

However, none of the previous studies of the determinants of social disclosure level have considered market structure, investment in information technology and risk as ways of explaining social disclosure level.

The structure-conduct-disclosure hypothesis states that there is a negative relationship between the degree of market concentration and social disclosure level; that is, the higher the degree of market concentration, the lower the degree of social disclosure level because of the absence of the competition in the market and hence the motivation to disclose more information.

The investment in information technology hypothesis is expected a negative impact on the social disclosure level in the directors' report because of using of computer-based means to disclose information such as Internet and Intranet.

The bank risk hypothesis assumes that there is positive relationship between the level of the bank risk and social disclosure level to secure their image in the society.

The results support the size, market structure, investment in information technology and risk hypotheses. Surprisingly, the results show a negative relationship between firm profitability and this support the results of the study of Al-Najjar (2000) in the USA which argued that this might show the willing of the less profit firms to improve their public image in the market. In addition the insignificant and negative result for the age of the firm and listing status may be due to motivation factor or source of fund in respectively.

There are some limitations to this study. First, only one means of social disclosure has been used in this study namely the directors' report. Further research could extend this to include other means of social disclosure such as staff press, advertising, brochures and the Internet. Second more evidences are needed on the determinants of social disclosure level before any generalisation of the results can be made. Third the empirical tests were conducted only on the major British bank group and the co-operative bank and hence the results of the study cannot be assumed to extend beyond this group of banks or to different study periods.

On the other hand, the level of the country's capital account openness might be considered for further research as a possible explanation for the increasing in the level of social disclosure.

The idea is that if the country moves towards opening the capital account to attract foreign investors from different interest groups, this might motivate the companies in this country to provide more detailed social information to assist such investors who are interested in social activities in making informed decision and, thus, investing in their companies.

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