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MANAGEMENT DECISIONS REGARDING THE VOLUNTARY DISCLOSURE OF INFORMATION: THE PROBLEM OF THE RECOGNITION OF THE FIRM'S INTELLECTUAL CAPITAL AND THAT OF LENDERS' INFORMATION NEEDS

Francesco Napoli*

Abstract

We analyse data on Italian listed companies quoted on the Milan stock exchange which perform R&D (Research & Development) activity. We find there is a positive relationship between R&D activity and voluntary disclosures of additional information that: *a)* regards R&D assets in themselves, in line with theoretical predictions according to which voluntary disclosure makes up for shortcomings in the current financial accounting model; *b)* is relevant to lenders' interests, in line with the fact that quoted Italian firms are highly dependent upon lenders. Owner-managers of quoted Italian firms show, moreover, a significant tendency to augment additional information provided to lenders in the event of losses (negative earnings).

Keywords: Controlling Shareholders, Lenders, Minority Shareholders, Intellectual Capital Information

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1. Introduction

Voluntary disclosure can reduce agency costs in the relationship between financiers (shareholders and lenders), who provide funds (equity and borrowed money), and management, who make the operating decisions (Jensen and Meckling, 1976; Williamson, 1981). We should bear the particular characteristics of the Italian equity market in mind when using the teachings of agency theory. This market shows a high level of ownership concentration across all listed firms. According to Bianco and Casavola (1999), ownership concentration in Italian listed companies is high: on average, the major shareholder has 52% of voting rights, and the three largest shareholders account for 62% of shares and voting rights

Three different classes of major block holders are commonly identified: families with active family members, the state or other public bodies, and coalitions of shareholders with venturesome activity or entrepreneurial backgrounds. Moreover, controlling families are usually very much involved in the activities of the firm as revealed by the regular appointment of family members to the board of directors, or even to CEO positions (Prencipe *et al.*, 2008). The presence of a dominant shareholder in Italian listed firms makes the separation between owners and managers less severe. However, it raises a different conflict between controlling shareholders, who are the owners and managers of the firm, and minority shareholders.

Considerations regarding the equity market show that, in Italy, voluntary disclosure can be used to reduce agency costs that arise between owner-managers and minority owners, and owner-managers and lenders. Therefore, we present theories which explain the importance of voluntary disclosure for shareholders and lenders and we base our hypotheses upon these.

Disclosure benefits are related to liquidity, costs of capital and analyst evaluation (Botosan, 1997; Healy and Palepu, 2001; Verrecchia, 2001). At the same time, disclosure is not costless because it is associated with the emergence of proprietary and litigation costs (Darrough and Stoughton, 1990). According to the proprietary cost theory, costs relating to disclosure could discourage the dissemination of information (Dye, 1985; Verrecchia, 2001; Prencipe, 2004). Managers could decide to disclose less information to avoid competitive disadvantage and protect investors better (Dye, 2001). Darrough and Stoughton (1990) asserted that if the number and the size of rivals increases, disclosure becomes more costly. Although the effects of disclosure on competitive disadvantage "are complex and difficult to predict" (Guo *et al.*, 2004, p. 323), some authors suggest that firms seek to satisfy financial analysts' and investors' high demand for intellectual capital information by disclosing value-

relevant information (Cerbioni and Parbonetti, 2007; García-Meca and Martínez, 2007; García-Meca *et al.*, 2005). Investors would surely interpret nondisclosure of this critical aspect of a firm's activities and future performance as "bad news" (Milgrom, 1981) and this would imply for example, a significant absence of products under development (a thin pipeline), a failure of clinical tests or limited markets for the anticipated result, consequently reducing the company's value. In a world of complete information, internal mechanisms of accountability might be useless because investors could directly protect themselves; under conditions of an incomplete contract and bounded rationality, however, voluntary disclosures are mechanisms of accountability.

The decision to disclose additional information is typically made in terms of a cost-benefit framework. Proprietary costs are those associated with disclosing potentially valuable information to the firm's competitors. Instead, a positive effect of voluntary disclosure might be a reduction in the cost of capital (Botosan, 1997; Leuz and Verrecchia, 2000) as the result of a reduction in information asymmetry. Eccles *et al.* (2001, Ch. 10) argue that enhanced disclosure levels will probably lower firms' cost of capital, increase analyst attention and so forth.[1]

We choose the practice of R&D as the focus of this work, since, for accounting literature, R&D is the main contributor to information asymmetries between insiders and those outside the firm (Aboody and Lev, 2000). Therefore, we identify and analyse the categories of information, voluntarily disclosed by owner-managers to reduce the information asymmetries between themselves and financiers, whether they finance through equity (minority owners' funds) or borrowed money (debt). We distinguish between two categories of additional information that managers can voluntarily disclosure, each of which focuses on a specific informative need on the part of one of the two categories of stakeholders considered, i.e. (minority) shareholders and lenders. Therefore, we examine the effects of:

- qualitative and quantitative value-relevant information about R&D assets. Since financial information within annual reports is not sufficient as the basis for a reliable evaluation of a company, additional disclosures by management of information about R&D are important to optimise information flows in the capital markets (see Holland, 2002). This is information which can influence share prices because it is related to the possibility of R&D assets generating future residual (excess) income.[2] For example, if the managers of a company, which is engaged in the development of new drugs, believe these products to be undervalued because the firm's financial statements do not provide external investors with sufficient information about the value of the opportunities which will come with these new drugs, they might make additional voluntary disclosures. These firms would increase disclosure until the additional (marginal) costs of disclosure equaled the associated marginal benefits. It may well be the case that higher disclosure for these firms will result in a lower cost of capital.
- qualitative and quantitative information for lenders. The asymmetric nature of lenders claims on firms' assets is such that they are not generally interested in information about R&D assets in themselves. Indeed, R&D assets typically do not retain much of their value in the event of bankruptcy/liquidation. Even the excess of firm value over book value often disappears once the firm ceases to be a going concern. This occurs because this excess often represents the value of intangibles whose value is intrinsically linked to the firm itself, and do not have value once the firm is no longer a going concern. Lenders, instead, are likely to have greater demand for additional information regarding everything which may reduce the value of lenders' claims.

Therefore, in the following section, we will present theories which have looked at the consequences that disclosures generate regarding the reducing of agency conflicts that arise between owner-managers and minority owners, and owner-managers and lenders. We elaborate a theoretical framework and various hypotheses for the two categories of information which we have outlined.

In section 3, we present the empirical research, together with description of the data, variables and methodology. The sample comprised a panel of 156 observations, comprised of data which were gathered from the annual reports of 39 firms over the four years from 2008 to 2011 inclusive. From 2005, Italian listed companies increased disclosure in their annual reports. This happened following the IFRS mandatory transition in 2005, and as a result of modification to the rules in the Civil Code (updated article 2428) in 2008. However, although the newly required disclosure regards a wide range of issues, such as key financial and non-financial performance indicators (risks, environmental impact of operations and human resources), there is no clear requirement as to what quantitative or qualitative disclosures should be provided. Finally, the results will be discussed in section 4 and conclusions will be drawn.

[1] The theoretical argument that disclosures reduce the cost of capital is based on Glosten and Milgrom (1985), Amihud and Mendelson (1986), Merton (1987), King *et al.* (1991). For empirical evidence regarding the negative association between disclosure level and cost of capital, see Botosan (1997), Sengupta (1998), Healy *et al.* (1999), and Botosan and Plumlee (2002).

[2] Residual (excess) income (X_t^a) is earnings in year *t* reduced to a value equal to that of the product between the equity book value for year *t-1* multiplied by the *rf* rate, that is the risk-free rate, e.g. that inherent to the treasury security yield.

2. Theoretical background and hypotheses

Information on R&D to cope with shortcomings of the current financial accounting model

The first framework is based on certain dissatisfaction with regard information on intangibles in corporate financial reports. Information on a firm's innovation or technology cannot be included in financial statements because of identification, recognition, and measurement problems (see Holland, 2002). The inadequacy of financial information is a major incentive to managers to increase disclosure of information about R&D. The reason for this is that the firm's financial statements do not adequately reflect the value created by innovative activities such as R&D and, therefore, the firm (if it did not make voluntary disclosure about this activity) might be unfavourably affected by the myopia of the capital market within the resource allocation process that the market itself performs. Perhaps the most fully exposited version of this line of reasoning is made by Lev (2001), who has conducted several studies specifically into problems inherent in R&D assets (e.g., see: Lev *et al.*, 2005; Aboody and Lev, 2000).

Firms with large amounts of intangibles relative to fixed, tangible assets are handicapped in their ability to obtain financing. Lev and Zarowin (1999, p. 383) suggest that reporting inadequacies may adversely affect investors' and firms' welfare. Cañibano *et al.* (2000, p. 112) add that if financial statements provide investors with biased (conservative) estimates of the firm's value (book value of equity), inefficiencies (myopia) may appear in the resource allocation process. Ignorance of intellectual capital causes investors to have doubts about what may happen in the future and to undervalue shares (Andriessen, 2004). Furthermore, a company with low levels of tangible assets has a lower capacity to guarantee debts (Sotomayor González and Larrán Jorge, 2005). This may cause investors to conclude that the company has a high level of risk and, thus, not wish to invest in it, making it difficult for the firm to access this kind of financing. Hofmann (2005) says that the cost of capital is too high for knowledge intensive companies. Therefore, by displaying their invisible assets, firms might demonstrate that they represent less of a risk than is at first apparent and, in turn, reduce the rate of return required by stakeholders (Sveiby, 1997).

Lev (2001) makes a number of arguments to support the claim that the current lack of disclosure about intangibles in annual reports has adverse effects on capital markets. Lev argues that current accounting practice leads to the "systematic undervaluation of intangibles" by investors. He points to two papers, one by Chan *et al.* (2001) and the other by Lev *et al.* (2005). Both of these show that shares of firms with relatively higher R&D spending tend to outperform other firms in the years following that spending. The implication is that these firms where previously undervalued by market participants. The market fails to correctly value R&D expenditures at the time they are made because those expenditures are expensed rather than capitalised at that time. Thus, it is assumed that market participants naively respond to the accounting treatment of expenditures and fail to understand that R&D expenditures which are not capitalised may well result in future benefits. Capitalisation, partial or total, is supported by certain regulators (IAS) if the project complies with predetermined success factors. However, Lev (2001) suggests that, given the uncertainty of R&D projects, the option of expanding these costs is used by many managers to avoid having to give explanations about failed projects: "Thus, companies get the best of all worlds from in-process R&D expensing: no price hit at the time of expensing and a significant boost to future reported profitability" (p. 89).

A number of contributions, including those mentioned above, suggest the desirability of different specific accounting/disclosure treatments for R&D assets. Above all, as far as voluntary disclosure is concerned, the indications which emerge are presented clearly and synthetically by Lev (2001, p. 122), who encourages voluntary disclosure of information about R&D.[3]

R&D intensity may proxy for information asymmetry between managers and investors. Aboody and Lev (2000) find that the frequency of and gain from insider trading are greater for firms with higher R&D intensity, suggesting that R&D is a major contributor to information asymmetry. In addition, prior studies suggest that firms with greater information asymmetries are more likely to make disclosures (e.g. King *et al.*, 1990). Thus, the information asymmetry hypothesis also predicts a positive association between disclosure and R&D intensity. Given these conditions, we make the following hypothesis:

H1: Firms with higher R&D intensity make more disclosures of R&D.

To see the problem with this logic, it is worth considering the possibility that the more R&D processes are understood, the more information about the scope and progress of these processes is useful to

[3] Moreover, he advocates changing the accounting system. His principal recommendation here is to broaden the recognition criterion so that expenditures on intangibles can be recognised as assets to a greater extent. This would be accomplished by relaxing the criteria on reliability (probable future benefits) and control (that the entity has control over the asset). Lev (2003) advocates the introduction of a "comprehensive balance sheet that recognises the creation of those intangible assets to which you can attribute streams of benefits" (p. 20). He proposes the capitalisation of research and development, patents, brands and "sometimes organisational capital".

investors and the more investors ask firms for such processes because they include opportune information which is not typically included in financial reports. According to the American Securities and Exchange Commission (SEC), investors "also need to understand the key milestones for the development of the company and its progress on achieving key operating performance measures" (SEC, 2001). This includes disclosure of general information about the innovation process, including the status of R&D projects, availability of future financing, and whether project development is on schedule. Eventual completion and commercialisation also signify the success of innovation and information about the delivery of marketable products or services helps investors assess the value created by the activity.

The need to provide voluntary information about R&D arises not only because of absent, or partial, recognition on the balance sheet of streams of benefits due to research and development, but also when earnings reported in the Periodic Income Statement are less useful in assessing firm value.

Indeed, most approaches to equity evaluation rely on information from the income statement and use that information to forecast future revenues, earnings, and cash flows. Managers have greater incentives to disclose additional information when financial information, such as earnings, is less useful for evaluating firms (Gu and Li, 2003; Chen *et al.*, 2002).

Since negative earnings are less useful for evaluating firms (Collins *et al.*, 1997; Hayn, 1995), we also expect firms to increase disclosure of innovation when they report losses. In fact, investors are likely to have greater demand for additional value-relevant information to supplement the information on earnings in the event of losses. Moreover, for R&D-intensive firms, losses are often indicative of the absence of revenue during early stages of the innovation process. Given that early-stage innovations tend to be associated with more uncertain prospects and, hence, more uncertain future earnings, disclosures of innovation are likely to be more useful to investors for assessing the value of such firms.[4]

Thus, we expect managers to have greater incentives to make disclosures about their innovation activities when they experience losses. This is our second hypothesis:

H2: Firms reporting operating losses make more disclosures of R&D

The empirical evidence regarding the importance of voluntarily disclosed information about R&D does not reach unequivocal conclusions. For example, Arvidsson (2003) analyses 105 analyst reports on knowledge-intensive companies in Nordic countries. Her disclosure scores show that financial analysts focus primarily on information regarding R&D. In contrast, Larrán Jorge (2001) and García-Meca *et al.* (2005) do not find much information in this category in analyst reports, because there is little voluntary disclosure of this information in the country they examined, i.e. Spain.

Voluntary disclosure and lenders' informative requirements

Italian listed companies represent an ideal setting to investigate the influence of lenders on voluntary disclosure because of a characteristic which is unique to them. Indeed, Italian listed firms are leveraged at about 50%, indicating that debt financing is a prime source of funds (Prencipe *et al.*, 2008).

Much of the debt research has developed with the agency-theoretical view of the firm that Jensen and Meckling (1976), Fama and Miller (1972), and Myers (1977) have articulated. Three central ideas emerge from this literature. First, owner/managers have incentives, ex post, to engage in actions to further their own interests to the detriment of outside capital providers. Second, outside capital providers will price protect their claims in anticipation of this behaviour. Third, owner/managers anticipate price protection and are willing to incur monitoring and bonding costs, ex ante, to restrict lenders' ability to engage in such behaviour.

Smith and Warner (1979) expand on these ideas, postulating that four categories of agency conflicts arise between debt holders and equity holders. First, there is a conflict of interest between these two stakeholders over dividends. Debt holders are concerned that equity holders could increase their dividend payments, thereby reducing the resources available to payoff debt holders' claims. Second, there is a conflict over future increases in debt levels that reduce the probability that the lender will be repaid. The third and fourth sources of conflict relate to asset substitution and underinvestment. Following a debt issuance, firms often have incentives to shift their asset mix toward riskier investments, resulting in a wealth transfer from debt holders to equity holders. Alternatively, as firms approach default, they may choose to forgo positive net present value (NPV) projects because the benefits would accrue primarily to the firm's creditors rather than to its equity holders.

Studies of the conflicts between insiders and lenders can not ignore the specific nature of R&D assets to which our work refers. Some of the literature has underlined what the critical elements of intellectual capital disclosures are and we believe that some of these critical elements may be of great relevance from the lenders' prospective.

In the theories of the firm as a 'set of contracts' (Baker *et al.*, 2002), the contractual position of lenders is profoundly different from that of

[4] Mansfield and Wagner (1977) estimated that, in R&D projects, the improvement in the mean probabilities of success was about 8-9% as products moved toward later stages of innovation.

shareholders. The returns on investment are already fixed for the firm's lenders. However, once managers have obtained debt financing, they could switch to higher risk investment opportunities than those discussed with lenders, reducing the value of lenders' claims. Therefore, it is logical for lenders to have greater demand for additional information with regard anything that may reduce the value of their claims. Following this line of reasoning, with respect to R&D assets, lenders' attention is more focused upon the options that managers will have to switch to higher risk investment opportunities in the future than upon the stream of probable and future residual (excess) incomes which can be associated to current R&D assets.

Firms with more intangible assets have more "growth options", that is more investment opportunities to choose between over time. From this perspective, innovative activities such as R&D are among the main contributors to "growth options" (Skinner 2008). The more growth options grow, the more risk for lenders increases. In the future, these funds can easily be switched to higher risk growth opportunities by firms' managers. Firms which have a higher number of growth options available face greater challenges and risks than other firms. For example, once managers have obtained some financing, they could profit by switching investment from the projects proposed, when asking for the finance, to opportunities which present greater risk, so reducing the value of the lenders' claims (Smith and Watts, 1992).

The asymmetric nature of lenders' claims on firms' assets is such that they are generally only willing to lend to the firm to the extent that it has tangible assets because these assets typically retain much of their value in the event of bankruptcy/liquidation. Conversely, the excess of firm value over book value often disappears once the firm ceases to be a going concern. This occurs because this excess often represents the value of intangibles whose value is intrinsically linked to the firm itself, and do not have value once the firm is no longer a going concern. With regard all this, the best summary of the debt holders' point of view was given in 2002 by the then president of the Federal Reserve Alan Greenspan when talking about the failure of Enron: "As the recent events surrounding Enron have highlighted, a firm is inherently fragile if its value added emanates more from conceptual as distinct from physical assets. A physical asset, whether an office building or an automotive assembly plan, has the capability of producing goods even if the reputation of the managers of such facilities falls under a cloud. The rapidity of Enron's decline is an effective illustration of the vulnerability of a firm whose market value largely rests on capitalised reputation. The physical assets of such a firm comprise a small portion of its asset base. Trust and reputation can vanish overnight. A factory cannot." (Quote taken from Lev, 2002). Other characteristics of many intangibles reinforce the idea that lenders are unlikely to be interested in additional information about R&D assets in themselves. For example, many intangibles are characterised by difficult-to-enforce property rights issues - it is hard to prevent others from appropriating and enjoying the benefits associated with intangibles; employees may leave the firm, taking valuable intellectual capital with them etc. In addition, it is less likely that secondary markets will exist for many intangibles, making independent assessments of value difficult to obtain.

There are numerous theories regarding intellectual capital and some of these are highly critical. For example, the notion of intellectual 'capital' is criticised by Gowthorpe (2009) as an incomplete terminology that emphasises only certain aspects of intellectual assets and fails to take into account the 'dark side' of the asset base, intellectual liabilities. In particular, it is clear that the basic formulation underlying the balance sheet is: Assets-Liabilities = Capital. It appears that the notions of intellectual capital that have been devised to date only equate intellectual capital with intellectual assets, ignoring the potential impact of intellectual liabilities. There has been some relatively limited recognition in the intellectual capital literature that intellectual liabilities might be important factors in assessing firm value (Caddy, 2000; Harvey and Lusch, 1999). For example, Harvey and Lusch (1999) attempt a classification scheme for intangible liabilities which includes factors such as high employee turnover, discrimination and poor product/service quality. Companies are, presumably, the beneficiaries of many significant intellectual asset elements such as employee know-how, structural capital and relational capital. However, virtually all such elements might be destroyed by a single and singularly ill-advised remark (see Moore (2005) for examples). All this leads critics to conclude that intellectual 'capital' is an incomplete terminology. It flatters companies and their management by its concentration upon assets, without an equivalent examination of liabilities. Moreover, risk elements are relatively under-examined in both theory and practice, and there are no elaborate reporting models associated with risk that are equivalent to those describing so-called 'intellectual capital'.

We use the above arguments about the options (which increase as R&D intensity grows) available to managers by switching investment to opportunities which present greater risk, the value of intangibles which are intrinsically linked to the firm itself (and do not have value once the firm is no longer a going concern) and the incapacity to take into account the 'dark side' of intellectual capital (i.e. the intellectual liabilities) and, on the basis of these arguments, we theorise that, as R&D intensity increases, lenders are likely to have greater demand for further (diverse) information beyond that on R&D assets in themselves

(considered in the previous section to be of interest to shareholders). In situations like that for Italian listed companies, where companies' dependence on lenders is high (high leverage), the incentive becomes very strong for owner-managers to seek to satisfy that demand by disclosing information on other aspects of the firm's operations which may interest lenders, given that they might reduce the value of these lenders' claims . Therefore, our hypothesis is:

H3: Firms with higher R&D intensity make more disclosures of information to lenders.

When earnings are less useful, it is likely that disclosure of additional information, particularly which concerns the financial leading indicators, can provide lenders with the information they need. Our prediction that firms will make more disclosures when current earnings are less informative is also extended to lenders. Since, a great lack of informativeness is characteristic of negative earnings, we hypothesise that:

H4: Firms reporting operating losses make more disclosures of information for lenders.

3. Method: sample selection, variables and measurements, descriptive and univariate statistics and the regression model

Our sampling data was drawn from the information that firms provide to stakeholders in their annual reports. Although the annual report is only one major means of corporate reporting, it serves as a good proxy for the level of corporate disclosure provided by a firm, because annual report disclosure levels are positively correlated with the amount of disclosure provided via other media (Lang & Lundholm, 1993). Annual reports can thus be considered to be one of the most important sources to capture corporate information disclosures.

We use two databases to carry out the analysis: the AIDA and Datastream databases. A method was adopted to identify firms listed on the Italian stock exchange that might be useful in testing the formulated hypotheses. To choose firms for the sample, we used data and the "filter" functions from the AIDA database. This database was used just to select the companies. Financial and insurance companies were excluded. All of the companies remaining were ordered according to the size of the ratio between average values of R&D capitalised on balance sheet (be more precise, under IAS 38 only assets arising from "development" must be capitalized, whereas, when it is incurred, expenditure on research will be expensed in the income statement) and turnover as revealed for the years 2008, 2009, 2010 and 2011. Only companies above the median on the list were chosen for the subsequent phase. These companies constituted 50% of listed Italian non-financial and non-insurance companies with higher R&D asset values (percentualised with respect to their turnover). Not all of the companies could be included in our sample given that it emerged from a manual analysis of their annual reports that some of them had presented incomplete information regarding R&D costs for one of the four years we observed. At the end of these phases, only 39 firms could be considered useful for the following investigation. The data for each firm was gathered from the annual report, for each of the four years covered by the period 2008–2011. Therefore, the sample comprised a panel of 156 observations (39 firms over four years).

The financial and non-financial data in the annual report needed for the statistical tests was collected manually from the annual reports of the sample firms. These were available both on the Italian stock exchange internet site and in the "investor relations" section of certain corporations' websites. Finally, the Datastream database was used to collect the firm-specific data of stock market values.

Dependent variables

To test hypotheses H1 and H2, we study a disclosure index relative to Research and Development (RD.INF variable); while to test hypotheses 3 and 4, we study a disclosure index relative to information for lenders (FIN.INF variable).

We calculate the disclosure index relative to Research and Development (RD.INF variable) as García-Meca *et al.* (2005) did, in other words, we give a score of one to each item disclosed beyond the set of items considered as communicable by the firm from an established list (Table 1). Therefore, each index is the percentage of the actual score revealed to the total score that the company may communicate. This method has often been applied to measure the release of voluntary information in annual reports, for instance by Adrem (1999).

With regard the disclosure index relative to information for lenders (FIN.INF variable), we used the voluntary disclosure instrument developed by Meek *et al.* (1995) as well as the teachings of Smith and Warner (1979), already cited in the framework, postulating that four categories of agency conflicts arise between debt holders and equity holders to measure the extent of voluntary disclosure by companies. The items of voluntary disclosure items, which this study adopts, are listed in Table 2. In particular, voluntary disclosure of information for lenders for each firm was calculated by giving a score of one to each item disclosed over the set of items considered as communicable by the firm from the established list (Table 2).

Table 1. List of the items used to measure disclosure index relative to R&D (RD.INF)

Goal, objective of R &D
Patents and licenses acquired in the course of innovative R&D activities
Future projects regarding R&D
Implementation, continuation, or termination of R&D projects
Basic research
Product design/development
Patents pending
Relation with current innovation *(e.g.* strategic new initiative, enhancement of existing technology)
Form of R&D venture *(e.g.* alliance with other firms, contracting with government or other firms)
Human capital and details on research teams
Time frame of the innovation *(e.g.* years to complete)

Table 2. List of the items utilised to measure disclosure index relative to financial information for lenders (FIN.INF)

Policies relative to dividend payments
Amount of financing or spending that is required as part of the plans and strategic projects undertaken
Investment risks
Qualitative comments on profitability
Liquidity ratios
Restatement of financial information
Statement of strategy and objectives – financial
Impact of strategy on current results
Impact of strategy on future results
Forecast of cash flow
Value added data
Value added ratios
Qualitative value added information

Independent variables

We also use:

- RD.INT = R&D intensity, the ratio of R&D expenditure to sales;
- LOSS = a dummy variable equal to 1 if net income before extraordinary items is negative, and 0 otherwise.

Our hypotheses predict a positive coefficient on RD.INT (H1 and H3) and LOSS (H2 and H4).

Control variables

We selected control variables on the basis of prior studies into voluntary disclosure. Therefore, we use:

- SIZE, large firms are likely to provide more information because of investors' demand for information, lower average costs of collecting and disseminating information and increased demand for outside capital (Hossain *et al.*, 1995). We calculate SIZE as the natural logarithm of the total amount of assets at the end of fiscal year
- LEV, firms with high debt levels are expected to incur higher monitoring costs. As a consequence, managers of high debt companies might try to reduce these costs by disclosing more information in the annual reports (Ahmed and Courtis, 1999). Therefore, we calculate leverage as the total amount of debt over the total book value of equity.
- ROE, companies with high profitability could have incentives to make more corporate disclosures (Raffournier, 1995) because doing so would underscore their good performance to investors. Following Malone *et al.* (1993), Raffournier (1995), Gul and Leung (2004), and Garcıa-Meca and Martınez (2005), we use return on equity as a measurement of performance.
- M/B, it is market-to-book ratio (growth) measured by the ratio of market value to book value of equity. High growth firms use voluntary disclosures as a viable method for bridging a potential information gap due to higher asymmetry between managers and investors.

Table 3. The descriptive statistics for disclosure indices relative to R&D and financial information

Year 2011	Mean	Median	S. D.
FIN.INF	63.12%	61.58%	12.32
RD.INF	22.46%	33,33%	15.32
Year 2010	Mean	Median	S. D.
FIN.INF	59.22%	53.84%	10.69
RD.INF	21.16%	16.66%	14.39
Year 2009	Mean	Median	S. D.
FIN.INF	55.13%	53.84%	11.28
RD.INF	17.66%	16,66%	15.11
Year 2008	Mean	Median	S. D.
FIN.INF	71.78%	69.23%	12.69
RD.INF	23.34%	33.33%	15.97

Descriptive and univariate analysis

In table 3, we report the descriptive statistics of the extent of information revealed in annual reports. For example, we note that, in 2011, firms voluntarily disclosed, on average, information about 63.12% of the items relative to information for lenders. Instead, only 22.46% of the items relative to RD were disclosed by the listed companies included in the sample.

Table 4 shows certain significant correlations. RD.INF with ROE, RD.INF with M/B, RD.INT with M/B, LOSS with FIN.INF and FIN.INF with SIZE are significantly correlated ($p < 0.05$). LEV with FIN.INF, RD.INT with RD.INF and RD.INT with FIN.INF are strongly correlated ($p < 0.01$). FIN.INF with M/B, RD.INF with SIZE and FIN.INF with ROE are weakly correlated ($p < 0.1$).

Table 4. Correlation matrix

variables	1	2	3	4	5	6	7	8
RD.INF	1							
FIN.INF	0.099	1						
RD.INT	0.199**	0.213 **	1					
LOSS	0.081	0.171 *	0.051	1				
SIZE	0.113 †	0.159*	0.037	0.051	1			
LEV	0.034	0.229**	0.064	0.019	0.013	1		
ROE	0.141*	0.109†	0.071	-0.041	0.052	0.033	1	
M/B	0.153*	0.108†	0.163*	-0.033	0.058	0.029	0.023	1

Notes: Pearson's product-moment correlation coefficients.
*N = 156; 1-tailed: † p < 0.10; * p < 0.05; ** p < 0.01*

The regression models

We estimate two linear regressions by ordinary least squares. The first linear regression is on the disclosure index of information about R&D (RD.INF variable) and will test H1 and H2. The second linear regression is on the disclosure index of information about information (FIN.INF variable) and will test H3 e H4.

Regression analysis of disclosure indexes

In "model 1", we carry out the analysis on the basis of the following multiple-regression:

$$\textit{[Model 1]} \quad RD.INF = \alpha_0 + \alpha_1 RD.INT + \alpha_2 LOSS + \alpha_3 SIZE + \alpha_4 LEV + \alpha_5 ROE + \alpha_6 M/B + \varepsilon$$

Table 5. Model 1: results of regression analysis of RD.INF

Standardised regression coefficients are displayed in the table. N = 156	Model I
Control Variable	
SIZE	0.871*
LEV	0.354
ROE	0.412
M/B	0.975*
Independent Variable	
RD.INT	0.749**
LOSS	0.386
R^2	0.112
Adj R^2	0.076
Fsign	3.119**

*Note: **, *, indicate significance at 0.01 or 0.05 level, respectively.*

Table 5 presents the full regression results (model 1). The regression produces an adjusted R^2 of 0.076, which shows that a moderate percentage of the variation in the disclosure about R&D can be explained by linear variations of the variables within this model. From among the control variables, the SIZE variable is significant at the 5% level. The positive coefficient indicates that larger companies disclose more R&D information. This result is consistent with empirical evidence on voluntary disclosure according to which larger companies disclose more voluntary information about R&D than smaller companies (Arvidsson, 2003). According to the univariate findings, the market-to-book ratio (M/B) variable is found to be significant in the multivariate regression results (at the 5% level). Leverage (LEV) has not a significant impact on the extent of the disclosures about R&D. This result is consistent with other findings suggesting that the relationship is not significant (e.g. Giner, 1997; Ho and Wong, 2001; Ferguson *et al.*, 2002; Arvidsson, 2003).

With regard the independent variables, our hypotheses predict a positive coefficient on RD.INT (H1) and LOSS (H2). However, only RD.INT has a significant impact (at the 1% level) on the extent of the disclosure of R&D, therefore H1 is supported. On the other hand, no significant impact (of at least 5%) is registered for LOSS, therefore H3 is not supported.

The model is fit since *Fsign* is 3.119, significant at the 0.01 level.

In order to test our model, we measured the variance in the inflation factor (VIF) of each independent variable in the regression model. VIF values were found to be equal to 2.1, therefore the absence of multicollinearity is confirmed.

Finally, we test the results of the multiple OLS regression analysis by using the Breusch-Pagan test (Breusch and Pagan, 1979). The Breusch–Pagan test is used to test for heteroskedasticity in the linear regression models. The residuals are estimated and after this, an auxiliary regression analysis of the squared residuals is carried out on the independent variables. The results of these auxiliary regression show that the null hypothesis of homoskedasticity can be accepted in the model, both on the basis of the F-Statistic and on the basis of the test statistic $N \times R^2$.

In "model 2", we carry out the analysis on the basis of the following multiple-regression:

[Model 2] $\boldsymbol{FIN.INF = b_0 + b_1\, RD.INT + b_2\, AGE + b_3\, SIZE + b_4\, LEV + b_5\, ROE + b_6\, M/B + \varepsilon}$

Table 6 presents the full regression results (model 2). The regression produces an adjusted R^2 of 0.097. It shows that a percentage of 9.7% of the variation in the disclosure of information for lenders can be explained by linear variations of the variables within this model. The SIZE variable is significant at the 5% level. Finally, more significant effects are noted for M/B and LEV variables (p <0.01).

With regard the independent variables, our hypotheses predict a positive coefficient on RD.INT (H3) and on LOSS (H4). Both of the variables are found to have a significant impact on the extent of the disclosure of additional information for lenders. In particular:

- RD.INT is significant at the 1% level, therefore H3 is supported
- LOSS (significant at the 5% level), therefore H4 is supported

The model is fit since *Fsign* is 3.761, significant at the 0.01 level.

In order to test our model, we measured the variance in the inflation factor (VIF) of each independent variable in the regression model. VIF values were found to be equal to 2.7, therefore the absence of multicollinearity is confirmed.

Finally, we test the results of the multiple OLS regression analysis by using the Breusch-Pagan test. The results of this test show that the null hypothesis of homoskedasticity can be accepted in the model, both on the basis of the F-Statistic and on the basis of the test statistic $N \times R^2$.

Table 6. Model 2: results of regression analysis of FIN.INF

Standardised regression coefficients are displayed in the table. N = 156	Model 2
Control Variable	
SIZE	0.511 *
LEV	0.619 **
ROE	0.197
M/B	0.591**
Independent Variable	
RD.INT	0.619 **
LOSS	0.201 *
R^2	0.132
Adj R^2	0.097
Fsign	3.761 **

*Note: **, *, indicate significance at 0.01 or 0.05 level, respectively.*

4. Discussion and conclusion

As revealed in the literature, voluntary disclosures can have some disadvantages for the company, especially in terms of the costs of preparing and disseminating additional information.

Voluntary disclosure can also put a firm at a competitive disadvantage due to increased competition. On the other hand, more voluntary disclosures are also seen to improve stock performance (Healey *et al.*, 1999) and produce a higher stock price correlation with future earnings (Gelb and Zarowin, 2000).

The decision to consider R&D was not casual, but suggested by the fact that R&D is the main contributor to information asymmetries between financiers (shareholders and lenders), who provide funds, and managers, who make the operating decisions.

We looked for theories identifying possible information which it is opportune to disclose in order to reduce informative asymmetries. We found that opposing areas of literature made contributions which were suited to our aims:

- On the one hand, the literature refers to dissatisfaction with regard the limited information (about R&D) included in financial statements and, therefore, encourages further voluntary disclosure of information about R&D. Therefore, we measure the information that managers voluntarily provide about R&D;
- on the other hand, the literature denies that lenders are interested in information about R&D, suggesting that they look for more information than just that on intangibles. Therefore, we measure the voluntary disclosure of such more information.

We hypothesised that the benefits that firms gain from voluntary disclosure increase when investments in R&D assets grow (H1 e H3) and when earnings are negative (H2 e H4). Looking at the stakeholders to whom corporate communication is directed, hypotheses H1and H2 refer to shareholders, while hypotheses H3 and H4 refer to lenders. Since the effects of disclosure on competitive disadvantage "are complex and difficult to predict" (Guo *et al.*, 2004, p. 323) and the quantifying of competitive disadvantage in terms of models is particularly complicated, we follow the line of reasoning made by Cooke (1989), according to which, when a firm chooses to make voluntary disclosures, it can reasonably be assumed that the benefits are perceived of as exceeding the costs.

From a valuation (or shareholders) perspective, which emphasises dissatisfaction regarding information about R&D included in financial statements, we elaborated:

- hypothesis (H1), according to which firms with higher R&D intensity make more disclosures of R&D, since the value created by R&D which is not reflected in balance sheet measurements increases;
- hypothesis (H2), according to which firms that report losses make more disclosures of R&D, since negative earnings are less useful for evaluating intangible assets such as R&D.

From the prospective of lenders, who are generally only willing to lend to the firm to the extent that it has tangible assets because these assets typically retain much of their value in the event of bankruptcy/liquidation, we elaborated:

- hypothesis (H3), according to which as R&D (to which higher levels of informative asymmetry are associated) intensity increases, lenders will look for additional information about the firm operations (not strictly linked to R&D assets), particularly those concerning the financial leading indicators. In conclusion, the hypothesis is formed that firms with higher R&D intensity make more disclosures of information which will satisfy lenders informative needs.
- hypotheses (H4) that in firms which make losses, voluntary disclosure may make up for a lack in financial information in annual reports, providing lenders with the further information they require.

To test our hypotheses, we analyse a panel of 156 observations (39 firms over the four years from 2008 to 2011). The data for each firm was gathered from annual reports of sampled firms which were also listed on the Italian stock exchange in Milan. The findings support H1, H3 and H4, while H2 is not supported.

Our analysis shows that firms find it convenient to make voluntarily disclosures of both information about R&D assets (H1) and information for lenders (H3). This means that the intensity of R&D positively influences the management disclosure of additional information (in annual reports) about R&D for shareholders and other information for lenders. H4 is also supported and this means that the lack of earnings has an impact on disclosure of additional information for lenders. Lenders base their decisions about giving credit on information from the income statement and use that information to forecast future revenues, earnings, and cash flows. Our analysis confirms that lenders have greater demand for additional information to supplement the information on earnings in the event of losses. The opposite occurs in the shareholders' prospective, given that H2 is not supported by this analysis. Therefore, for shareholders, the lack of earnings does not mean that the income statement loses its usefulness in assessing firm value. It is likely that the approaches to equity evaluation which rely on information from the income statement will work well in evaluating companies, at least from the shareholders' point of view, even for firms with substantial R&D spending. This result is consistent with that which Penman (2007) demonstrated, i.e. that approaches based on income statement work well in evaluating companies, even those for which relatively large amounts of value are attributable to intangibles

Our study is not without its limitations. The models employed are only capable of explaining a part of the complexity of the entire phenomenon. In particular, the full models in Table 5 and 6, although statistically significant ($p < 0.01$), only explain, respectively 7,6% of the variance of the "voluntary disclosure about R&D" phenomenon and 9.7% of the variance in the "voluntary disclosure of information for lenders" phenomenon. Indeed, we need to bear in mind the fact that voluntary disclosure are complex phenomena and that the types of information we used (listed in tables 1 and 2) only represent a limited part of the variables affecting the behaviour of managers who voluntarily decide to provide additional information for the benefit of shareholders and lenders. Finally, the data for this study were gathered in Italy. Therefore, special attention should given when generalising about other national contexts on the basis of my discoveries.

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KNOWLEDGE TRANSFER MECHANISMS FOR EFFECTIVE DECISION-MAKING

P Govender*

Abstract

The study reflects on the core components of culture, communication, quality decision-making, mentoring and group success to indicate its enabling effect to transfer knowledge in today's organizations that are driven to keep afloat in competitive markets. The components serve as a conduit whereby knowledge transfer occurs on a regular basis for effective decision-making. A generalized approach of the study delves into areas that are embedded in an organization's routine functioning where the flow of knowledge is also the transfer mechanism to disseminate pertinent information in today's ever changing work environment.

Keywords: Knowledge Dissemination, Tacit Knowledge, Explicit Knowledge, Transfer Mechanisms, Decision Making

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1. Introduction

With the global economic meltdown and the twenty-first century organizational challenges, competitive businesses need to bloom and pilot continuous processes as improvement initiatives are the key focus. The evolving markets need to engage in quality improvements and knowledge embedded quality products and services. This competitive intensity compels a readiness with managers to be prepared for the demonstrability of tasks, workforce diversity and globalization. Knowledge, the strategic source of information guides organizations to attain the desired function with knowledge creation and knowledge transfer (KT) being the foundational tools of knowledge management. Tacit knowledge embedded in peoples' framework, and explicit knowledge are extremely importance to employees and organizations (Colquitt, LePine, Wesson, 2010). This study projects on the transfer of knowledge as an effective tool for decision-making and to project the relevant mechanisms or enablers that facilitate knowledge transfer effectively. In attempts to involve employees as participants, quality function deployment may be used as a technique to inform employees of how aspects of their products and services relate to customer satisfaction, thereby enabling them to make informed decisions about product improvement. Knowledge exchanges, including human capital knowledge transfers and face-to-face knowledge transfers fuel growth objectives in organizations. KT is the rim that grasps structures and strategies together in an environment dictated by speed and quality decision-making.

2. Literature Review

Knowledge, a strong competitive advantage in today's markets (Kharbanda & Pinto, 1996 cited in Landaeta, 2008) is emerging rapidly (Erasmus, Loedoff, Mda & Nel, 2006) so that organizations grasp the reality for business transactions and strategic moves. It is value-adding to knowledge creation or to the transfer process in organization with success depending on the spread of information and new knowledge, especially with emerging new products (Nonaka & Takeuchi, 1995 cited in Bou-Llusar & Segarra-Cipres, 2006), and for new technologies to deliver e-learning. Considering this, key milestones are accomplished with organizational sustenance, performance and capabilities. When equating knowledge to information, it is not surprising to find it defined mainly as a 'stock' rather than as a 'flow' (Fahey, 1998). The notion of flow indicates a radically different perspective of knowledge as it is in constant flux and central to everyday activities (Fahey, 1998), and it is the interaction which is essential for knowledge creation. Incidentally, KT is difficult to capture with no distinction between the transfer of knowledge and the creation of new knowledge (Bresman, Birkinshaw & Nobel, 1999). In this light, professional experiences and credentials (Lunce, Iyer, Courtnery & Schkade, 1993 cited in Eppler, 2006) may be necessary to build trust, and for effective KT too.

Management theorists have recognized the epistemological distinction between tacit and explicit knowledge. Clearly, the former is the means by which explicit knowledge is "captured, assimilated, created and disseminated" (Fahey, 1998:268), and the attributes and results of the two knowledge types must be understood, as both types 'solidify and ossify'. According to studies on the management of KT systems, it is 'explicit and unshared' knowledge rather than 'tacit and shared' knowledge which is valuable for organizations that require to make quality decisions continuously. Fundamental to this, it is how we process the two knowledge types effectively and what the main organizational factors are for process enhancement too (Rhodes, Hung, Lok, Lien & Wu, 2008). Tacit knowledge may be difficult to formalize, whereas explicit knowledge can be easily transferred. Writers affirm that effective KT is an interactive process (Huberman, 1994 cited in Jacobson, Butterill & Goering, 2005), consisting of exchanging, receiving and utilizing external knowledge (van Wijk, Jansen & Lyles, 2008). Tacitness, including complexity and specificity may influence the process of KT, as it can be transferred with interactive processes (Landaeta, 2008; Hansen, 1999 cited in Bou-Llusar & Segarra-Cipres, 2006) fundamental to today's competitive work environment. Yet, these factors hinder the transfer process and 'general causal ambiguity' (Reed & DeFillipi, 1990 cited in Bou-Llusar & Segarra-Cipres, 2006). Effective KT, achieved through "formal systems (for explicit knowledge) and social networks (for tacit knowledge)" (Rhodes, et al., 2008:85) contributes to growth, and organizational performance with success depending on 'baking specialized knowledge' into workers' activities that are highly skilled (Davenport & Glaser, 2002). Incidentally, knowledge management can be viewed as a social process and KT as part of the organizational learning as KT aims at the organizational accessibility of the knowledge (Rhodes et al., 2008).

To enhance KT effectively, robust knowledge management frameworks and models require a prominent place in management theory and practice (Rhodes et al., 2008). This concept relies on a 'culture of sharing' and a culture of 'collaboration and learning' instead of hoarding information (Daft, 2005). It is the development of, *inter alia*, tools, processes and structures to improve, share and use knowledge to perform tasks and solve problems. Knowledge dissemination stimulates the adoption of better practices for future decision-making, and working with professionals and, with specialized training contributes toward the effectiveness of knowledge dissemination (Falkenberg, 2002 cited in Yang, 2006).

3. Objectives of the study

- To conduct an exploratory analysis of the relevant literature.
- To theoretically evaluate each dimension in the study for the effective transmission of knowledge.

4. The dimensions of knowledge transfer

An exploratory analysis of the literature was conducted with an exploration of the KT dimensions. A proactive stance for organizations is to recruit qualified employees, invest in new technology and offer continuous training to upskill employees knowledge and their abilities, as skilled employees contribute to business excellence and new product quality. The transfer of knowledge can be enhanced by 'a structured network' which enables people to 'deposit and share knowledge'; a less bureaucratic structure; a trust culture with transparency; supported with incentives; and a learning strategy promoting a double loop learning (Senge, 1990 cited in Rhodes et al., 2008). KT is an objective-oriented transmission of knowledge (Rosenstiel, 2000 cited in Weissenberger-Eibl & Spieth, 2006) from a single person, group or organization to another person, group or organization. The success of KT is driven by the quality of the transfer which is based on the 'receivers horizon' (Kesseler, 2004 cited in Weissenberger-Eibl & Spieth, 2006).

4.1 Knowledge transfer and culture

In a knowledge driven economic environment, KT is the foundational element for the achievement of optimum and desired levels of functioning. In order to promote and foster knowledge transfer an organizational culture that is open to change and promotes learning is needed (Syed-Ikhsan & Roland, 2004 cited in Zarinpouch, Sychowski & Sperlin, 2007). This need is further indicated by cooperation and collaboration, finding and using high quality decisions and to develop skills to interpret the knowledge and apply it. This spells out that information sharing becomes challenging and creates a platform for a social interconnectedness with employees. This indicates that organizational culture is a main determinant in managing knowledge. The four parameters of human resources, technology, organization and methodological approaches have an impact on culture (Weissenberger-Eibl & Spieth, 2006). It may instil changes and support the development of products and services innovatively.

4.2 Knowledge transfer, information technology and communication

Today's organizations rely heavily on IT solutions for knowledge management (Ngai & Chan, 2005) with

the common types being email, groupware and instant messaging. Communication technologies increases the exchange of knowledge including those involved with the final goal of reducing time and the cost of processes. Davenport, DeLonge and Beers (1998) posited a positive relationship between IT systems and KT. IT speeds knowledge transfer but this system is not a final solution as keen people are needed to share information and knowledge (Wong & Aspinall, 2003). Organizational improvement with knowledge and innovation can occur by leveraging the skill of units through KT (Easterby-Smith, Lyles & Tsang, 2008). Whether horizontal or vertical, KT identifies and closes gaps in organizational performance. The optimization of organizational performance is when it is based on management and knowledge sharing in a culture of learning, innovation, including improvement (Kelemen, 2003). Computer networks, the Internet, collaborative computing indicate broader participation in the decision-making process (Kreitner, 2007). Furthermore, technology experts present evaluations of a new technology to managerial leaders to devise a new production strategy (McDermott, 1999 cited in Eppler, 2006).

Ko, Kirsch and King (2005) refer to KT as the communication of knowledge from a source for learning to take place and it is applied by the recipient. The diffusion of innovation enhances the high communication levels (Ghoshal & Bartlett, 1988 cited in Darr, Argote & Epple, 1995), and with KT workers transfer job relevant facts, suggestions and expertise (Bartol & Srivastava, 2002). KT through interpersonal or group conversations is evident in 'business constellations'. Eppler (2006) refers to the two modes of communication as (face-to-face) real time interactions and (media-based) interaction, and makes reference to the creation of new insights, facilitating KT, and turning understanding into committed action. It involves facts, figures and development, including context, background and basic assumptions. Other indicators necessary to KT include obtaining and reconstructing insights and to connect to one's own knowledge (Eppler, 2006). Knowledge communication requires a reciprocal interaction with decision makers and experts as both can gain comprehension by 'iteratively aligning their mental models' (Eppler, 2006), and there is enhancement of successful KT of "know-how (e.g., how to accomplish a task) and know-why (e.g., the cause effect relationships of complex phenomenon" (Eppler, 2006:2).

4.3 Knowledge transfer and group success

A group's success depends on a group's knowledge as they engage in problem-solving, decision-solving and contribute to their own field of expertise. Critical knowledge is often distributed across multiple individuals. Also, all group members do not have equal expertise (Baumann & Bonner, 2004 cited in Bonner & Baumann (2012). The authors posit that how 'high-quality member inputs' impact the end result or group product or failing to do so has implications for group effectiveness. A leader's guideline to teams enhances communications, and enriches team interactions (Daft, 2005). One strategy is to help members make use of the knowledge that they have and to improve the "quality of the group discussion, decision making and performance by promoting task demonstrability" (Bonner & Baumann, 2012:337). Transfer involves applying information which is known to solve 'novel problems' (Blanchett & Dunbar, 2001).

4.4 Knowledge transfer and mentoring

With any form of mentoring, there is trust building and respect. Problems and difficulties are discussed openly. With the sharing of experiences and concerns in an environment of trust the mentee can develop and grow his/her potential (Koskinen & Pihlanto, 2008). Mentoring boosts a person's capabilities and position, including behaviour and values at the workplace (Smit, Cronje, Brevis & Vrba, 2011), and hence employees need intense engagement during this phase. Mentoring is developmental and involves role modeling and sharing contacts and providing general support, amongst others. Although informal mentoring is more effective than a formal responsibility, there are cases where a formal mentoring program may be better, and companies require managers that are active and responsible (Gomez-Mejia, Balkin & Cardy, 2004). In this way, employees learn from the experiences of others and they can build their own networks and contacts to improve knowledge sharing. This connection with others who have expert knowledge in the mentoring phase is advantageous for employees to nuture their own innovativeness and move into new domains. If mentoring effectiveness is not measured then employees can perceive that mentoring is not really important (Gomez-Mejia, Balkin & Cardy, 2004). The knowledge that is transferred in the mentoring phase contributes to overall organizational success.

4.5 Knowledge transfer and quality decision-making

Quality, an attribute defined by the customer and knowledge processes are spurred on in organizations. Competition and new product launch enhances a company's performance but this has the 'unintended effect' of introducing consumers to 'newness' on a wide scale (Redmond, 2002 cited in Yang, 2006). Today's organizations focus on convinced customers relating to a company's quality products, including their praise for the organization. This is dependent on the transfer of knowledge on quality and

organizational processes. Quality depends on employees decisions for continuous improvement (Beer, 2003) and businesses are compelled to strengthen and precipitate their efforts to augment quality and sustain excellence, whilst seeking visibility in a consumerist society. Quality improvement is at its optimal level through employee involvement too (Hus & Shen, 2005 cited in Yang, 2006). Customers' tendencies are to judge products and services and favour the ones that reach high standards (Anyamele, 2005).

5. Conclusion

The study emphasized five foundational components for KT so that further research with a more detailed analysis can embark on the integration of new ideas as they surface. Failure to share knowledge also results in poor quality and people may not share important information as ownership may be lost. The study highlighted the pivotal role of effective KT for decision-making. By introducing and integrating KT to the decision-making process risks are minimized, and less experienced employees can use the knowledge of work colleagues in ways to improve productivity levels.

The embeddedness of the knowledge management process of knowledge acquisition, knowledge codification and knowledge dissemination, amongst others (Van Zolingen, 2001, cited in Yang 2006) is pivotal when making decisions. Whether knowledge transfer is in private companies, public organizations or project-based environments the purpose is to take note of the enabling mechanisms in place so that knowledge transfer and effective decision-making takes place to create business results.

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ECONOMIC ESSENCE OF EXPENDITURES AS THE MOST IMPORTANT OBJECTS OF ACCOUNTING, CONTROL AND ANALYSIS OF THE MAIN MANAGERS OF BUDGETARY FUNDS

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Abstract

Based on the study of general approaches to the definition of the term "expenditures", we define the economic essence of expenditures in general and expenditures of the main managers of budgetary funds in particular. This helps regulate the terminological apparatus of accounting, control and analysis in the sector of general state management, enabling the formation of a coherent concept of accounting, control and analysis of expenditures, taking into account the specific features of the main managers of budgetary funds.

Keywords: Expenditures, Costs, Budgetary Institution, Accounting, Modernization

Jel code: M41

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1. Problem statement

Since budgetary expenditures are conducted exclusively through budgetary institutions, they represent one of the most specific and important objects of accounting, control and analysis. In the general system of budgetary institutions' accounting the accounting of expenditures is the most difficult and the most critical process that requires permanent improvement.

The determination of the economic essence of budgetary institutions' expenditures, ways to improve their accounting, control and analysis have always been in the focus of scientific research. This research has been especially active in the recent years under the influence of the global integration processes, Ukraine's accession to the WTO and the prospects of its joining the EU. In particular, researchers and practitioners pay close attention to the development of ways to improve and modernize the accounting at those institutions, which receive the financial assistance exclusively through the budget. One of the main areas of the accounting system's modernization is the development and implementation of national standards, which will be based on the international ones.

The harmonization of the regulatory framework of accounting by the decree of the European Parliament and the European Union Council on the application of the international financial reporting standards should be the result of implementation of the state program for the adaptation of Ukrainian laws to the EU legislation approved by the Cabinet of Ministers of Ukraine. In this regard, an important task is the harmonization of terminological apparatus of accounting, control and analysis of the budgetary institutions' activity, which should take into account the specific features of the public sector institutions in Ukraine.

Measures to modernize accounting in the state sector and persons responsible for their execution are determined by the decree of the Cabinet of Ministers of Ukraine "On the strategy for modernization of the accounting system in the public sector for 2007-2015." One of the key objectives and expected results of the above-mentioned regulatory act is to adapt the accounting and reporting legislation to the international standards. The key task of the Strategy is to improve the accounting system through the development of the national regulations (standards) of accounting in the public sector [1]. This leads to the need to update the methodological and organizational approaches to accounting, control and analysis, taking into account the specific features in the activities of the state management institutions. It also imposes special requirements to the formation of information required for accounting and control purposes.

The ordering of the terminological apparatus of accounting in the general state management under conditions of restructuring is a primary task, since the latter is the fundamental basis for the further development of science. Considering the importance and specificity of the budgetary institutions' expenditures for carrying out their activities, it is important to clarify their economic nature.

2. Research goal

To investigate the economic essence of the budgetary institutions' expenditures and, on its basis, to determine the economic essence of expenditures of the budgetary funds managers.

3. The analysis of the recent research and publications

The expenditures of the budgetary funds managers are specific accounting objects, which according to their economic essence differ from the expenditures of the commercial sector entities. The issues of identification and specification of the economic essence of the budgetary funds managers, their classification characteristics, sources of financing as well as identification of the problematic aspects of accounting and control are always in the focus of scientific inquiry. In particular, the developments in this area are covered in the scientific papers of I. Lukyanenko, V. Dem'yanyshyn, O. Kyrylenko. F. Butynets, V. Lemishovskyy, M. Luchko, P. Atamas, B. Malynyak, A. Farion, M. Karpyshyn, A. Zaiachkivska, J. Tkachenko, S. Boyko, O. Klymenko, T. Bezrodna, O. Krupka, N. Poznyakovska, A. Lyubenko, T. Kanyeva, S. Svirko, R. Dzhoga, K. Salyamon-Mikheyeva, L. Zhelyuk, S. Kyriy, Y. Ivanechko, O. Kilyar, V. Melnychuk, O. Monayenko, S. Ermishova, S. Osadchyk, M. Hupalovska and others.

However, the researchers have neglected some specific peculiarities of the budgetary funds managers and their impact on the methodology and organization of accounting, control and analysis of expenditures. In particular, most authors focus on the formation and enforcement of budgetary appropriations of the budgetary funds managers, financial provision for carrying out the expenditures of institutions, inter-budgetary expenditures distribution, ensuring of the local budgets' effectiveness. The mechanisms of budgetary appropriations and of the expenditures carried out directly by the budgetary funds managers along with the specific features of their activities are not considered. The definition of the theoretical foundations of accounting, control and analysis of expenditures of the budgetary funds managers is a prerequisite for creating a clearly established organization and adequate methodology of their accounting, control and analysis and a necessary precondition for the efficiency, expediency and legality of use of the general and special funds.

In this regard, the determination of the economic essence of expenditures of the budgetary funds managers in relation to the economic essence of expenditures as an economic category is of particular relevance in view of the expansion of market relations in the budgetary sector of Ukraine and reforms of the national accounting system.

4. Main results of the study

The research of the concepts of "expenditures" and "budget expenditures" can fully describe the essence, content and purpose of expenditures of the budgetary funds managers considering that they all belong to public finance.

In accordance with the Budget Code of Ukraine the term "budget expenditures" is defined as funds allocated to implement programs and measures envisaged by the budget except for the money allocated for debt repayment, the provision of loans from the budget, allocation of budgetary funds on deposit, acquisition of securities, the return of the excess taxes and dues paid to the budget (mandatory payments) and other budget revenues, carrying out their budgetary compensation [2]. In this case, the emphasis is made on carrying out the expenditures according to the budget, which is crucial for the use of state financial resources, although this does not reveal the economic essence of the concept, just indicating that these funds are used for certain purposes.

This concept gets a differently interpretation from the standpoint of the finance theory. Such researchers as O. Vasylyk, V. Bazylevych and L. Balastryk argue that budget expenditures are an economic category and define them as economic relations of the distribution and use of a centralized budget fund. Usually, as a financial category, expenditures occur in the course of economic relations relating to the movement of financial resources between the budget process participants. However, within such general perception they cannot be considered separately from budget revenues and the definition of budget and public finances, which represent economic relations in the formation, distribution and use of centralized and decentralized funds of the state financial resources.

This approach to the understanding of state expenditures is commonly used, although some authors try to amend the interpretation of the term while this does not change the very essence of this category.

Considering this, the definition of V. Demyanyshyna is particularly good. It was formulated taking into account the views of the national researchers, including S. Yuri, G. Vozniuk, A. Zagorodniy regarding budget expenditures as aggregate economic relationships arising from the distribution of the central fund of financial resources and its use for the specific goals of industries, sectors and territories [3]. Although this definition does not reveal all aspects of this versatile concept, it indicates its economic content, which is caused by redistributive functions of the state, which strives to ensure the execution of its own functions taking care of the country's social and economic development.

In the economic literature there are attempts to define the concept of budget expenditures through the concept of costs leading to the controversy in using

the terms "costs" and "expenditures". A. Tsvetkov offers to define budget expenditures as "... public, continuous, direct expenses of the state related to its functioning, the distribution and use of central funds to ensure the fulfillment of tasks and functions of the state" [4, p. 21]. This approach is logical from the standpoint of the state that exercises its powers. However, it is incorrect, as the first and second concepts are identified with the use of certain resources that are available to the subjects of economic relations.

Therefore, the determination of the essence of expenditures of fund managers in the light of budget expenditures is not possible without considering the nature of the concept of "costs" and "expenditures" that are often identified. Often, the term "expenditures" is used in the field of public finance, and the term "costs" - in finance of non-state enterprises and state self-supporting organizations. To distinguish these categories one should examine the essence of each and highlight the most common features.

The dictionary gives the following interpretations of the words "expenditure" and "to expend":

- expenditure - 1) an amount of money, energy, materials etc., that is used to do something; 2) an amount of money that is spent on something;

- to expend - 1) to spend or to pay out something from the existing stocks; 2) to make use of for a specific purpose on the basis of official distribution or provision [5].

According to the above definitions, expenditures can be interpreted as an amount of money that is needed for a particular purpose. This approach describes the general features of relationships related to the allocation of funds for certain purposes. To expend means to provide something on the basis of official orders. In the area of fiscal relations the movement of funds is executed only in accordance with official orders or documents and authorized by state authorities.

Considering expenditures as accounting category the reference literature gives the following definition: "... in the language of accounting, expenditures, as opposed to costs, are related to the monetary costs or debt, which arises in connection with the acquisition of assets or services the benefits of which may be felt after the expiration of the current reporting period. In other words, expenditures mean a decrease in assets or increase in liabilities in connection with the acquisition of goods or services" [5]. However, it is not correct to apply this definition to the expenditures carried out by budget institutions, because, for example, the payment of scholarships is not an acquisition of goods or services. This is true for other transfer payments, where public institutions only play the role of "service providers" ensuring the performance of the state's social guarantees.

Some authors refer to expenditures as "expenses effected by an institution to perform its functions, including the expenses related to accounts payable, the accrued and unpaid salaries and wages - in short, credit indebtedness" [6, p . 274]. Such explanation of the term "expenditures" is correct. If we analyze the economic essence of all payments relating to the expenditures of budgetary funds managers we see that all of them are debts to the entities that ensure the functioning of institutions. However, this definition of expenditures is associated with the category of costs, which once again emphasizes the ambiguity of the expediency to separate these terms.

In general, from the standpoint of economics the term "costs" is understood mainly as a "monetary value of the sum of resources used for a certain purpose". McMillan Dictionary of Modern Economics treats the concept of costs as a "general measure of the amount that should be spent on obtaining something by means of purchasing, exchange or production" [7, p. 62]. The following definitions are related primarily to the production of certain products or services, but not to the field of public finance, which creates its own fund of financial resources allocated for certain needs to perform state functions. Therefore, the derivatives of the term "costs" are: production costs, reference costs, maintenance costs.

In the Russian dictionaries we come across the terms, which are almost identical according to their economic essence:

"затраты" – costs of an enterprise expressed in the monetary form (production and sales of products);

"издержки" - costs expressed in the monetary form resulting from the use of different types of economic resources in the process of production;

"расходы" - costs in the process of economic activity, which lead to a decrease in the assets of an enterprise or an increase in its liabilities [8].

These examples demonstrate that even in the reference literature these terms are interwoven and often substitute each other.

M. Benko observes "The analysis of domestic and foreign scientific works has shown that the terms "expenditures" and "costs" both in the economic and accounting literature are not synonymous. However, these concepts are often identified. Therefore, other terms have come out of use in Ukraine [9, p. 97]. Elizabeth F. Derbin in her manual "Economic theory and public sector" pays great attention to this issue describing the terms as follows:

"inputs" are synonymous with the term "resources". Resources are production factors, which are necessary for the production of other goods, i.e. capital, labor, land (natural resources), entrepreneurial skills, etc.;

"cost" is the value that is numerically equal to the cost of resources' acquisition.

If we carefully examine the author's statement, the concept of "costs" is the monetary expression of used resources, while "inputs" is the amount of

production factors in their original form. It justifies the economic nature of these categories, expressing the relationships between the concepts. It is also worth mentioning another prominent researcher. V. Sopko states: "The process of converting money into resources is called "costs"... The process of converting the resources into new products as a result of human activity until their sales can no longer be defined as "costs". Its historical term is "inputs" - the process of using natural resources and forces in the human activity "[9, p. 97].

As we see, the terms "costs" and "inputs" are in somewhat different categories, but both of them involve the use of resources for the creation of new products. Therefore, they are used mainly in the areas relating to the factors of production of new goods and services, the sales of which would provide the coverage of costs for the purchasing of new resources. However, the term "expenditures" is interpreted primarily as payments associated with the expenditure (use) of a certain amount of resources (mostly monetary) in order to ensure the execution of functions of a certain organization and, therefore, used mainly in the domain of public finance and budget relations.

To explain that costs and expenditures belong to different categories we can quote V. Demyanyshyna regarding the concept of "budget expenditures": "... the term "expenditures" is used to characterize those distribution relationships that involve the use of a centralized monetary fund of the state [3]. They are carried out during the stage of the GDP distribution and are characterized by the one-way movement of monetary resources. State authorities allocate expenditures (give money from their funds) for their further use without a simultaneous obtaining of the equivalent value of goods and services. Unlike budget expenditures, the expenses made by economic entities during the stage of exchange are characterized by the two-way movement of values, i.e. they are exchanged for an equivalent value of goods and services. In addition, expenses are an element in the formation of production costs of goods and services produced and realized by budgetary funds managers. Therefore, under certain conditions budget expenditures are transformed into costs (payment of wages and salaries, payments for inventory items, utilities, etc.). However, some expenditures may not take the form of costs while allocated budgetary resources continue their movement (scholarships, social assistance, repayment of loans, etc.)" [3]. We cannot agree with the author's assumption that the use of budget resources by final managers represented by public institutions represents their costs, because these institutions receive funds from the respective budgets and spend them on the basis of the state's decisions and approved planning documents, realizing at the same time the state's functions. In other words, such institutions execute budgets and provide public services (education, health, law and order, etc.). That is why they are the final link in the process of the budgetary funds' use ensuring the functioning of institutions, which provide such public goods.

These arguments confirm that for the movement of budgetary resources the term "expenditure" should be applied as opposed to the production sphere where the term "costs" is commonly used.

To determine the term "expenditures of budget funds managers" we shall distinguish some general approaches to the definition of the concept "expenditures":

funds allocated for the implementation of programs envisaged by the budget;

aggregate economic relationships arising from the distribution of the central fund of financial resources and its use for the specific goals of industries, sectors and territories;

making use of funds for a specific purpose on the basis of official distribution;

state non-refundable payments;

a decrease in assets or increase in liabilities in connection with the acquisition of goods or services;

expenses effected by an institution to perform its functions.

The term "expenditures of budget funds' managers" is derived from the term "expenditures". Therefore, it should be defined as economic relations relating to the distribution and use of resources by the budget funds' managers.

The literature provides a different interpretation of the term, which is closer to the practices of budgetary institutions. Such scholars as F. Butynets, V. Lemishovsky and P. Atamas under expenditures understand the amount of money spent by budgetary institutions in the process of their economic activities within the amounts determined by budget estimates. This interpretation of the term is based on the normativity of budgetary relations. Therefore, the basis for an official allocation of a budgetary institution's expenditures is considered to be a budget estimate as the basic document of a budgetary institution in the process of spending its financial resources. Considering that the process of approval and implementation of the budget estimate is a combination of economic relations between the managers of budgetary funds and financial and state authorities, the estimate is an instrument of official distribution of funds belonging to budgetary institutions. This confirms the normativity of the movement of budget funds and fiscal relations in general, but does not fully reveal their economic essence. Expenditures as a financial and economic category are the totality of economic relations that require well-defined procedures for their implementation. Considering that the estimate of a budgetary institution is the main planning document, which determines the amounts of revenues, their use and distribution, it is reasonable to consider expenditures as the process of spending of the

budgetary resources by an institution according to the approved budget.

Objectively, the term "expenditures of budgetary institutions" refers to the field of public finance. According to its economic nature it serves as economic relationship in the movement of budgetary resources from the stage of their prescription in legal acts and estimates of budgetary institutions to their direct use by managers and recipients of public funds. This concept is different from the category of "costs" used by business entities that produce goods and services to determine their cost. The term "costs" is associated primarily with the cost of the material, labor and financial resources used in the manufacturing process as opposed to "expenditures", which is associated with redistributive relations regarding the use of certain funds of financial resources. In addition, the peculiar feature of the budgetary sphere is the regulation of movement of budgetary resources and, hence, the use of public funds. Therefore, inherent in such a versatile concept as "expenditures of budgetary institutions" is the approved official schedule for the formation, distribution and use of budgetary resources making it possible to carry out an accurate accounting, planning and control of economic relations.

The expenditures of budgetary funds' managers are certain payments carried out for specific purposes; economic relations relating to the distribution and use of financial resources on non-refundable basis. Therefore, expenditures can be defined as economic relations of the distribution and use of public funds for specific purposes based on official state distribution.

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FAMILY BUSINESS DEFINITION: A MATTER OF CONCERN OR A MATTER OF CONVENIENCE?

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Abstract

This paper attempts to examine the impact of adopting multiple family ownership cut-offs in defining family businesses, family ownership measurements, and conducting different types of analyses. For achieving this goal we have focus on the relationship between family ownership and firm performance (ROA) in the context of emerging market (Saudi Arabia), controlling for firm's debt, age, size and industry sectors. With three family ownership cut-offs: 5%, 10%, and 20% and two type of analysis (cross-sectional and cross-sectional and time-series data) as well as two types of family ownership measures (ratio and dummy), we fond that the relationship between the two variables is consistent despite of the level of family ownership cut-off, analysis type, and measurement. This indicates that family business definition is not a matter of concern for researchers, but rather a matter of convenience.

Keywords: Family Business, Family Ownership, Emerging Markets

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1. Introduction

Despite many studies dedicated to family business studies by academicians, practitioners, researchers, scholars and investors all over the world, a consensus regarding its definition has not yet been reached (Brockhaus, 2004; Litz, 2008; Arosa, Iturralde, & Maseda, 2010; Iturralde, Maseda, & Arosa, 2011). Until today, there is no clear definition concerning the term and several aspects of it has been investigated from varying perspectives and with different criteria based on institutional legal contexts (Allouche, Amann, Jaussaud, & Kurshina, 2008).

Some studies have made use of a general definition; others have narrowed down its definition (Shanker & Astrachan, 1996). Chua, Chrisman, and Sharma (1999) noted that the number of family business definitions adopted in prior research was not less than 21. However, a recent study by Litz (2008) revealed that there are 30 definitions proposed in academic papers and articles dedicated to the family business field. Hence, it is not surprising that no agreement has been reached since the launching of Tagiuri and Davis's (1982) influential three-circle model comprising family, ownership and management.

To summarize all the available definitions, Villalonga and Amit (2006) claimed that there are three dimensions of family firm definition as noted from prior studies; the portion of capital holding and voting rights, management position by family members and company control. On the basis of the three dimensions, the definitions can be categorized into ownership, governance (e.g., family board and family chairman) and management (e.g., family management and family CEO), as shown in Table 1.

As can be seen from Table 1, family business has been defined by holding at least five percent of the company's outstanding shares by several studies (e.g., Miller, Le Breton-Miller, Lester, & Cannella,

2007; Saito, 2008). Others required ten percent (e.g., Smith & Amoako-Adu, 1999; Barontini & Caprio, 2006; Maury, 2006; Ben-Amar & André, 2006; Sacristan-Navarro, Gomez-Anson, & Cabeza-Garcia, 2011), twenty percent (e.g., Sraer & Thesmar, 2007), twenty five percent (e.g., Andres, 2008; Kowalewski, Talavera, & Stetsyuk, 2010) and even fifty percent of the ownership (e.g., Martinez, Stohr, & Quiroga, 2007; Arosa et al., 2010). However, some researchers do not require any ownership threshold to be held in order to consider a firm as family firm, but instead they focus on family relationship among shareholders, directors, CEOs and chairmen (e.g., Anderson & Reeb, 2003; Filatotchev, Lien, & Piesse, 2005, Lee, 2006; Villalonga & Amit, 2006).

Table 1. Family Firm Definition Criteria from Previous Studies

Source	Ownership Cut-off	Country	Ownership	Governance		Management	
			Family Ownership	Family Board	Family Chairman	Family CEO	Family Management
Smith & Amoako-Adu (1999)	10%	Canada	√			√	
Anderson & Reeb (2003)	No required	U.S.	√	√			
Filatotchev et al. (2005)	No required	Taiwan	√				
Villalonga & Amit (2006)	No required	U.S.	√	√		√	
Lee (2006)	No required	U.S.	√	√			
Barontini & Caprio (2006)	10%	Europe	√				
Maury (2006)	10%	Europe	√				
Ben-Amar & André (2006)	10%	Canada	√				
Sraer & Thesmar (2007)	20%	France	√				
Martinez et al. (2007)	50%	Chile	√	√			√
Miller et al. (2007)	5%	U.S.	√				√
Saito (2008)	5%	Japan	√		√	√	
Andres (2008)	25%	Germany	√	√			√
Arosa et al. (2010)	50%	Spain	√	√			
Kowalewski et al. (2010)	25%	Poland	√				
Sacristán-Navarro et al. (2011)	10%	Spain	√				

It is evident that the lack of consensus regarding the definition of family business makes the topic ambiguous. One example that illustrates such ambiguity is that the researcher can derive contrasting results by adopting different definitions for family business even when the same dataset is used (Shanker & Astrachan, 1996). In the context of the U.K., Westhead, Cowling, and Storey (1997), as cited by Klein (2000), stated that even with a single set of data, the percentage of family businesses differs from 15% to 78.5% according to the criteria employed. In a related study, Westhead and Cowling (1998) clarified how the different definitions of the term may impact the comparative studies between family and non-family businesses. They first divided the companies into two categories – family and non-family business – on the basis of seven definitions, and contrasting findings were achieved.

Along the same lines, Astrachan and Shanker (2003), also, examine the impact of employing a

different definition of family firms. They noted that the contribution of family businesses to the U.S. GDP and its workforce varies on the definition employed. A broader definition of the term that requires only family participation and control showed that family firms constitute 64% of the U.S. GDP and that they employ 62% of the total workforce while a narrower definition, which encompasses multiple generations, showed that the percentage of family businesses contribution decreased to 29% of the U.S. GDP and employed a mere 27% of the total workforce. Moreover, when they employed a more refined definition, it called for the founder's or the descendants' willingness to retain the company within the family control. Under this view, they revealed that the percentage of family businesses fell between the two prior statistics, i.e., the GDP contribution was at 59% and employment was at 58% of the U.S. total workforce. Contrary, Kowalewski et al. (2010) employed multiple family ownership cut-offs in their study (20%, 30%, 40%, and 50%) beside their primary ownership cut-off (i.e. 25%) for identifying family firms in order to confirm the non-linear relationship between family ownership and firm performance, the results kept their sign and significance when 20% and 30% cut-offs have been used. However, non-significant coefficients were found when high level of ownership thresholds are adopted (i.e. 40% and 50%).

This shows that the definition of family business may be one of the most important elements in family business studies (Brockhaus, 1994) and searching for the most accurate and suitable operational definition is a matter of research (Chrisman, Chua, Steier, 2005; Chrisman et al., 2007; Chrisman, Kellermanns, Chan, & Liano, 2010). Such results urged the researchers to focus on the first dimension proposed by Villalonga and Amit (2006) and examine the effect of adopting varying family ownership cut-offs toward firm performance and provide new evidence from emerging context. Hence, to reach the goal of this paper we will adopt three different family ownership cut-offs (5%, 10%, and 20%) to identify the firms as family firms, using two types of measurements (ratio and dummy variables) individually, and conducting two type of analyses: cross-sectional and cross-sectional time-series.

2. Methodology

This study utilised data collected over five years of observation (2007-2011) from all non-financial companies listed on the Saudi Stock Exchange, commonly known as *Tadawul*. We chose 2007 as the beginning period because Saudi corporate governance mechanisms was enforced by the Capital Market Authority (CMA) towards the end of 2006 and were only implemented by the PLCs in 2007. We stopped at 2011 because it was the most recent year in which all published annual reports were available at the time of data collection. Data were collected from the audited annual reports, retrieved from the website of the Saudi Stock Exchange (www.tadawul.com.sa), and form Thomson DataStream. Missing data were supplemented through the information taken from varying sources, particularly via online (e.g., Aljoman.net, Zawya.com, Gulfbase.com, Argaam.com).

The initial sample of firms used in this study is 150 PLCs. From this sample, we eliminated 11 financial institutions, 31 insurance companies, and 33 companies with missing or incomplete annual reports. The final sample consists of 75 firms, involving 375 firm-year observations. Financial institutions and insurance companies were omitted because of the different accounting and governmental regulations imposed on them (Alsaeed, 2006; Claessens & Djankov, 1999; Lee, 2006; Lemmon & Lins, 2003). Consequently, any comparison between the performance measures of financial and non-financial institution will not be fair and applicable (Martinez et al., 2007).

3. Research Models and Measurements

$$\text{Firm performance} = \alpha_0 + \beta_1(\text{family ownership}) + \beta_2(\text{firm debt}) + \beta_3(\text{firm age}) + \beta_4(\text{firm size}) + \beta_5(\text{industry dummies}) + \varepsilon$$

Where Firm performance is the dependent variable and includes Return on Assets, α_0 *= the constant, family ownership= ratio o family ownership to the total firm ownership, firm debt = ratio of the book value of long-term debt to total assets, firm age = natural log of the number of years since the firm's inception, firm size = natural log of the book value of total assets, industry dummies includes eight dummies that are: PET = Petrochemical sector, CEM = Cement sector, RET = Retail sector, FOD = Agriculture and food sector, INV = Multi-investment sector, IND = Industrial investment sector, BLD = Building and construction sector, EST = Real estate development sector,* ε *= the error term.*

The dependent variable is firm performance measuring by Return on Assets (ROA). It is a ratio calculated as the net income divided by the book value of total assets (Anderson & Reeb, 2003; Haniffa & Hudaib, 2006; Perez-Gonzalez, 2006). The explanatory variable of this study is family ownership, measured as the proportion of shares (direct and indirect shareholding) held by the family members over the total number of shares issued (Anderson & Reeb, 2003; Wang, 2006; Kowalewski et al., 2010; Sacristan-Navarro et al., 2011). To identify the firm as family firm, family shareholders must own at least 5% of the outstanding firm's shares and at least one member of the controlling family is involved either on board of the directors as chairman/director or in the management as

CEO/executive. As suggested by previous studies in family business, we used four control variables, namely firm debt, firm age, firm size, and industry sectors. Firm debt is a ratio of the book value of long-term debt to total assets (Anderson & Reeb, 2003; Martinez et al., 2007). We measured firm age and firm size as the natural log of the number of years since the firm's inception (Anderson & Reeb, 2003; Arosa et al., 2010; Martinez et al., 2007; Sacristan-Navarro et al., 2011) and the natural log of the book value of total assets (Wang, 2006) respectively. However, to control for industry sectors, nine dummy variables were introduced representing nine industrial categories that are petrochemical, cement, retail, agriculture and food, multi-investment, industrial investment, building and construction, real estate development, and others (including telecommunications and information technology, energy and utilities, hotel and tourism, transport, media and publishing), whereby but the dummies used are one less than the number of categories (Arosa et al., 2010)

4. Results and Discussion

From Table 2, it can be clearly seen that the percentage of family and non-family firms differs substantially according to the family ownership cut-off employed. Family firms under 20% family ownership cut-off are far less than 34% of those defined by the 5% family ownership cut-off. Contrarily, non-family firms reported to constitute 43.37% of Saudi Exchange Stock when 5% cut-off is used. This percentage has been increased gradually to 56.80% and 77.60% when 10% and 20% family ownership cut-off were employed respectively. Such findings lend support to the previous argument made by Klein (2000) that one dataset can produce different results if different definitions operationalised

Table 2. Number and Percentage of Family and Non-family Firms

	5% Cut-off		10% Cut-off		20% Cut-off	
	Number	**%**	**Number**	**%**	**Number**	**%**
Family	212	56.53	162	43.20	84	22.40
Non-family	163	43.47	213	56.80	291	77.60
Total	375	100	375	100	375	100

Table 3. Spearman Correlations among Variables

	Mean	Std. Dev.	VIF	ROA	Family Ownership	Firm Debt	Firm Age	Firm Size
ROA	.0651283	.0948622		1.00				
Family Ownership	.1276267	.1761288	1.11	0.20***	1.00			
Firm Debt	.1381355	.152163	2.11	-0.10	-0.05***	1.00		
Firm Age	24.41333	12.52708	1.33	0.23***	0.03***	-0.21	1.00	
Firm Size	10,300	39,200	1.99	0.15	-0.04	0.58***	-0.13	1.00

Note: Firm size is total assets expressed in millions of Saudi Riyals. p<0.10, ** p<0.05, *** p<0.01*

Table 3 represents the Spearman correlation among all variables. There were strong significant correlation between ROA as an outcome and family ownership and firm age as predictors. The presence of multicollinearity between the indicators was checked and found that it is not a problem in our study as the highest observed variance inflation index (VIF) was far below the value of 10 that would suggest multicollinearity (Hair, Black, Babin, & Anderson, 2010).

As the main objective of this paper is to investigate the impact of employing different family business definitions on the relationship between family ownership and firm performance, we provide estimates from number of Ordinary Least Square (OLS) regressions as depicted in Table 4. In panel (A) we measured family ownership using a continuous variable (i.e. the proportion of family's shares over the total issued shares of the company).

However, a dummy variable has been used in panel (B) instead of family ownership continuous variable as an indicator to whether the company is family firm or not. The dummy variable takes the value of 1 if the company is owned by a family owner and 0 otherwise. In each panel, regression analysis was used to examine the relationship between family ownership and firm performance in three models including firm debt, firm age, firm size, and industry dummies as control variables. Each model represents unique family ownership cut-off as we mentioned earlier (i.e. 5%, 10%, and 20%) in order to confirm the variability/invariability of the results consequently. As can be clearly noticed that all OLS regressions in panel (A) and panel (B) produce

identical regression coefficients despite the value of the cut-off that is used to identify the family ownership and type of family ownership variable (i.e. continuous or dummy). Moreover, all the regression coefficients presented in Table 4 shows significant at the 1% significance level.

Table 4. Results of Cross-Sectional Analyses

Variables	5% Cut-off	10% Cut-off	20% Cut-off
Panel (A): Family Ownership (Ratio)			
Family Ownership	0.130*** (5.46)	0.134*** (5.72)	0.134*** (5.87)
Firm Debt	-0.150*** (-3.93)	-0.154*** (-4.05)	-0.134*** (-3.52)
Firm Age	0.022*** (3.51)	0.021*** (3.38)	0.024*** (3.84)
Firm Size	0.011*** (3.28)	0.011*** (3.28)	0.011*** (3.11)
Industry Dummies	Included	Included	Included
R^2	0.36	0.36	0.37
F-value	16.89	17.24	17.45
Prob > F	0.0000	0.0000	0.0000
Panel (B): Family Ownership (Dummy)			
Family Ownership	0.130*** (5.46)	0.134*** (5.72)	0.134*** (5.87)
Firm Debt	-0.150*** (-3.93)	-0.154*** (-4.05)	-0.134*** (-3.52)
Firm Age	0.022*** (3.51)	0.021*** (3.38)	0.024*** (3.84)
Firm Size	0.011*** (3.28)	0.011*** (3.28)	0.011*** (3.11)
Industry Dummies	Included	Included	Included
R^2	0.32	0.34	0.36
F-value	13.96	15.35	16.68
Prob > F	0.0000	0.0000	0.0000

*t statistics in parentheses, * p<0.10, ** p<0.05, *** p<0.01*

We also decided to use different type of analysis, specifically Random-Effects models for cross-sectional time-series (panel) data, in order to know if the analysis type may impact the consistency of the results. All regression results are presented in Table 5. It shows that the regression coefficient of our main variable (i.e. family ownership) keeps its sign (positive) without change and still statistically significant, although its coefficient is comparably low than what have been reported for in Table 4.
Similarly, all control variables have not changed in terms of sign and significance except firm age, which was positively significant in cross-sectional models, and turned out to be insignificant but sill positive when random effect models were adopted.

5. Conclusion

In this paper we attempt to answer two questions: does employ different family ownership cut-offs may change consequently the results of family firm performance? and does the type of analysis change the consistency of the results?. In order to answer these question, a dataset of 75 non-financial public listed companies in Saudi Exchange Stock for a period of five-year (2007-2011) was employed. First, considering the data as cross-sectional, we regressed family ownership as indicator against firm performance (ROA) as outcome using two types of variables separately; continuous variable (ratio) and dummy variable. Each type of variable included in three models, every model represents a unique family ownership cut-off (i.e. 5%, 10%, and 20%). Secondly, to answer the second question we consider our data as cross-sectional time-series and conducted an appropriate analysis following the same procedures that applied previously. The results show that neither employing different family ownership cut-offs nor conducting different type of analysis changed the results of family ownership performance. Our main variable (family ownership) was consistent throughout all models and no change has been occurred to its direction and significance. This indicates that the researcher must not pay more attention toward the ownership cut-off in order to identify family firms. Such decision, actually, depends on the logic and rationality of the researcher, bearing in mind the unique characteristics of the studied sample.

Table 5. Results of Cross-Sectional Time-Series Analyses

Variables	5% Cut-off	10% Cut-off	20% Cut-off
Panel (A): Family Ownership (Ratio)			
Family Ownership	0.096** (2.36)	0.098** (2.52)	0.101*** (2.75)
Firm Debt	-0.109*** (-2.61)	-0.112*** (-2.68)	-0.105** (-2.52)
Firm Age	0.006 (0.62)	0.006 (0.59)	0.008 (0.78)
Firm Size	0.012** (2.04)	0.012** (2.04)	0.012** (2.04)
Industry Dummies	Included	Included	Included
R^2	0.34	0.35	0.35
Wald chi²	55.52	56.95	58.58
Prob > F	0.0000	0.0000	0.0000
Panel (B): Family Ownership (Dummy)			
Family Ownership	0.096** (2.36)	0.098** (2.52)	0.101*** (2.75)
Firm Debt	-0.109*** (-2.61)	-0.112*** (-2.68)	-0.105** (-2.52)
Firm Age	0.006 (0.62)	0.006 (0.59)	0.008 (0.78)
Firm Size	0.012** (2.04)	0.012** (2.04)	0.012** (2.04)
Industry Dummies	Included	Included	Included
R^2	0.30	0.32	0.34
Wald chi²	45.51	49.65	55.03
Prob > F	0.0000	0.0000	0.0000

*z statistics in parentheses, * p<0.10, ** p<0.05, *** p<0.01*

In conclusion, this study refines our knowledge of the importance of family business definition and its impact on the family business researches' outcomes. The study provides evidences on the importance of family ownership cut-off decision to identify family firms, as well as the equality of analysis types in producing same results. Although the findings are interesting, the present study has a limitation and calls for further research. Specifically, examining the impact of choosing different family involvement criteria (e.g. family governance, and family management) in constructing an appropriate definition is a fruitful avenue for future studies. This work could be also extended by re-examining the model with additional family involvement variables (e.g. family CEO and family chairman).

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CAPITAL STRUCTURE IN THE CONTEXT OF CEO'S RENT EXTRACTION

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Abstract

This paper investigates the impact of earnings management on market return (by the proxies of discretionary accruals and earnings response coefficient/CAR regarded as accounting and market based earnings quality, respectively) along with a number of moderating (both governance and financial) variables in an emerging market context. Indonesia. Building on extant literature and using panel data approach, it examines 52 manufacturing firms listed on the Indonesia stock exchange during 2007 to 2010 periods. Applying Modified Jones Model to measure earnings management, our regression analysis reveals that earnings management has significant negative influence of market return. Of the moderating variables, board size, leverage and firm size are showing significant effects on market return, but not the institutional ownership. Again, observing the use of moderator effects on earnings management, our findings confirm that board size has more predictive power than institutional ownership in deterring earnings management and weaken the association between earnings management and market return. Similarly, leverage has strengthened the relation between earnings management and market return showing more exposure to earnings management while firm size showing a tendency to weakening earnings management, on the contrary. These results have enormous implications for Indonesian corporate sector and policy makers in adopting appropriate governance measures to constrain earnings management and improve quality of earnings.

Keywords: Cost of Capital, Financial Leverage, CEO's Power

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1. Introduction

Since Modigliani and Miller's (1958) debt irrelevance proposition in a world of no taxes and no other market imperfections, enormous work has been done on the choice of corporate capital structure. Modigliani and Miller (1963) show that with corporate tax and the tax deductibility provision of interest, the firm's valuation rises with more debt, suggesting optimal financial leverage of 100%. The trade-off theory (see Leland and Toft (1996), among others) introduces the probability of costly bankruptcy and shows a finite financial leverage which minimizes the weighted average cost of capital. The pecking order theory (see Myers (1984)) proposes that due to an adverse signalling of external equity financing, firms prefer retained earnings as the main source of funds, followed by debt and then finally the issuance of new shares. This theory, unlike the trade-off theory, does not suggest an optimal financial leverage. The agency cost theory (see Jensen and Meckling (1976)) proposes an optimal level of debt by trading off the agency costs of equity with the agency costs of debt. The signalling theory (see Myers and Majluf (1984) and Harris and Raviv (1990)) argues that capital structure is affected by financing decision acting as a signal for firm's investment prospects. These theories have been extensively empirically tested with mixed results although studies showing the validity of the trade-off theory have been more frequent (for example, see Jalilvand and Harris (1984) and Frank and Goyal (2003), among others). In this paper, we assume the trade-off theory and also incorporate the agency costs of debt. In addition, we introduce another factor in the choice of financial leverage from the executive compensation literature, and that factor is the CEO's bargaining power in his/her rent extraction behavior.

The topic of CEO compensation has attracted investigation from several inter-disciplinary scholars (for example, a very limited sample is: Jensen and Meckling (1976) and Murphy and Zábojník (2004) from finance and economics; Bebchuk and Fried (2004), Van Essen et al. (2012) and Braendle and Katsos (2013) from management; O'Reilly and Main (2010) from psychology; DiPrete et al. (2010) from sociology). In this paper, following Bebchuk and Fried (2004) who contend that CEO pay levels

represent successful rent seeking made possible by increased CEO power over the board and the pay setting practices, we postulate CEO's rent seeking behavior. The issue of whether CEO's rent extraction has a market-based explanation or is beyond market determined pay is not relevant for this paper. What is relevant here is that there is rent extraction by the CEO.

Some corporate CEOs act like hegemons (Sharma et al., 2013). Sources of their hegemonic power include share ownership, ability to manipulate membership composition of the board of directors, exchange of favors through participation in interlocking directorship and power to reward supporters and punish detractors. Once a hegemonic power base is created, CEOs perpetuate it by having weak corporate governance with fewer independent outside directors. This will allow CEOs to manipulate choice of nominating and compensation committees members (Hermanson et al., 2012; Graham et al., 2013), and thereby to extract rent in the form of excess compensation.

In this study, an infinite-period deterministic model of CEO' rent extraction, where rent is measured by economic value added, EVA, of the firm is proposed. EVA was coined and popularized by Stern-Stewart and Co in 1991. Since then, EVA has gained popularity especially in USA, UK and European countries as an internal control technique and an external performance measure (see a literature survey article on EVA by Sharma and Kumar (2010)). Chamberlain and Campbell (1995) show that EVA allows management to know which way the company is heading. Wallace (1998) asserts that EVA's most powerful feature is its relevance to management compensation systems.

The EVA is the difference between the after-tax net operating earnings and the total cost of employed capital. This means EVA provides a true extra value as all the stakeholders in the firm are fully paid their contractually fixed payments or their opportunity cost of funds. Since EVA is a residual profit, it must belong to common stockholders who are the residual claimants. In Pandher and Currie (2013), it is postulated that the residual profit is shared between the CEO and other stakeholders: employees, suppliers, partners and customers, not between the CEO and the equityholders. In their model, like in our model, the shareholders earn the opportunity cost of their funds, but we see no logistics by which sharing of residual earnings can take place between the CEO and other stakeholders. Equityholders are the claimant of residual earnings; therefore, sharing has to be between the CEO and equityholders. However, the CEO attempts to extract EVA and the level of extraction will depend on CEO's bargaining power.

The variables that can affect the CEO's bargaining power include factors such as number of independent directors in the board, the size of the board, relative size of institutional holding of voting common shares and the threat of dismissal or takeover. We postulate in this paper that the financial leverage may also affect CEO's entrenchment, and if this is so, this effect itself becomes a factor in the determination of financial leverage. Berger et al. (1997) show empirically that whenever CEOs entrenchment rose due to a reduced pressure from ownership or compensation incentive or active monitoring of their performance or threat of takeover, financial leverage declined. In this paper, we argue that CEOs' entrenchment may itself be affected by changing financial leverage.

Jiraporn et al. (2012) argue that due to agency conflicts between ownership and control, managers may not select financial leverage which is value-maximizing for equityholders. However, we note here that CEO may select debt level lesser than optimal for several reasons including keeping some debt capacity to take advantage of unexpected profitable projects in the future (Agha (2013) among others), the non-diversifying nature of CEO's human capital tied up with firm (Fama, 1980), a negative effect of interest payments on free cash flows (Grossman and Hart, 1982) and management dislike for performance pressure associated with commitments to pay a large amount of cash to creditors regularly (Jensen, 1986). On the other hand, dominant CEOs may overleverage in order to raise the relative voting power of their equity stake (Harris and Raviv, 1988; Stulz, 1988). Also, as noted by Berger et al. (1997), dominant CEOs may sometimes select excess leverage as a signal to pre-empt takeover attempts by outsiders. Empirical findings on capital structure also indicate the choice of leverage at the optimal point, below it and above it, although more studies find that firms choose their target capital structure (see, for example, Jalilvand and Harris (1984); Opler and Titman (1994); Titman and Wessels (1988); Shyam-Sunder and Myers (1999), among others). In this paper we shall show that CEO will mostly adopt optimal leverage but if CEO's bargaining power is reduced by more debt, CEO may select leverage which is lesser than optimal, and if CEO's bargaining power is raised by more debt, CEO may select leverage which is more than the optimal point.

The rest of the paper is organized as follows: In section 2, an infinite-period deterministic model of CEO's rent extraction is proposed. The theoretical results are derived in section 3. Section 4 provides an elaborate numerical illustration of the results of the model. The summary and conclusions of the paper are provided in section 5.

2. A model of CEO's rent extraction

2.1 Assumptions of the model

The assumptions of the model are the same as of the Modigliani-Miller framework except some assumptions that relate to probability of costly

bankruptcy and the agency costs of debt. Infinite identical periods are assumed. The firm starts at each period with operating capital, C_0, which is raised at the cost of capital, K, and produces the after-tax net operating profit, EBIT (t-1), where EBIT is earnings before interest and tax and t is the corporate tax rate. The investment assets of the firm are assumed to be fixed which means annual capital expenditure is equal to the annual depreciation and firm's plow-back ratio is zero. There is no preferred stock and the par value of debt at issuance is set to be equal to market value.

It is well-known that there are both direct costs of bankruptcy, viz. costs involved with bankruptcy proceedings and value of lost management time; and indirect costs of bankruptcy, viz. the sale of assets at fire sale prices, lost investment opportunities, etc. The present value of expected bankruptcy costs rise at an accelerating rate with increasing level of debt because of rising probability of bankruptcy. We assume that the present value of expected bankruptcy costs, denoted by PVEBC, is given by:

$$PVEBC = \gamma D^2, \gamma > 0 \quad (1)$$

The agency costs of debt, which consist of costs of monitoring devices to prevent moral hazard-based transfer of wealth from creditors to shareholders and costs of writing and enforcing protective covenants, are expected to be higher with higher level of debt. Accordingly, we assume that the present value of these costs, denoted by PVACD, is given by:

$$PVACD = \delta D, \delta > 0 \quad (2)$$

2.2 Specification of the model

Denoting V as the market value of the firm, V_u as the market value of the firm when it has zero debt, E as the market value of firm's equity, D as the market value of firm's debt, K_E as the required rate of return on firm's equity, and K_D as the required rate of return on firm's debt, and using the above assumptions and earlier notation, the following equations specify the model's corporate finance framework:

$$E = (EBIT - K_D D)(1 - t)/K_E \quad (3)$$

$$V = V_u + tD - (\gamma D^2 + \delta D) \quad (4)$$

$$K = \text{EBIT}\,(1 - \text{t})/\text{V} = K_D(1 - t)\frac{D}{V} + K_E\frac{E}{V} \quad (5)$$

$$EVA = EBIT\,(1 - t) - KC_0 = (\rho - K)C_0 \quad (6)$$

Where ρ is the rate of return on invested capital, defined as EBIT (1-t)/C_0. ρ in our model is the same as the rate of return of unlevered equity of the firm.

The CEO's power to extract rent will be represented by symbol θ. θ will take value between zero and one; the value of zero means no rent extraction by the CEO and the value of one means the whole EVA will accrue to the CEO. θ can be termed as the CEO's bargaining power coefficient and is specified as:

$$\theta = \theta(X, l) \quad (7)$$

Where X is the vector of all other determinants of θ, and l = D/V, the financial leverage variable.

About the effect of l on θ, there are three possibilities. One possibility is that the effect of financial leverage on CEO's bargaining power coefficient, θ, is negative, that is $\partial\theta/\partial l < 0$. Jensen (1986) argues that CEOs dislike performance pressure associated with the contractually set-up interest payment. Everything else held constant, the lower (higher) is the level of debt, the lower (higher) will be the performance pressure which should be tantamount to an increase (decrease) in CEO's entrenchment. Secondly, debt involves restrictive covenants which constrain CEO's decision making power (Chava et al., 2010). Therefore, higher (lower) debt must reduce (increase) CEO's bargaining power. Thirdly, since corporate debt relative to corporate equity is predominantly held by financial institutions, they are more likely to monitor firm's performance on a regular basis and this monitoring should reduce CEO's entrenchment. Fourthly, regular rating and revisions of rating of corporate debt by rating agencies is another market-based pressure on the CEO (Kisgen, 2009). As a market-based pressure on CEO's power, changes in rating of debt are much more serious as compared to fluctuations in stock price since revisions of rating are done with a careful analysis of short-term and long-term operating and financial performance of the firm, while changes in stock price may be associated with temporary gyrations in the market place. Finally, leverage acts as an internal governance tool that disciplines managers with respect to their wasteful operating activities such as negative net present value projects, thereby lowering their entrenchment (see for example, Agha (2013), Jiraporn and Gleason (2007)).

The second possibility is that $\partial\theta/\partial l > 0$, that is an increase (decrease) in financial leverage increases (decreases) CEO's bargaining power. The argument in favour of this specification is that an increase (decrease) in financial leverage, everything else held constant, increases (decreases) the voting power of CEO's equity stake in the firm (see for example, Harris and Raviv (1988), Stulz (1988)).

The third possibility is that there is no effect of changes in financial leverage on CEO's bargaining power, that is $\partial\theta/\partial l = 0$, due to either there is in fact no material effect or the aforementioned negative and positive forces cancel each other exactly.

For CEO's rent extraction, denoted R, we postulate:

$$R = \theta . EVA \quad (8)$$

CEO's pay has many components, viz. basic salary, bonuses, payouts from long-term incentive plans, restricted stock grant, stock options, pension benefits, perks and severance pay. The rent extracted by the CEO will be embodied in one or more these components. Each component of CEO's pay may reflect both optimal contract and rent extraction and the relative size of each of these aspects may differ from component to component of the CEO pay (Frydman and Jenter, 2010). Agha (2013) shows managers' different attitudes towards financial leverage with respect to bonuses and stock incentives on the one hand and stock options on the other hand. The determination of the relative sizes of each of the various components of compensation is extremely difficult and what matters for this paper are not these relative sizes but the fact that there is rent extraction.

It is evident from equation (8) that CEO's rent extraction is zero if EVA = 0 or θ = 0 or both. For 0 < $\theta \leq 1$, for rent, R, to be positive, EVA has to be positive. Secondly, given the definition of EVA in equation (6), if debt is zero, then the cost of capital, K is equal to the required rate of return on unlevered equity which is also equal to the rate of return on operating capital, ρ, and EVA is equal to zero. Finally, given fixed ρ and the initial operating capital, C_0, EVA is maximized when the cost of capital, K, is minimized.

EVA is a function of all the operating and financial variables of the firm, as within EVA, EBIT is affected by capital expenditure and all other operating decisions while the cost of capital K is affected by the required rate of return on equity, K_E, required rate of return on debt, K_D, corporate tax rate, t and financial leverage, *l*. K_E and K_D are themselves positive functions of *l*.

3. Analysis and results

*3.1. Optimal debt-to-value ratio, l**

Differentiating the cost of capital, K, with respect to *l*, we obtain:

$$\frac{\partial K}{\partial l} = K_D(1-t) + \frac{\partial K_D}{\partial l}(1-t)l + \frac{\partial K_E}{\partial l}(1-l) - K_E \quad (9)$$

According to the trade-off theory, a finite *l* exists that minimizes K. This requires equating the right side of equation (9) to zero, which, after some rearrangements, gives:

$$(K_D(1-t) - K_E) + \left(\frac{\partial K_D}{\partial l}(1-t)l + \frac{\partial K_E}{\partial l}(1-l)\right) \quad (10)$$

The first term on the right hand side indicates a decline in K when a dollar of equity is replaced by a dollar of debt while the second term represents an increase in K as increased leverage is expected to raise K_D and K_E due to increased probability of costly bankruptcy and agency costs of debt [1]. At optimal *l*, l^*, the absolute value of the first term must be equal to the absolute value of the second term. In initial range of debt, increases in K_D and K_E are expected to be small resulting in declines in K, and beyond l^*, increasing debt will raise K_D and K_E substantially at an increasing rate outweighing the benefits of debt, thereby raising K.

3.2. Optimal CEO's rent extraction behavior and the choice of financial leverage

Differentiating rent extraction, R, from equation (8) with respect to *l*, we obtain:

$$\frac{\partial R}{\partial l} = EVA\frac{\partial \theta}{\partial l} + \theta\frac{\partial EVA}{\partial l} \quad (11)$$

At optimal point, $\frac{\partial R}{\partial l} = 0$, this implies:

$$EVA\frac{\partial \theta}{\partial l} + \theta\frac{\partial EVA}{\partial l} = 0 \quad (12)$$

(i) <u>The case where $\partial\theta/\partial l = 0$</u>

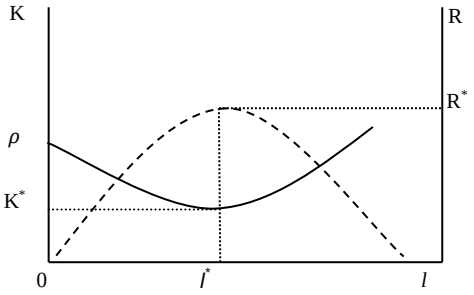
In this case, equation (12) reduces to:

$$\theta\left[0 - \left\{(K_D(1-t) - K_E) + (\frac{\partial K_D}{\partial l}(1-t)l + \frac{\partial K_E}{\partial l}(1-l))\right\}\right] = 0 \quad (13)$$

This is the same first order condition as given in equation (10) except the sign. This means that rent extraction maximizing leverage is the same as the value-maximizing leverage, l^*. This makes sense as given θ and no change in θ, the CEO's rent must be maximum when the cost of capital, K, is minimum. The result of this case is illustrated in the figure below, where the choice of leverage by the CEO is the same as the value-maximizing leverage.

In this case, the CEO will not increase *l* beyond *l** because R will decline as both terms in equation (12) will be negative. It is plausible to postulate that given the level of θ at *l**, the CEO will compare *l* with *l** and evaluate change in R. At a lower *l*, EVA will necessarily decline as the cost of capital will be higher and the CEO will choose a lower *l* only if his/her share arising from the increase in θ outweighs the adverse effect of decline in EVA on R at the initial level of θ. This situation is most likely if the initial θ will be low and the effect on θ of a decline in financial leverage will be large. Agha (2013) shows empirically using a USA non-financial firms data that in firms with strong corporate governance, managers first increase leverage with respect to total compensations and then decrease it, and choice of leverage by managers stays below the value-maximizing leverage. This result is consistent with our figure 2 as a low θ can be identified with strong corporate governance and figure 2 shows that CEO may choose corporate leverage lesser than the optimal leverage.

Figure 1. Choice of financial leverage by the CEO with no effect of changing financial leverage on CEO's bargaining power



K: cost of capital
R: CEO's rent extraction
l: financial leverage
ρ: rate of return on unlevered equity
R*: optimal CEO's rent extraction
K*: optimal cost of capital
*l**: optimal financial leverage

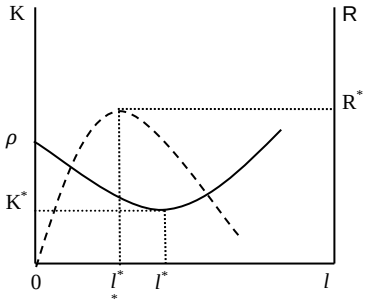
(ii) The case where $\partial\theta/\partial l < 0$

Using equation (12), this will be the case if the relative increase in the CEO's bargaining power coefficient will be larger than the negative of the relative change in the economic value added, that is:

$$EVA\frac{\partial\theta}{\partial l} > -\theta\frac{\partial EVA}{\partial l} \quad (14)$$

In this situation, the financial leverage chosen by the CEO will be lesser than its value-maximizing optimal level. Fama (1980) argues that managers may prefer less financial leverage than optimal because of their risk minimizing strategy as they have undiversified human capital tied up with the firm. Grossman and Hart (1982) argue that managers prefer not to have a higher level of debt because interest payments reduce free cash flows available to them. Titman and Wessels (1988), among others show empirically that financially sophisticated and highly profitable firms do not lever up to the optimal level. Jiraporn et al. (2012) also show empirically that when the CEO has more dominant role in decision making, the firm chooses leverage lesser than the optimal point. Agha (2013) has also shown that manager's target leverage ratio is lesser than the shareholder's value-maximizing leverage. In this paper, we postulate that CEO's selected leverage can be lesser than shareholders' value-maximizing leverage if the CEO's bargaining power can rise significantly with lower financial leverage. In Figure 2 below, this result is illustrated geometrically, where CEO chooses l^{**}, which is lesser than l^{*}, in order to maximize his/her rent.

Figure 2. Choice of financial leverage by the CEO with a negative effect of changing financial leverage on CEO's bargaining power

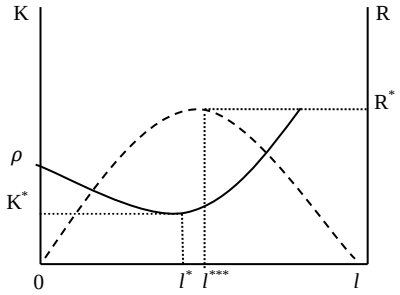


K: cost of capital
R: CEO's rent extraction
l: financial leverage
ρ: rate of return on unlevered equity
R*: optimal CEO's rent extraction
K*: optimal cost of capital
*l**: optimal financial leverage
*l***: CEO selected leverage

(iii) The case where $\partial\theta/\partial l > 0$

In this case, given the level of θ at l^{*}, the CEO will consider *l* greater than l^{*} and evaluate the resulting change in R. With $\partial\theta/\partial l > 0$, the CEO will not decrease *l* below *l** because R will necessarily decline in this situation as both terms in equation (12) will be negative. However, given $\partial\theta/\partial l > 0$, a higher *l* will lead to greater CEO's bargaining power and it is possible that increase arising from the first term of equation (12) outweighs the decline arising from the second term. If so, the CEO will select *l* greater than l^{*}. Berger et al. (1997) report that entrenched managers sometimes select excess leverage as a signal to sell assets or otherwise restructure in order to preempt takeover attempts by outsiders. Figure 3 below illustrates CEO's choice of financial leverage in this case.

Figure 3. Choice of financial leverage by the CEO with a positive effect of changing financial leverage on CEO's bargaining power



K: cost of capital
R: rent extraction
l: financial leverage
ρ: rate of return on unlevered equity
R*: optimal CEO's rent extraction
K*: optimal cost of capital
l^*: optimal financial leverage
l^{***}: CEO selected leverage

4. A numerical illustration

For numerical illustration of the results of the model, given by equations (1)-(8), we assume numerical values of the parameters and variables as follows:

$\gamma = 0.0001$, $\delta = 0.01$, EBIT = \$1,000 per period, t = 40%, $\rho = 10\%$, C_0= \$5,000, number of common shares, when D = 0, is 500, and the following assumed levels of D and K_D:

Table 1: Assumed levels of debt (D) and rate of return on firm's debt (K_D)

D	K_D
0	-
500	0.06
1000	0.06
1500	0.06
1950	0.061
2250	0.062
2500	0.063
3000	0.066
500	0.07

With these assumptions, the value of unlevered firm, V_u, the value of leveraged firm, V, the value of equity, E, the stock price per share, P, and the required rate on equity, K_E, are:

V_u = 1000 x (1 - 0.4)/0.1= \$ 6,000,

$V = 6{,}000 + 0.4\,D - (0.0001\,D^2 + 0.01D)$,

$E = V - D$,

$P = V/500$, and

$K_E = (1000 - K_D)\,(1 - 0.4)/\,E$

Finally, we assume that when financial leverage negatively affects CEO's bargaining, we have:

$\theta = 0.05 - 0.06\,l$,

And when l affects θ positively, we assume:

$\theta = 0.05 + 0.06\,l$,

With all above numerical specifications and the consequent equations, the following table provides the numerical illustrations of the results of the paper. With $\frac{\partial \theta}{\partial l} = 0$, it is obvious that R will be maximum when financial leverage is value-maximizing. In addition, it has to be noted that even with $\partial\theta/\partial l < or > 0$, CEO may still choose l^* if θ is large and $|\partial\theta/\partial l|$ is smaller.

Table 2: CEO's choice of financial leverage with different effects of changing leverage on CEO's bargaining power

D	K_D	V	l	K_E	P	K	EVA	R_1	R_2
\$0	-	\$6,000	0.0	0.1	\$12	0.1	\$0.0	\$0.0	\$0.0
500	0.06	6,170	0.081	0.1026	12.34	0.0972	13.80	0.6229	0.7571
1,000	0.06	6,290	0.159	0.1066	12.58	0.0953	23.05	0.9326	1.3724
1,500	0.06	6,360	0.2358**	0.1123	12.72	0.0943	28.35	1.0164	1.8186
1,950	0.061	6,380.25	0.306*	0.1193	12.761	0.0940	29.80	0.9429	2.0371
2,250	0.062	6371.25	0.353***	0.1253	12.743	0.0941	29.15	0.8401	2.0749
2,500	0.063	6,350	0.3937	0.1313	12.70	0.0944	27.55	0.7267	2.0283

3,000	0.066	6,270	0.4785	0.1472	12.54	0.0956	21.55	0.4588	1.6962
3,500	0.07	6,140	0.57	0.1716	12.28	0.0977	11.50	0.1817	0.9683

1. Variable definitions:

D: debt (Table 1);

K_D: rate of return on firm's debt (Table 1);

V: value of leveraged firm = 6,000 + 0.4 D – (0.0001 D^2 + 0.01D);

l: financial leverage = D/V;

K_E: required rate on equity = (1000 – K_D) (1 - 0.4)/ E;

P: stock price per share = V/500;

K: cost of capital = K_D(1 - 0.4) x *l* + K_E(1 - *l*);

EVA = (ρ - K) x 5,000;

R_1: CEO's rent extraction = θ x EVA, with $\theta = 0.05 - 0.06$ x *l*;

R_2: CEO's rent extraction = θ x EVA, with $\theta = 0.05 + 0.06$ x *l*.

2. * *l* = 0.306 is the level of leverage that maximizes V or maximizes P or minimizes K.

** *l* = 0.2358 provides the highest rent extraction by the CEO when his/her bargaining power declines with *l*.

*** *l* = 0.353 provides the highest rent extraction by the CEO when his/her bargaining power rises with *l*.

With $\frac{\partial\theta}{\partial l} = 0$, it is obvious that R will be maximum when financial leverage is value-maximizing at $l^* = 0.306$. At this optimal point, EVA of \$29.8 is the highest and CEO's rent at a given θ (which is 5%) is the highest.

With $\frac{\partial\theta}{\partial l} < 0$, next to last column in Table 2, R is maximized at a leverage $l^{**} = 0.2358$. At this leverage, although EVA is lowered to \$28.35, R is the highest at \$1.0164 as the positive effect on R of increase in CEO's bargaining coefficient, θ, outweighs the negative effect on R of decline in EVA.

Finally, with $\frac{\partial\theta}{\partial l} > 0$, the last column of Table 2, we see that CEO selects higher leverage than the optimal point, at $l^{***} = 0.353$ as his/her R is maximized despite a decline in EVA relative to its size at the value-maximizing leverage. Again, the reason is that at higher leverage, θ rises significantly.

5. Conclusion

The existing theories of corporate capital suggest a host of operating and financial variables in the determination of corporate capital structure. This paper has proposed that the effect of changes in leverage on CEO's bargaining power to extract rent can be another factor. It has been argued why the CEO power to extract rent can be negatively affected by financial leverage or positively or there may be sometimes no effect.

Following Bebchuk and Fried (2004), the paper focused on rent extraction behavior in the executive pay setting. For leverage, the trade-off theory with costly bankruptcy and the agency costs of debt was assumed. The model of the paper proposed the following three results: (i) CEO selects the value-maximizing leverage if (a) variations in financial leverage do not affect the CEO power to extract rent or (b) the initial CEO power coefficient is relatively high and the effect of changes in financial leverage on CEO power is low; (ii) with a negative effect of changes of leverage on CEO power, CEO will never raise financial leverage beyond the optimal level, although there is a likelihood of choosing financial leverage lesser than its optimal level; (iii) with a positive effect of changes in financial leverage on CEO power, CEO will never reduce financial leverage from its optimal level, although there is a likelihood that CEO chooses a financial leverage above its optimal level. The paper has also shown the three results numerically with a simulated example.

Endnotes

1. According to the Modigliani and Miller theory with corporate tax, it is well known that K_E is :

$$K_E = \rho + (\rho - K_D)(1 - t)\frac{l}{1 - l}$$

Extending this to incorporate probability of costly bankruptcy and the agency costs of debt appears to be intractable in the normal range of *l* due to possible kinks of the function at higher levels of *l*.

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THIS IS HOW WE TAKE RISK: A CASE OF A SOUTH-ASIA

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Abstract

Risk taking is fundamental to entrepreneurial activities and a central theme of the entrepreneurship literature. However, research on the risk taking propensity of entrepreneurs has met with virtually no empirical evidence on how socio-cultural factors influence on taking entrepreneurial risk in the context of South Asia where entrepreneurs consistently face challenges of high uncertainty due to socio-cultural and politico-economic complexity and instability. Purpose of this paper is to address this paradox by examining entrepreneurial risk through the lenses of socio-cultural, politico-economic and decision making.

Given the self-evident that nature of complexity, irrationality and uncertainty in this context, a sophisticated exploration of entrepreneurial social reality of risk taking and management requires the fundamental philosophy of subjectivism and therefore this study adopts qualitative inductive case study methods in a sample of Sri Lankan entrepreneurs. The study found that entrepreneurs do indeed use their social and cultural understanding to a great extent in their decision making.

Keywords: Entrepreneurial Risk, South-Asian Entrepreneurialism, Socio-Cultural Impact On Entrepreneurship, Uncertainty, Rational Risk Taking Model

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1. Introduction

Entrepreneurial risk as a fundamental element of most entrepreneurial decision making,it has been appeared from the time when the word 'entrepreneurship' originated from the French verb *entre-prende*[5] in Europe in the 1100s. Risk-taking has been persistently associated with entrepreneurship ever since 1848 when Mill proposed that the bearing of risk was what differentiated entrepreneurs from managers (Carland et al 1984) and this is still the case (Stevenson 1999; Gamage 2004). Risk taking behaviour of the entrepreneur has been observed by economists (Knight 1921; Schumpeter 1936) and psychologists (McClelland 1961). All these conventional theories, models and ideologies of entrepreneurship embrace that risk can be calculated and moderated through knowledge and the process of rational decision-making (Haley &Stumpf 1989; Miner et al 1994). Most of theoretical and practical reasons promote for generating greater knowledge about the effect of situational and personal characteristics on decision-making under risk (Blais and Weber, 2001). Even though the effects of risk, risk perceptions, and risk propensities of entrepreneurs on entrepreneurial choices have not been explicitly examined in empirical research (Forlani and Mullins, 2000). Sitkin and Pablo (1992) in their model of risk behaviour argue that the available research on risk taking have been focused on a single determinant of risk behaviour, which can yield contradictory empirical findings and produce inaccurate conclusions about determinants of risk behaviour. There is a gap in our knowledge about the link between risk taking, risk propensity, and risk perception in the context of social, cultural and political and risk (Gamage 2004), which required entrepreneur's social wisdom to manage risk in a context sensitive approach. In this paper, socio-cultural values are of particular relevance to understanding entrepreneurial risk in the South Asia as a social phenomenon. The philosophy of empowering entrepreneurs in Sri Lanka is largely based on the theories and models that have arisen, predominantly, from western paradigm and are largely based on rational scientific approaches to analysis, which are not directly appropriate to the cultural perspectives necessary for entrepreneurship in South Asian countries.

2. Critics on the Mainstream Perspectives of Entrepreneurial Risk

From the 13th century onwards permissible free competition emerged in western society (Gay 1923 cited in Aitken 1965) and this developed further with the growth of international trade. Large-scale enterprises in industrialisation involved risk bearing, capital accumulation, and psychological and organising abilities to approach and enhance unknown international markets. The pioneers of entrepreneurship, the classical economists Richard Cantillan (1734), Adam Smith (1805), J.B.Say (1834),

[5]"Entre' stand for 'between' and 'prendre' being for ' to take' or 'to undertake' (Bolton et al. 2000).

and J.S. Mill (1848) focussed on the normal flow of economic activitiesunder conditions of rational individuals with ideal information in new, unknown states of economy. According to Schumpeter (1936) the entrepreneur is in a position to carry out new economic combinations while Hirschman (1958) emphasizes their importance in mobilizing resources. This market-exchange economy required psychological and material resources to organise large-scale, mass production effectively and rationally. These terms referred to functions and qualities which were an exciting and unknown experience taken at one's own risk (Greenfield &Strickon 1981).In this institutional process entrepreneurship has been defined as a factor of production that carries risk and uncertainty in the process of organising other factors of production (Cole 1949).These conventional western ideologies havegiven emphasis to the process of rational decision-making in calculating and moderating risk factor in relation to the process of organising factors of production in market-exchange economy.

Enhancement of entrepreneurial performance has been seen historically as possible through the extensive acceptance of western ideologies. Therefore, the influence of the west on ideas and practices in non-western countries has been strong (Sinha 1999). The rational risk moderation process has been utilised in entrepreneurship development programs in the South Asia (Sinha 1999; Gamage 2004). However, the aim of economic and industrial development through application of western ideologies has not remained unchallenged in developing countries (Hofstede 1994; Kao et al. 1999; Wickramasinghe & Hopper 2000; Gamage 2004). This issue has been examined from different perspectives. These include an examination of the validity and transferability of knowledge (Leonard 1985; Sexton 1987), the utility and impact of such knowledge (Kao et al. 1999; Sinha 1999) and cultural diversity (Hofstede 1980; 1984; 1994; Nanayakkara 1999; Adler 1997; Kao et al. 1999; Ratnasiri 1999; Wickramasinghe & Hopper 2000). If culture supplies the initial social conditions under which entrepreneurial practices emerge, then the behaviors and practices that constitute current notions of entrepreneurship should be expected to fit the values of the cultures that generated and shaped the phenomenon (Mehdi and Ali 2009). From these perspectives, management and work activities in an enterprise depend critically on socio-cultural values and indigenous management practices, therefore, without considering the complexity of indigenous society and culture, which hinders attempts to understand entrepreneurial risk.

3. Exclusiveness of the Sri Lankan Socio-cultural Setting and Entrepreneurial Culture

Sri Lankan culture demonstrates various complex and unique behavioural patterns. It has had its own civilization for millennia, although from the 12th century it was subjected to several invasions. The last and the most dominant colonization was by the British who ruled from 1796 until 1948. The British influence caused significant changes to the original socio-cultural setting (De Silva 1981; Mowlana 1994; Jayawardena 2000). British colonialism was central to the economic, political, and cultural construction of modern Sri Lanka. The imposed British administrative, religious, judicial and education systems retain their influence (De Silva et al. 1973; De Silva 1981). In particular the total education and training system has been influenced in terms of objectives, design, content, and methods by the west (Ruberu 1962; Nanayakkara 1999a).

Sri Lanka received its independence in 1948, and now embraces Asian, Western and other cultural influences. After independence, Sri Lankan society blended traditional culture with European social structure (Ludowyk 1966; Jayawardena 2000). Sri Lankan entrepreneurial culture can be said to have evolved through two different routes. One can be traced to the origins of Sri Lankan civilisation and the other to the western influence, originating from the Industrial Revolution, and imposed through colonisation which systematically destroyed the indigenous feudal system. Entrepreneurship literature available in Sri Lanka both by way of imports or local production is almost exclusively western in origin and character (Nanayakkara 1999a) and has influenced academic and professional systems. Similarly, the personnel involved in bilateral and multilateral assistance programmes have also spread western ideology through training programmes. It is clear that western knowledge in Sri Lanka is influential. However, observations from India show the heart and the mind of such a system often do not work together and this conflict is apparent (Khare 1999).

4. The Research Approach and Design: Holism and Qualitative Methodology

The dynamic interaction between the social context of entrepreneurial activities (including risk) and the complexity of the South Asian culture invites an alternative approach to understand its entrepreneurial risk. The emerging research philosophy outlined above built on a set of beliefs and feelings about the world (ontology) and how it should be understood (epistemology) and studied (methodology) (Denzin& Lincoln 2000). The exploratory nature of this culture-based research embraced the fundamental philosophy of subjectivism. Hence this paper attempts to understand and document whether entrepreneurial risk

in South Asia is critically dependent on social values and indigenous business practices.

The exploratory nature of this culture-based research embraced the fundamental philosophy of subjectivism. A qualitative research methodology and inductive holistic case study approach including grounded theory analysis were selected to explore people's experiences and behaviour. This paper analyse entrepreneurial risk factor in the Asian entrepreneurs through a case study approach that focussed on ten entrepreneurs who started up home-based businesses and which have grown to become significant in Sri Lankan society. This allowed context sensitive theoretical understanding of entrepreneurial risk taking reality in Sri Lanka to emerge. Hence, this study used purposive sampling to select informative case studies.

The study sought to understand the subjective realism rather than to impose objective rationalism (Mason 1996). Therefore, the researcher did not have preconceived beliefs in exploring social realities. Interpreting and understanding the meanings of social reality through close interaction with the knower and the known (Denzin& Lincoln 2000) required active interaction between the researcher and the individual or community experiencing the phenomenon.

The inductive and holistic study of human experience required qualitative methodology to explore the inward and outward interactions of entrepreneurial experience. Using a qualitative case study approach, the problems of questionnaire-based scientific studies (cf. Perera 1990; Turner 1993; Chetty 1996; Gummesson 2000; Wickramasinghe & Hopper 2000; Gamage et al. 2003a; b) could be overcome. These problems include: a reliance upon the logic of sampling for statistical generalisation by testing hypotheses derived from predetermined theory; belief in an objective reality ascertainable through a 'falsification process'; and an erroneous belief that 'scientific' methods enable researchers to be objective and neutral recorders of events (Wickramasinghe & Hopper 2000).

In this study, timeframes of the case study subjects were between 13 and 41 years. Therefore, these entrepreneurs had up to 41 years of experience of the phenomenon (see Table 1.1). The long period of experience in business revealed how entrepreneurial activity changes over time.

Table 1.1. Age of the businesses selected in this thesis

Case study	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten
Age in years	21	21	22	41	22	31	13	22	20	25

Ten entrepreneurs were interviewed and all these businesses were based in Western Province in Sri Lanka. This study is longitudinal and first round of interviews conducted in 2002 and second round of same study conducted in 2012.

Using detailed stories of small rich informative case studies enabled the researcher to gain a relatively complete picture (Eisenhardt 1989a) of the range of entrepreneurial experiences. This study applied a grounded theory technique of constructive thematic generation to provide a language to describe the findings (Strauss & Corbin 1990). Themes emerging from the empirical data required further iterative processes to explore the foundation value sets (social meanings) underpinning particular actions. The foundation value sets discovered were interpretations of socio-cultural realities in the context, based on understanding how entrepreneurial behaviours fit in the society and culture. The literature about the historical origins of religions and politics also contributed to understanding the deep-rooted reality of behavioural patterns and actions within society. This led to insights into entrepreneurial performance in Sri Lanka.

The amount of data generated by qualitative methods was extremely large. Organizing and analysing the data could have appeared to be an impossible task (Patton 2002). The data analysis software tool, 'Nvivo, Qualitative Data Software' was used to manage data efficiently throughout the course of the research project (Silverman 2001; Patton 2002). Credibility and reliability of data were achieved through data triangulation (Denzin 1989; Yin 1994; Silverman 2001). Multiple sources of information were sought, and the interview scripts were presented back to participants for verification.

The research output was described using words and illustration rather than numbers (Penrose 1990; Miles &Huberman 1994). This style of analytical presentation of output in terms of storytelling has attracted a number of management and entrepreneurship researchers (e.g. Turner 1993; Chetty 1996; Gummesson 2000; Greenhalgh 2000; Workman 2001). The research methodology and methods went beyond those previously employed within the culture and entrepreneurship area in Sri Lanka, to capture insights of entrepreneurship in the Sri Lankan context.

5. Empirical Evidence: Uniqueness of Sri Lankan Culture and Entrepreneurial risk

In this exploratory study it has been found that with the socio-cultural environment in Sri Lanka, the

contextual reality of managing risk challenges the underlying assumptions of rational risk management processes.In cultures that are different from the west, as in Sri Lanka, conventional theories of rational risk taking process are inconsistent with the national and the local cultures. For example, Sri Lankan businesses try to preserve their paternalistic system, and emphasise socially boundedrelations, and rightness, trust, loyalty and collectivism (Nanayakkara 1999a; Gamage 2004). These are the pillars of the Sri Lankan cultural system. In this context, five main themes have emerged in entrepreneurial decision making onrisk taking. These themes involved:

5.1 Entrepreneurial risks shape from socially driven uncertainties

The data suggest that social uncertainties in Sri Lanka are critical in influencing entrepreneurial risk. Evidence is provided by thecases; all were emphasised that "we are making business decisionsin the dark environmentdue to political instability, lack of reliable information and violence of youth organisations". Periodic promises given by politicians about reducing power-cuts had disrupted entrepreneurial activity as they were not realistic promises. These situations influenced to close down their business activities andalso profitable international business lines. Some cases indicated that as a result of these circumstances, international customers have approached other country suppliers. One of the entrepreneurs expressed his disappointment:

How can we predict our business? More than three to four months continuous power limitations (at least two hours in daytime and another two or three hours evening or night) have occurred each year in the last six years. Productivity and achieving targets have been affected. Furthermore, unrealistic promises given by politicians about ending power-cuts have disrupted entrepreneurial operational activity.

Social uncertainties had been transformed into different forms of risk in entrepreneurial activity. For example, risks in decision-making on production, continuation of business activities and exporting products in time, and approval and smooth production processes resulted from social, political and economic instability, which has turned the entrepreneurial environment into a more uncertain realm. More than 20 years of continuous ethnic civil war and youth unrest due to poverty, unemployment and imbalances in income distribution have led to the uncertain socio-political milieu. Moreover, changing weather conditions in the last few years resulted in disruptions to the hydroelectric power system which was unable to cope with the increasing usage of electricity by household, commercial and industrial sectors. Most entrepreneurs get used to such uncertainty because they see no other alternative as they are uncontrollable and unpredictable and could not be seen them through the rational process of forecasting and moderating risk.

5.2 Generating risk: the social disorder matters

Most entrepreneurial challenges were derived from the disorder of the social system in Sri Lanka. The cases exemplified a lethargic social system where things just do not move efficiently, be it in banks or government departments, creating delays, time-consuming practices, and the need for political and personal favours or conversely, knocks to business activity. Time management is a top concern of entrepreneurial success as they have to use their time more efficiently. Several entrepreneurs expressed their disappointment on the time factor; higher waiting period for getting things done. Entrepreneurs' experiences in several respects:

Within the last two months three times, tax department people came to the company and asked for the same bundle of files and they took all those files and brought them back. Three times office people traced files and replaced files. Taking time of the workers directly affected to the productivity and achieving production targets.

The Bank asked us to come several times to discuss our loan. Every day they told us something and discouraged us. This was the initial experience of getting a loan to start my business.

Another entrepreneur's experience on discrimination on issuing bank loan at the setting up stage of the business:

For a Rs. 500,000 bank loan, bank requested a securities for the loan. Finally two guarantors were found but one higher officer in the bank has refused to approve the loan by saying that , who is giving a loan for this kind of man ThelBehethkarayawho produces traditional oil treatments (this has a very sarcastic meaning). Again loan was rejected.

Afterwards entrepreneur had to arguewith the Chairman of the Bank to show him the rules and regulations that indicate 'no bank facilities are available for oil treatment businessmen'. The reality is, there was no such regulation in the process of issuing loans but personal subjectivity/biases were involved in making decision on loan to grant or not.

This has created stress, uncertainty and risk not in business aspect but also health aspect of the entrepreneur. In the absence of an adequate legal framework, informal constraints play a large role in the society. In Sri Lanka, political influence especially often greatly helped in getting permission to access resources and enters local and international markets. This was evident in Cases, the entrepreneur's political relational power was used to handle threats to the existence of their businesses.In the political context of Sri Lanka, government authorities and politicians often acquire power by which they override some rules and create situations that are governed not by

rules but by the power of particular individuals. These discretionary and personalised favours generated entrepreneurial risks on the one hand or eliminated on the other. The entrepreneur, who operates in such an environment of frequent social disturbances and constraints derived from inadequate social, political and legal structures, is unable to readily manage risk through rational planning (Nanayakkara&Ranasinghe 1984; Nanayakkara 1999a; Gamage 2004). Entrepreneurial risks associated with time, favourations, biases, stress, disappointment, changing promises and letting entrepreneurs down could not be even calculated and moderated through the rational process of entrepreneur risk.

The data also suggest that dishonesty and bureaucracy of most government authorities was a formidable challenge to entrepreneurial activity. This was supported by the statement of entrepreneurs.

"...Everything needs follow up actions. If we wait until they do it, it will not happen. We have to push them to get things done by government authorities".

Because the political and public system and organisations often did not incorporate commitment, honesty and respect, the opportunity existed for opportunists to set up monitors and controls as necessary requirements from the social system.

Evidence from one of the entrepreneurs who had experience on influence of multinational companies.

"Some multinational companies wanted me eliminated from the market. ... They never allowed me to use the Sri Lankan name for my product. I thought, my product is a Sri Lankan product, why can't I use a Sri Lanka name for it. So without approval I had to stop my business for two years.

Multinational companies havedistracted indigenous entrepreneurial activities.

Another case highlighted that bribery was demanded in order to continue the order for the product.

'While I was producing the order one officer asked for a bribe and I thought, why should I give a bribe to sell my product? I refused to give a bribe. Then suddenly they stopped my production while I was continuing my production process. My business totally collapsed.'

In these cases, the entrepreneur's high social morality increased his exposure torisk within such disorder of the social context.

The following statements indicate another social disorder that is the lack of implementation of proper customer protection in the legal system and unethical behaviour of some business groups in the society..Entrepreneurs are willing to take challenges and risk related to the business activities but they believe that socially driven unethical and illegal influences are very challenging and create big risk for entrepreneurial activities.

'One competitor made the same product and used a similar type brand name. Anyway, customers complained about our products. We had to find this unhealthy competitor and we found his production system was totally outside hygiene requirements. The lack of implementation of proper customer protection in the legal system is a big risk for entrepreneurs'.

'One very popular product suddenly was rejected by the customers. The whole production was stopped and the raw materials were examined by sending them to another country. Then we realised some fraud was happening to our imported raw materials. It could not be traced at the quality control as that chemical was activated in a couple of days. So we had a big loss; however, those are some experiences and business is difficult in such an unethical environment. Otherwise business is a challenge that can be taken'.

Organisational corruption and political influences are prevalent. As a result, unethical transactions and actions are usual in day-to-day social life. Most cases provided evidence that in their entrepreneurial journey, the entrepreneur's personal and political relations, respectability and also willingness to give bribes were forceful. The legal and social security system is still need to be improved in Sri Lanka in order to avoid unnecessary risk for the entrepreneurs.

The following cases were exposed that businesses were frequently influenced by the actions of government organizations.

Six months after increasing my workers' salary, the government announced a general salary increase and asked all private companies to follow the same rule. So if we do not follow the general rule workers make problems. Fortunately, I could afford that because the Dollar exchange was positive at that time.

Socially driven risks were more harmful and more powerful than market driven risk in entrepreneurial activity.This uncertainty and risk in the Asian context has been studied by Hofstede (1980), he asserted that uncertainty is rooted in culture and reinforced through basic institutions such as family, school, and the state. Business uncertainty and risk initiation were therefore often critical, and social and cultural, and could not be separated, as business is a part of society.

6. Being Inquisitive About Others: Perceptions and Management of Risks

In Sri Lankan society and culture, people are concerned and inquisitive about others' behaviour and performance and this builds negative or positive attitudes to which they react. This includes jealousy, frustration, resentment, anger and personal politics, all of which potentially operate against the entrepreneur's wellbeing and *piliganeema* (SP). These confrontations were understood as either politically motivated (often resulting from opportunistic political forces) or due to human emotions.

The data suggest a range of perceptions on entrepreneurial risk taking behaviour within the social cultural context. Some risks were seen as personal and are kept covert; others were seen as social and

collective, and made overt, were managed collectively.

6.1 Failures as social confrontation and accepted as a personal risk

The data shows that most failures and social confrontations were kept at a personal level. The following statements provide evidence:

When my product was suddenly refused by the Department … I met a minister several times …but he was deaf to me. I went to Japan but nobody knew the reason. …when I came back I saw unsold production was stocked in the factory. What I did without telling my workers was to remove it all to my house at night. As a leader I should maintain my respect and try not to create a feeling of my incompetence among workers.

Once our product was upset due to fraud happening to our imported raw materials. We had a big loss. It is very unethical in business perspective. However, we (certain Directors) kept this incident a secret. I know they (who did the fraud) wanted to eliminate our social and business dignity.

Socially unethical challenges such as creating frauds against the entrepreneur because of anger and jealousy were often taken personally and therefore entrepreneurs tried to manage them individually. It was assumed that personal challenges are aimed at the *piliganeema* (SP) of the entrepreneur; in turn entrepreneurial dignity would be damaged by the loss of confidence of workers, buyers, suppliers, supportive organisations and society. For example, if subordinates' confidence, respect and loyalty were lost, work commitment seemed to disappear from workers.

The entrepreneurs interviewed seemed to perceive the necessity to take into account both personal and business risks (Osborne 1995) and also social and psychological risk (Gasse 1982; Ray 1986) which had been identified as typically involved in an entrepreneur's risk-taking. According to the data, in Sri Lanka, the entrepreneur felt shame (embraced social concerns and feelings) in relation to a particular fault or error. According to Bradshaw (1988)[6], with shame, there are painful feelings of alienation, self-doubt, loneliness, isolation, perfectionism, inferiority, helplessness and hopelessness. Entrepreneurs were ashamed to show their powerlessness (especially those who held some power and dignity) and they kept social confrontation covert to protect their SP with a motivation of securing workers' and other stakeholders' confidence, loyalty and commitment. This was different from guilt which is determined by objective criteria (Kaufman 1996) in an individualistic context (Bradshaw 1988).

6.2 Collectivist or what? Business challenges as shared risks

The following cases best illustrate shared risks.

Through my experience (both failure and success) I know what to do in the operation of the business and the market. I use my experience with my workforce's capabilities to face these challenges. I can give my knowledge but workers are important in carrying them out. So I shared my vision, business challenges and internal issues with my employees to face them. I always remind them if we take risk together we can easily win. Then we will be better off.

I told my workers, this is yours. If you are committed to grow this business, there are no problems for us to face business challenges and to grow. We have to work together to win business challenges.

Ethically driven business challenges such as healthy business competition were accepted collectively in Sri Lanka. Both management and the workforce were encouraged by collective obligations to face business risks. Verbally and visually, the entrepreneur always moralized collective norms by experientially creating a collective risk-taking culture and displaying posters on the strength of togetherness.

Observations revealed that, in several challenging situations, most entrepreneurs addressed their subordinates very colloquially. The expressions: *Umbala* (you), *Kollani* (boys), *Putha* (son), *Duwa* (daughter), *Daruwo* (child),*Nubala* (you) and *Lamai* (child), represent closeness, togetherness and familiarity.Thesewordsgive a different sense of relationships. *Putha*, *Duwa*, *DaruwoNubala* and *Lamai*indicate familial (parent and child) relationships, love and caring; *Kollani and Nubala*alwaysrepresent a feeling of an advisory relationship between an adult and a young person; and *Umbala and Nubala*show friendship. In general, people in Sri Lanka show strong friendliness and closeness by using specific colloquial words in conversation with friendly facial expressions.

The system had a built-in resistance to individualism. Familial emotions had been built up, developing a real sense of belonging to the entrepreneur or to the company in which caring, obligation and taking risks together operated between subordinates and superiors through paternalistic approaches[7].

We understood that there was no specific demarcation between social confrontations and business challenges. The entrepreneur in Case Six considered business fraud against his product as a social confrontation. The entrepreneur in Case Five considered the business fraud of another business producing a similar product with a similar brand name

[6] With guilt, the response is a desire for atonement, to make amends, to correct a mistake, or heal a hurt (Bradshaw 1988: Healing the shame that binds you)

[7] 'Paternalism' or 'paternalistic approach' in this study is used to signify caring and obligations which operate between subordinates and superiors.

as a business challenge. This provides evidence that entrepreneurial risk was perceived and interpreted subjectively within an individual context.

6.3 This is how we manage risk: through social power and conceptualisation skill

The data indicate that loyalty and respect from supportive authorities were derived from entrepreneurial reputation, professionalism, and trust. As a result, personal favours were highly possible. Interviewed had with third parties revealed that:

We (fruit sellers at the Nugegodapola) always give him (the entrepreneur) our fruits. We do not allow our new people to sell to others first. If we want we can sell our fruits very easily to hotels and retailers for higher prices, but we never do it. We can still remember how kind he was to us in the very early stages of our business. If we ask for personal help, he never says 'No'. Sometimes, he helps us financially. We take money from him in advance until fruits are supplied. He helps our urgent situations like funerals. He is really a gentleman. (Some fruit suppliers to the business)

We encourage customers to buy "(name of the company)" products because this Mudalali (the owner of the business) gives remarkable service to the society. He is also very concerned about us. He looks after us. He wants us to grow. We appreciate his caring for us and the country. (Some retailers in the business)

According to Case below, the entrepreneur appeared to take an unnecessary risk by not doing sufficient research or analysis before acting.

I do not know anything about theories of planning; I don't do any market research or formal systematic analysis before acting.

However, this was not the reality. The data suggest that his key skills in managing risk were based on a social capacity for value judgements. The following case evident more on this social and value judgment on entrepreneurial decision making.

I learned everything by painful experience in this society, their behaviour (good and bad), political situations, … I have a good vision towards the future of this business and alternatives though we do not have more business information. These come from my painfulexperience. Experience is not really the business techniques but about people and society. It is difficult me to explain but my social insight give me wisdom, vision and directions. These cannot be put into a written document. I cannot give my experience to anybody, even for my son. They have to earn such painful experience by their own and learn.

The entrepreneur often processed myriad bits of information available to him and conceptualised several alternatives, in depth, through his social wisdom before he acted. The only market-related factor of any importance was personal knowledge of the market. The entrepreneurs' previous experience of failures had expanded their wisdom; giving them confidence they had the skills to avoid failure in future. Social knowledge and the insights gained through painful social experience emerged from most case studies relating to risk management and future planning.

Risk management through value bases and conceptual skill were best illustrated in worker recruitment policy. For examples:

When I recruit my workers I am so concerned about their family background. That means, the poor village type, and humble.

I specially recruit the poor, disadvantaged group of people to work. There are many reasons. a) If we help them they are very grateful and they do not want to leave the company. b) We have higher officers who were promoted from the very lower level and they are also from such family background. If I take high-class people then it creates internal unbalance and problems among workers. c) High class people have several opportunities in the society and they try to leave the company more often.

Entrepreneurs preferred workers who are loyal and reliable rather than technically qualified. This basically deviates from seeking work efficiency and higher productivity in the process of human resource management. Entrepreneurs were found to have set a priority forwork harmony on the basis of social wisdom. In general, workers in Sri Lanka display strong collective behaviour in demanding rights. An issue related to one worker affects all workers' productivity through strikes or 'work to rule' until the particular worker's problem is resolved. Sometimes this issue leads to union actions and continues for months, potentially causing the total business to collapse. This requires the entrepreneur to consider the workers' social behaviours and contrasts with a problem such as technical know-how, which could be handled through on- the-job training or external training. The ability to conceptualise possible social challenges allows him to deal with risk through social value judgments.

6.4 Luck and karma in risk tolerance behaviour: religion matters

Religious faith in Sri Lanka leads to 'Luck' and 'Karma'. Casesillustratethis effect:

Buddhism believes in a systematic mental culture. To the question of how to eradicate problems, the answer given by the Buddha is 'when a wise man, established well in morality (sila) has developed his mind and understanding (panna) which has been developed by moral and intellectual investigation rather than fixed by rational and economic figures. I always work according to Buddhist concept of sila and panna in relation to business activities. This Buddhist guidance is the precaution of my business risk.

The entrepreneur understood that Buddhism teaches the way to penetrate to the root of the problem (similar to the western analytical approach) and find out the main cause of it within the social moral context (different context from western countries). Individuals were guided by their religious norms to become more skilled in managing human life and to promote more satisfactory living.

Suddenly my Sri Lankan buyer refused my product …. My friend in Japan was able to help me. He is the first man in Japan going out of the country to buy such products. So I believe we should have luck also when doing business.

While …one officer asked for bribery and…my business collapsed, that is my karma…. The garment industry has been introduced in Sri Lanka on a very large scale. And also imports of printing ink have been limited. This was my luck to come back to my business. . I believe in karma, as I am a Buddhist. Some have got every human organ without imperfection, but some people are born with several problems, that is our karma. So I have to maintain behaving in such a way as to get good karma.

It was a big threat of multinational products like Coca Cola for us. I had a very hard time selling our natural fruit drinks. Some small boutique traders chased me when I brought my product. However, our luck came. Fortunately, television media came to Sri Lanka and fresh fruits and health care programmes were broadcasted. It was a new media and people were so interested to try to follow what it showed. This made a big impact for our business. So I believe we need to have luck also.

Lack of information and unforeseen conditions led to unavoidable uncertainties. In such situations where the entrepreneur had no power over exterior influences he resorted to religious faith. The entrepreneur was persuaded with luck and *karma*. Religious faith and values rooted in religious morality were part of the social behaviours and provided satisfactory compromises between unexpected failure and success.

In Buddhist values every material thing that exists is impermanent. But the good and bad points collected in life (Karma) are carried forward to the next life. Therefore, every living being has the results of its own past *karma* to work out, and any interference with his situation will not be anything more than a temporary alleviation of the suffering it is bound to endure (Pickering 1995). The impact of uncertainties was neutralised in terms of *karma*and luck. Therefore, any impact of uncertainties had been taken as tolerable. The majority of Sri Lankan entrepreneurs (86.6%) believe in *Karma* (Buddhdasa 1995). Entrepreneurs did not see uncertainty as something to be avoided or moderated in any particular rational model but to be expected and tolerated through social and religious faith and morals. This is the key difference from western thinking on risk management.

All four main components of entrepreneurial risk management described here: risk initiation, perceptions of risk, risk management and such tolerance indicated that business uncertainty was mainly derived from social, political and cultural settings. The business stakeholders and socially and politically influential actors, government authorities, their spouses, relations and friends were all involved (formally or informally) in the risk handling process in terms of creating personal favours. This is supported by studies of business risk in the Asian context by Hofstede (1980) who asserts that strategies for coping with uncertainty are rooted in culture and reinforced through basic institutions such as family, school, and the state. This does not mean that markets are not subject to risk, but that business risks in Sri Lanka were largely socially derived, were powerful, and demand widely developed conceptual skills for effective management.

7. Irrationality of Entrepreneurial Risk Taking: Contrary to Western Entrepreneurial Paradigm

In the western models, entrepreneurial risk can be managed through knowledge of and entrepreneurial alertness to markets (Kirzner 1973; High 1986) and the process of rational decision-making. Classical economist Knight's (1921) classification of entrepreneurial risk includes perfect knowledge, risk and uncertainty. Schumpeter (1936) asserts entrepreneurial risk-taking behaviour in innovative economic activities which implies risk taking in a rather uncertain condition of novelty. Research supports the idea that firms that innovate and are proactive also tend to take larger risks (Miller 1983; Covin 1989; 1991).

The neo-Austrian school believes entrepreneurial riskinteracts with the internal situation of the business and with the economic, political and social circumstances surrounding the business (Cole 1949). The Harvard School considers the human factor in the production system as well as sensitivity to environmental characteristics that affect decision-making.

McClelland's (1953; 1961) psychological theory also discusses business uncertainty and certainty based on availability of reliable information to the entrepreneur. He argues that risk involvement is essential in undertaking a venture and such risk can be moderated through logical analysis of information. Furthermore, in his theory of n Ach, a large incongruity between an entrepreneur's aspirations and end results leads to avoidancemotives (McClelland 1953) as far as personal achievement is concerned.

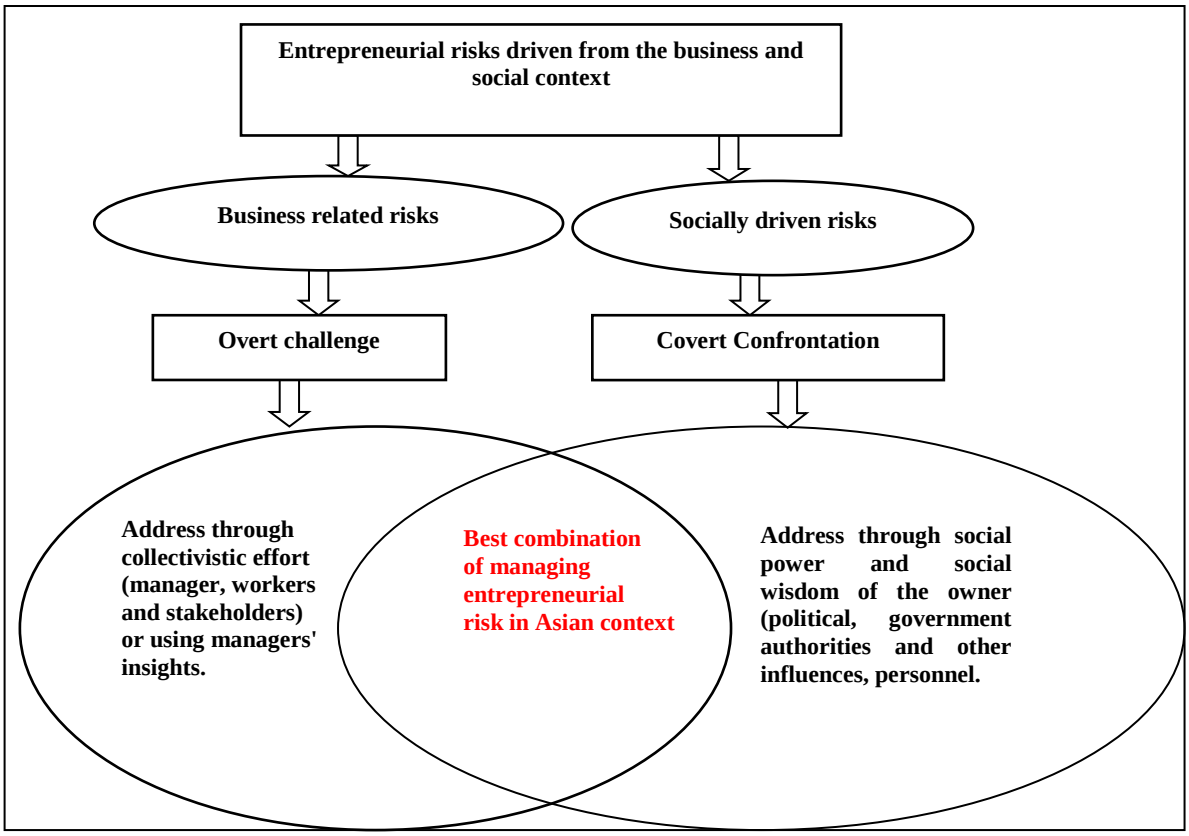
From this, if business risks are defined in terms of economic and psychological connotations, business risk is focused by (the western paradigm) only on a firm or an individual entrepreneur. However, business uncertainty and risk are often socially and culturally

interpreted and cannot be separated, as business is a part of society. The country's social conditions and cultural values provide the ingredients for critical risks for the entrepreneur and lead to a definition of entrepreneurial uncertainty as 'socially-derived doubts'. As a result, different issues emerged in entrepreneurial activity and were identified as entrepreneurial risk factors.

Risk calculated by predicting and forecasting economic effects was insignificant in the context of possible social challenges in Sri Lanka. This challenges Kirzner's (1973; 1979) and High's (1986) arguments of risk management through knowledge of markets and entrepreneurial market alertness. In Sri Lanka, entrepreneurial risk management was both defined by and managed in a social context rather than an objective cognitive context. Whether the entrepreneurs want to moderate, tolerate or avoid risk was rooted in their values and beliefs system. Conceptualisation of business risk was subjective and antithetical to the psychological theory (McClelland 1961) and to moderating risk and risk-avoidance (Miner et al. 1994) through rational approaches. The market mechanism in risk management therefore worked loosely in Sri Lanka (Gamage et al. 2003a)

Deep understanding from the findings led to a guiding model for business risktaking and management in Sri Lankan (Figure 1), which discriminates between the social and business implications of business risk. This indicates that the entrepreneur needs to build a wider risk- management circle through value base in response to entrepreneurial risk. This involves conceptualisation skills not limited only to analytical skills and approaches. Therefore, risk management requires the entrepreneurs' social wisdom to screen social risks rather than simple knowledge creation of market alertness.

Figure 1. Entrepreneurial risks and the risk management circle



Source: Develop by the researcher

8. Conclusion

Socio-cultural values and beliefs, which direct social being, influence entrepreneurial risk behaviour in Sri Lanka. Sri Lankan businesses cannot survive by merely following entrepreneurial orthodoxy within the western paradigm, which does not lead to appropriate practices because conflicts and challenges are palpable. In this research work found that in the South Asian cultural context social wisdom and value judgment is prominent and essential in understanding, tolerating and managing uncertainty and risk which are driven from socially and culturally. Sri Lanka should not imitate a western system with its own shortcomings. Sri Lanka should develop its own strengths in entrepreneurship development. It needs to

understand how cultural values and practices are reflected in the unique organisation of business. Finally this study revealed that Socio-cultural-relativism in entrepreneurship', may be more appropriate to understand entrepreneurial reality in its context.

The authors propose that the entrepreneurial risk may be explained by recognizing the fact that entrepreneurs use experience-derived knowledge including socio-cultural and politico-economic intuition and wisdom to a problem, which is likely to lead them to perceive multiple risks in a given decision situation.

These findings provide a new perspective for understanding how entrepreneurs deal with the unjustifiable amount of risk associated with the complexity of indigenous society and culture in the South Asian context, which challenges the western ideologies and practices of entrepreneurial risk. This context sensitive understanding sheds some light especially for policy makers, trainers and educational institutions to develop more integrated and context sensitive entrepreneurship development policies and training and educational programs.

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RE-EVALUATING THE EFFECTIVENESS OF AUDITING STANDARD NO. 2: LONGITUDINAL ANALYSIS OF RESTATEMENTS AND THE OUTCOME OF AUDITOR LITIGATION IN LAWSUITS FILED FROM 1996 TO 2009

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Abstract

We provide evidence of the impact of Auditing Standard No. 2 ("AS 2"), issued pursuant to the Sarbanes-Oxley Act of 2002 ("SarBox"), on the outcome of auditors in financial reporting litigation. Specifically, we focus on the existence of financial restatements and how and why they affected the outcome of the auditor in the financial reporting lawsuits. Our longitudinal method subjected to year-by-year regression analysis 2,059 financial reporting lawsuits filed from 1996 to 2009. Our results indicate that restatements are positively associated with more severe outcomes for the auditor in lawsuits filed in 2002 and in the years after 2004. However, restatements are not significant in lawsuits filed in 2003 and 2004. Pressure from SarBox Section 906 criminal penalties and Section 302 requirements to disclose material weaknesses, coupled with a lack of guidance to distinguish material weaknesses from significant deficiencies, temporarily and indirectly caused the issuance of a large number of restatements that were not material or comprehensible to participants in the legal system. Thus, they were temporarily unable to use the restatements to inform their litigation behavior. However, after the June 17, 2004, release of AS 2, participants in the legal system were again able to use the restatements to inform their behavior. This suggests that AS 2, notwithstanding its inefficiency, necessitating its subsequent superseding by Auditing Standard No. 5 ("AS 5"), increased audit effectiveness and financial reporting quality by facilitating more accurate identification of material weaknesses.

Keywords: Auditing Standard No. 2, Effectiveness, Sarbanes-Oxley Act

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1. Introduction

Restatements of previously issued audited annual financial statements are associated with the outcome of the auditor in financial reporting litigation (Fuerman 1997). Multivariate analyses—which control for factors other than the annual restatement—have consistently confirmed this in studies that analyze long, multiyear time periods. However, we do not know from these whether there have been year-to-year changes in the relationship between annual restatements and auditor litigation. Analysis of long, multiyear time periods cannot reveal such changes because the individual years' results are averaged. Thus, because auditor lawsuits have not been examined longitudinally since the Kothari et al. (1988) study of auditor lawsuits filed during the 1960 to 1985 period, this study is needed.

It would be unsurprising if a longitudinal study were to reveal changes in the relationship between annual restatements and auditor litigation, as we have recently passed through several dramatic events. In law, the Private Securities Litigation Reform Act ("PSLRA") was passed in late 1995, and the Securities Litigation Uniform Standards Act ("SLUSA") was passed in late 1998. In financial reporting and auditing, the Sarbanes-Oxley Act ("SarBox") became law on July 30, 2002, with critically important administrative implementation occurring in 2003 and 2004.

Multivariate, one-year-at-a-time results suggest that the typical, presumed pattern of restatements always being associated with the outcome of the

auditor in lawsuits was twice disrupted. The first disruption was caused by a combination of three things: 1) the delayed application of the PSLRA, via the SLUSA; 2) the decrease in the proportion of revenue recognition restatements; and 3) the increase in the number of overall annual restatements. As a result, there was a change after 1998. In the 1999–2001 lawsuit filings, annual restatements were temporarily not a significant factor, even though they were each year before 1999.

The second disruption had two causes: 1) a further increase in restatements and 2) a further decrease in their materiality compared to traditional standards of materiality. Both of these causes were motivated by the combination of Sections 302 (certification by principal executive and financial officers) and 906 (criminal penalties) of SarBox. These SarBox provisions increased the pressure upon companies and auditors to identify material weaknesses at a time when authoritative identification guidance was lacking. Restatements were therefore used to justify assertions of the identification of material weaknesses, making restatements much less meaningful. Thus, there was another change after 2002. In the 2003 and 2004 lawsuit filings, annual restatements were again not a significant factor, even though they were in the 2002 lawsuit filings. This also was a temporary phenomenon. After the 2004 release of AS 2, which clarified the identification of material weaknesses and concomitantly made restatements meaningful again, annual restatements once more became a significant factor in the outcome of the auditor in financial reporting litigation. Restatements continued in each year to be a significant factor in the outcome of the auditor in financial reporting litigation.

This paper is organized as follows. In the second section are found discussions of the prior literature on auditor litigation, restatements, and the important events during the 1996–2009 period of the study. These are developed into theory that leads to the statement of the hypotheses. In the third section, the nature of the data and data collection are described. The empirical analysis is detailed in the fourth section. In the last section, the empirical analysis is summarized and interpreted, and its implications are discussed.

2. Literature, Theory, and Hypothesis Development

To set the framework for this research, it is important to consider the following: auditor litigation and its prior research, restatements and their prior research, and the events that occurred from 1996 to 2009 that are most likely to have had an impact on the relationship between restatements of annual financial statements and auditor litigation.

2.1 Auditor litigation

Attorneys representing users of a company's financial reporting will file a lawsuit if, based on their perception of the likely facts and the applicable law, they have a reasonable likelihood of prevailing—and prevailing substantially enough that the case is economically viable for themselves and the investors that they represent (Koprowski et al. 2009). Of course, the auditors, who often have substantial resources or malpractice liability coverage or both, can enhance the economic viability of a case. However, that is not initially a primary consideration for several reasons. First, there cannot be liability with regard to the auditing without a finding of liability with regard to the financial reporting. Thus, auditing liability is preconditioned on the existence of financial reporting liability. Prior to discovery, it is often difficult to make an informed judgment even as to whether financial reporting liability exists, let alone whether auditing liability exists. Second, there are usually substantial alternative non-auditor resources available for economic recovery: the company, the management, the board of directors, the directors' and officers' insurance coverage, and the resources, in some cases, of other parties (e.g., underwriters and transaction attorneys) and their insurance coverage. Thus, auditors are named as defendants in private actions a mean of six months after commencement of the lawsuit, if at all (Fuerman 2000).

Since auditor liability risk is preconditioned on the prior or concurrent commencement of a financial reporting lawsuit, it makes sense to collect all the available financial reporting lawsuits, determine which of these name the auditor a defendant, and analyze what factors are associated with the auditor having been named a defendant. However, alternative empirical approaches exist. The motivation for some of the alternative approaches is that the differences between the financial reporting lawsuits in which the auditor is included as a defendant and the financial reporting lawsuits in which the auditor is not included as a defendant are subtle. Thus, generating sufficient statistical power to find these differences requires onerous data collection. The collection is onerous partly because the task is massive and partly because it requires a level of knowledge of institutional detail that is not always available.

The differences are unsubtle between the lawsuits with auditor defendants and the observations in which there occurred no financial reporting lawsuit at all.[8] Thus, small samples can generate sufficient

[8] For example, using a bankruptcy sample, Carcello and Palmrose (1994) used the same variables in two multiple logistic regression models. Using the approach of comparing lawsuits with an auditor defendant to bankruptcies in which no lawsuit was filed, they found that three of their variables were significant at .003 or better. Using the approach of comparing lawsuits with an auditor defendant to lawsuits without an auditor defendant, only one of their variables was significant at .05 or better.

statistical power to find superficially impressive high *p*-values, which would signify importance but for the fact that such research designs conflate financial reporting with auditing (Bell et al. 2012). These are two different constructs: Accountants account for things. Auditors perform audit procedures to provide reasonable assurance that things were accounted for in a materially correct manner. This present research avoids conflation and directly measures auditor liability by collecting all the available financial reporting lawsuits, determining which name the auditor a defendant, and analyzing what factors are associated with the outcome of the auditor in the financial reporting litigation.

The prior research that has been performed by collecting all the available financial reporting lawsuits, determining which name the auditor a defendant, and analyzing what factors are associated with the outcome of the auditor in the financial reporting litigation has repeatedly and consistently found four factors to be highly significant: bankruptcy, class period length, fraud, and restatement of annual financial statements.

Bankruptcy of the entity that is allegedly liable for legally deficient financial reporting is positively associated with the outcome of the auditor in the financial reporting litigation (Bonner et al. 1998) because bankruptcy increases the need for economic resources to make a lawsuit economically viable for the plaintiff and the plaintiff's lawyer. The auditor, along with the auditor's malpractice insurance coverage, provides economic resources.

Class period length is positively associated with the outcome of the auditor in the financial reporting litigation because it seems increasingly plausible, as a class period lengthens, that the auditor should have detected and disclosed the legally deficient financial reporting (Fuerman 1997). For example, a CPA firm that performed several consecutive annual audits, *ceteris paribus*, is expected to be more likely to have detected and disclosed the legally deficient financial reporting than a CPA firm that performed only one audit.

Fraud - or, more precisely, evidence of fraud (since we cannot know how much fraud occurs that is undetected [ACFE 2012])—is also positively associated with the outcome of the auditor in the financial reporting litigation (Carcello and Palmrose 1994). First, if there is evidence of fraud, it seems possible that auditor fraud may have occurred (even if it was not detected). Second, if there is evidence of fraud, this sometimes suggests that the auditor should have more easily detected the legally deficient financial reporting compared to legally deficient financial reporting due to errors unknown to anyone.

Thoughtful readers may question the fraud construct and its measure (the presence of a government enforcement action or prosecution), but this construct is entirely different from the others in this research. Unlike with bankruptcy, class period, or restatement, it is never certain whether fraud occurred. Indeed, until a decade ago, researchers (for example, Carcello and Palmrose 1994) used the presence of an SEC Accounting and Auditing Enforcement Release ("AAER") as the equivalent measure. Now, researchers expand the measure to include all government enforcement actions and prosecutions. Some go further and include the presence of internal corporate investigations in an even broader measure of fraud (Hennes et al. 2008). This is too broad. First, you can only determine whether there was a corporate investigation for entities that have substantial information available about them, such as the companies included in COMPUSTAT to which Hennes et al. (2008) limited themselves. The entities are broader in this paper, including nonprofits, the financial services industry, foreign registrants, and for-profit corporations that are not registered with the SEC (and hence are not in the SEC EDGAR database).[9] Second, when there is a corporate investigation, it is difficult to determine whether it is motivated by a suspicion of fraud or by a desire to scapegoat recently ousted executives in order to distance other executives or board members from responsibility for a scandal.

The above discussion has focused on the factors (in addition to restatements) associated with the outcome of the auditor in the financial reporting litigation. The discussion now shifts to the dependent variable. Francis (2011) notes that measuring auditor litigation as 1 if the auditor was a defendant and 0 if not is possibly misleading: "Engagement-level audit failures can be unambiguously identified when there is successful civil litigation against auditors or criminal prosecution (which is very rare) and assuming, of course, that court decisions are correct. The dichotomous view of audit quality has limitations. Audit quality is more likely a continuum that can range from very low quality (audit failures) to very high quality." Thus, a measure of auditor litigation consistent with the continuum theorized by Francis (2011) is used in this paper.

The literatures of business misconduct, law, and suit-versus-settlement are used to construct a five-level measure. The first two categories discussed are the observations in which the evidence most strongly suggests that an audit failure occurred (dependent variable coded 4 or 3). The latter three categories discussed are the observations in which the evidence least strongly suggests that an audit failure occurred (dependent variable coded 2, 1, or 0).

The number 4 is assigned to the dependent variable of each observation in which the auditor is a defendant in a criminal prosecution. The government only prosecutes auditors under criminal law for the

[9] The financial services industry sector and/or other industry sectors have been excluded from many empirical studies on litigation (e.g., Stice 1991; Francis et al. 1994) and restatements (e.g., Abbott et al. 2004; Hennes et al. 2008), which makes it unclear whether their findings are valid for all litigation and restatements.

most culpable, harmful, and wrongful perpetrations of misconduct (Green 2006). Only the government can choose to seek a criminal conviction, and only a criminal conviction can result in incarceration. Unlike in the civil law system, for cases in the criminal law system, the government must demonstrate that "willful intent" has occurred and must prove its assertions "beyond a reasonable doubt."

The number 3 is assigned to the dependent variable of each observation in which the auditor is named (often by the SEC pursuant to its Rule No. 102(e) in the United States, or by its foreign equivalent abroad) a defendant or respondent in a government civil lawsuit or administrative proceeding. These are instances of "white-collar crime" that government entities could possibly have prosecuted in the criminal legal system. Sutherland (1940) defined such cases of white-collar crime in sociological and criminological terms, asserting that "business classes" use social power to pay civil fines in lieu of serving criminal prison sentences (Sutherland 1945).

The number 2 is assigned to the dependent variable of each observation in which the auditor is a defendant in a private action and must pay in order to settle the case. In the United States and Canada, private actions (especially securities class actions) comprise most of the economically significant financial reporting litigation cases, possibly attributable to the economic rewards granted to attorneys who work on contingencies (Eisenberg and Miller 2004).

The number 1 is assigned to the dependent variable of each observation in which the auditor is a defendant in a private action and avoids making a payment in order to end the case against him. Shavell (1982), Cooter and Rubinfeld (1989), and Hay and Spier (1997) all suggest that the time, effort, and cost required to settle any private action justifies categorizing number 2 as a relatively higher indication and probability of an audit failure, and number 1 as a relatively weaker indication and lower probability of an audit failure.

The number 0 is assigned to the dependent variable of each observation in which, even though the client company and/or its management were named as a defendant, the auditor is not named a defendant in any private (or government) action. There is no audit failure associated with such cases, again based on Shavell (1982), Cooter and Rubinfeld (1989), and Hay and Spier (1997), as well as Carcello and Palmrose (1994).

2.2 Restatements

When an entity issues financial statements for a period or periods that were covered by previously issued statements and the numbers are now different, the accounting standards (AICPA 1971; FASB 2005) call this "retrospective application," whether the prior numbers were incorrect when issued (and the entity's accountants should have known at the time they were incorrect) or it is only now possible to know that the original numbers were incorrect. Examples during the 1990s of causes for retrospective application that would not qualify as a restatement include (though not all of these exist today, since accounting standards have changed over time) adoptions of new accounting standards, pooling of interests mergers, sales of divisions, and stock splits. Since December 1999, retrospective application that is not a restatement (as understood by the investing public and the participants in the legal system) has typically been the result of ambiguous areas of shifting GAAP as the accounting standard setters have issued new clarifications—e.g., SAB 101, the SEC's 2005 letter to the AICPA regarding leases, and guidance from the Emerging Issues Task Force. When the term "restatement" is used in this paper, then, what is meant is that, at the time the financial statements were originally issued, they were clearly contrary to GAAP, and therefore a restatement was subsequently required?

Jones and Weingram (1996) first applied multivariate analysis to restatements to analyze why some companies whose stock experiences a large drop also experience a financial reporting lawsuit. They noted that companies "correct prior accounting statements only if they contained material errors. . . . Correcting past financial reports is effectively an admission that past disclosures were inaccurate." They found a significant association of restatements with companies experiencing a financial reporting lawsuit. They also found that a company (or its management) that experienced an AAER had a significant association with experiencing financial reporting lawsuits. There was a positive correlation between restatements and AAERs. Fuerman (1997) found a significant association between restatements of annual financial statements and naming the auditor a defendant.[10]

Thus, from the beginning, it was clear that researching auditor litigation and restatements would be challenging because restatements are positively associated with both financial reporting lawsuits and naming the auditor a defendant in a lawsuit, and because AAERs (later to be part of the measure for the fraud construct) and restatements are positively correlated. This suggests a need to avoid conflation of financial reporting litigation risk and auditing litigation risk by using the research design described in this paper.

The positive correlation between fraud and restatements must be considered by academic researchers; however, fraud and restatements are different constructs, and both need to be studied as

[10] Conversely, Fuerman (1999) found a lack of a significant association between restatements of quarterly financial statements and naming the auditor a defendant.

such (Graham et al. 2008). Empirical research must be grounded in meaningful constructs, and variables must flow from the constructs. In auditing, the distinction between fraud and error is clearly defined (though a material misstatement, whether it stems from fraud or error, requires a restatement), and there are specific auditing procedures required in every audit to attempt to detect financial reporting fraud (AICPA 2010). In law, there is one specific federal statute aimed at fraudulent financial reporting (Securities Exchange Act of 1934) and a different federal statute aimed at financial reporting that is not fraudulent but is materially incorrect (Securities Act of 1933).

The research on restatements is vast, but it has evolved slowly, due in part to the difficulty of clearly observing restatements. In the early 1990s, many public companies' financial statements - and restatements - were available in COMPUSTAT, but others were not. Some that were missing from COMPUSTAT could be found in the LEXIS NEXIS database. Others could only be found in Laser D.[11] Early studies disagreed with regard to how many restatements had occurred (Moriarty and Livingston 2001; Richardson et al. 2002; GAO 2002; Huron 2003). Also, there was a lack of consensus as to which scenarios (involving companies doing a retrospective application of their accounting numbers) qualified as "restatements" in the sense understood by the investing public and legal community. Gradually, the visibility of restatements increased, along with the consensus of researchers (Palmrose and Scholz 2004; Scholz 2008). Today, restatements are more visible. They can be accessed on Audit Analytics for all U.S. companies that are registered with the SEC beginning with 2001, and for foreign companies that are registered with the SEC beginning November 4, 2002, when the SEC began requiring foreign registrants to file using the SEC EDGAR database (SEC 2002a).

During the 1990s, restatements changed (Scholz 2008). Also, the relationship between restatements and financial reporting lawsuits changed. As depicted in Figure 1, the number of restatements slowly increased in the middle of the 1990s. The increase accelerated in the late 1990s, and it further accelerated in the first half of the 2000s. After peaking in 2006, the number of restatements began decreasing. Conversely, while there were mild dips in the number of financial reporting lawsuits in 2006 and 2009, their numbers remained fairly stable over the years of the study. 1999 was the first year that there were more restatements than lawsuits. In 2006, there were almost 21 times as many restatements as lawsuits. Also, the percentage of restatements that included revenue recognition issues decreased as follows: 1997 (41%), 1998 (47%), 1999 (25%), 2000 (44%), 2001 (25%), 2002 (24%), 2003 (25%), 2004 (21%), 2005 (15%), 2006 (11%), 2007 (13%), 2008 (12%), 2009 (11%) (Scholz 2008 for 1997 through 2006; Audit Analytics 2012 for 2007 through 2009). This is important, because the restatements involving revenue recognition are the ones most strongly associated with naming the auditor a defendant in a financial reporting lawsuit (Palmrose and Scholz 2004).

2.3 Important events during the period of the study (1996–2009)

The first important event to have an impact on auditor litigation was the passage of the PSLRA on December 22, 1995. Fuerman (1998) found that the percentage of financial reporting lawsuits that included an auditor defendant increased, albeit insignificantly. This was the opposite of the decrease that was widely expected, since the PSLRA substituted, for most scenarios, proportionate liability, replacing joint/several liability. Also, changes in the legal standards for deciding pre-trial motions and changes in the discovery rules (no discovery allowed until after the court's decision on the motion to dismiss) were intended to make it more difficult for plaintiffs to prevail and recover economic damages, especially against auditors. What happened is that many plaintiffs avoided the PSLRA by filing class actions (which comprise the bulk of the financial reporting lawsuits, in economic recovery terms) in the state courts. Congress reacted by passing the SLUSA on November 3, 1998. Now the state courts were closed to all but small intrastate class actions, and the PSLRA could not be avoided.

The combined effect of the PSLRA and SLUSA made it more difficult for plaintiffs to persuade courts that the auditor was liable based solely on the occurrence of a restatement of audited annual financial statements. Auditors were especially affected by the PSLRA's more stringent pleading standards and the prohibition on discovery prior to the court deciding on the motion to dismiss. For example, courts have become more reluctant to find scienter present with auditors, compared to other defendants (e.g., *Ley. v. Visteon*, 543 F.3d 801 [6th Cir. 2008]; see *contra*, *New Mexico State Investment Council v. Ernst & Young*, 641 F.3d 1089 [9th Cir. 2011]).[12] Also, audit documentation (work papers) is critically important evidence on the question of auditor liability, and, after the PSLRA, it cannot be obtained by the plaintiff until after the court decides the motion to dismiss.

Meanwhile, as depicted in Figure 1, the number of restatements kept increasing. In 1999, the percentage of restatements that involved revenue recognition decreased by half, compared to the previous year. The passage of the PSLRA and SLUSA, a massive increase in restatements, and a

[11] Laser D (also called LaserDisclosure), a CD-ROM database product of Disclosure, Inc., of Bethesda, Maryland, included the SEC filings of very small public companies that were not available in COMPUSTAT or LEXIS NEXIS.

[12] Scienter is a legal term that refers to intent or knowledge of wrongdoing. This means that an offending party has knowledge of the "wrongness" of an act or event prior to committing it.

dramatic shift away from revenue recognition restatements together yielded a lack of significance in the association of annual restatements with the outcome of auditors in the lawsuits. There was a decrease in the ability of plaintiff lawyers to use restatements to help determine when it made sense to file financial reporting lawsuits and which of those financial reporting lawsuits should have auditor defendants.[13] Also, courts became more skeptical that an auditor was liable just because a restatement of audited annual financial statements had occurred. The foregoing discussion leads to the first hypothesis:

H_1: In the financial reporting lawsuits filed in 1999, 2000, and 2001, restatements of annual financial statements will not be a significant factor in the outcome of the auditor in the financial reporting litigation, but they will be a significant factor each year before 1999.

Annual restatements would have regained persistent significance after a few years but for SarBox, which became law on July 30, 2002. One requirement that became effective for all public companies was that, beginning with 10-Qs and 10-Ks filed after August 29, 2002, the principal executive officer and the principal financial officer had to certify that they had "identified for the registrant's auditors any material weaknesses in internal controls" (SEC 2002b). At least 261 firms disclosed material weaknesses from the date Section 302 became effective to November 2004 (Ge and McVay 2005). Many of these material weaknesses in internal control over financial reporting ("ICFR") were first reported concurrently with the initial announcement of a restatement of financial statements (Jonas et al. 2007; Audit Analytics 2007; Glass, Lewis & Co. 2008).

The reason why so many restatements were associated with the early years' disclosures of material weaknesses was that executives felt pressure to disclose material weaknesses even if there was doubt as to whether the material weaknesses existed. The pressure to disclose material weaknesses came from the SarBox Section 906 criminal penalties for noncompliance with Section 302. The doubt came from the fact that there was a very high level of uncertainty among companies and their auditors as to when a particular internal control problem should be regarded as a material weakness. One thing that was certain is that, logically, if a company restated its financials, there must have been at least one material weakness that caused the restatement. Thus, Sections 302 and 906 of SarBox contributed to the increase in restatements, including restatements that were no longer meaningful in terms of what materiality traditionally meant (Logue 2005). Audit Analytics (2005) reported that 80% of companies that reported a material weakness previously had either a material year-end adjustment (of the pre-audit financial statements) by their auditor or announced a restatement of their financial statements.

In 2002, the authoritative source of guidance on the definition of a material weakness was SAS No. 60 (AICPA 1988). However, the guidance provided in SAS No. 60 was for the purpose of pre-SarBox auditors communicating to the audit committee material weaknesses and significant deficiencies (in the aggregate called "reportable conditions") that "the auditor may become aware of." This was very different from the new tasks mandated by SarBox. SarBox required the management and the auditor of public companies, *inter alia*, to affirmatively search for material weaknesses and to communicate them to the investing public in SEC filings. Paragraph 15 of SAS No. 60 included a brief definition of material weakness. No examples were provided in SAS No. 60 to distinguish a material weakness from a significant deficiency.

Companies and their auditors struggled for years to develop proficiency in identifying material weaknesses and to wean themselves from the habit of jointly identifying material weaknesses and deciding that a restatement was needed. Regulators tried to help them, but they also struggled. In 2003, the SEC issued guidance to management on how to do their management report on ICFR. With regard to the problems of insufficient definition and absence of examples of material weaknesses, the SEC passed the buck: "For purposes of the final rules, the term 'material weakness' has the same meaning as in the definition under GAAS and attestation standards," it stated (SEC 2003), referring to SAS No. 60.

On June 17, 2004, pursuant to SEC Release No. 34-49884, AS 2 (PCAOB 2004) became effective for U.S. accelerated filers for fiscal years ending on or after November 15, 2007. Glover et al. (2009) criticized the PCAOB and AS 2, asserting the following:

The meanings of critically important but ambiguous new terms such as "deficiency", "significant deficiency", "material weakness", "auditor's direct evidence", "making up a significant portion of the evidence", "using the work of others", "evaluation of deficiencies", and the particularly vague "more than inconsequential", were unclear. The profession repeatedly sought to obtain clarity from the PCAOB while at the same time attempting to learn, train, incorporate, and implement the standard. In many instances, practitioners' questions clearly pointed to important practice and conceptual matters that the PCAOB staff had not adequately considered in the formulation of the standard.

[13] Although some restatements occur after the commencement of a financial reporting lawsuit, others occur prior to the lawsuit or at least prior to naming the auditor a defendant. Thus, they are sometimes a heuristic, or rule of thumb, helping plaintiff attorneys make decisions under uncertainty. What happened after 1998, and then again after 2002, is that restatements of annual financial statements became a less useful heuristic.

The fact that AS 2 was superseded three years later by Auditing Standard No. 5 (PCAOB 2007) indicates that it was an imperfect standard. Nonetheless, Glover et al. (2009) do not address the historical context. Prior to the assumption of audit standard setting by the PCAOB, the Auditing Standards Board had not developed meaningful guidance on how to identify the existence of a material weakness. This task was left to the PCAOB. AS 2 was a giant leap forward for companies and auditors. For the first time, it was clarified that each of the following eight scenarios is "a strong indicator that a material weakness in internal control over financial reporting exists" (PCAOB 2004, par. 140):

- A restatement (due to error or fraud) of previously issued financial statements;
- A material misstatement in the pre-audit financial statements requiring an adjustment by the auditor;
- Ineffective oversight of financial reporting and internal control by the audit committee;
- Ineffective internal audit or risk assessment function at a company that needs such a function to be effective;
- Ineffective regulatory compliance function at a company that needs such a function to be effective;
- Fraud of any magnitude on the part of senior management;
- Significant deficiencies that, despite having been communicated to the management and audit committee, remain uncorrected after a reasonable period of time;
- Ineffective control environment.

In addition, Appendix D of AS 2 provided an additional seven detailed scenarios of hypothetical internal control problems at a company, along with advice as to which of them should be classified as significant deficiencies and which of them should be classified instead as material weaknesses.

Thus, after 2004, the uncertainty as to how to decide whether a particular internal control problem was a material weakness subsided substantially. One of the consequences of this reduction in uncertainty was the concomitant increase in the proportion of restatements that were truly meaningful in terms of what materiality traditionally meant. This allowed restatements of annual financial statements to resume their traditional relevance as an important factor in the outcome of auditor litigation. The foregoing discussion leads to the second hypothesis:

H_2: In the financial reporting lawsuits filed in 2003 and 2004, restatements of annual financial statements will not be a significant factor in the naming of the auditor as a defendant or in the outcome of the auditor in the financial reporting litigation, but they will be a significant factor in 2002, and they will again be a significant factor each year after 2004.

3. The Data

The sample (see Table 1) is comprised of 2,059 financial reporting lawsuits commenced from 1996 through 2009. Most of the lawsuits were found in Securities Class Action Services ("SCAS"), an MSCI, Inc., online database, or its predecessor, the newsletter *Securities Class Action Alert*.

To obtain the sample, 2,490 lawsuits were found in SCAS or its predecessor. The 443 lawsuits that concerned auditors other than the Big X firms were eliminated, leaving 2,047 lawsuits. Those 443 lawsuits were potential confounders of the analysis; because the characteristics of companies audited by smaller CPA firms are different from the characteristics of companies audited by the Big X firms (Lawrence, et al. 2011). An additional 12 lawsuits (that were not private actions) with auditor defendants were obtained from AAERs and other government prosecutions, bringing the total sample to 2,059 financial reporting lawsuits.

The financial reporting data - total assets and restatements - were obtained primarily from LEXIS NEXIS and Laser D, for the years before 2001. For the years beginning with 2001, these data were mostly obtained from Audit Analytics, except for a few entities not in the SEC EDGAR database. These included foreign registrants (SEDAR was used for Canadian companies and LEXIS NEXIS and company websites for other foreign companies) before November 4, 2002, and nonpublic entities.

The bankruptcy and AAER data were obtained from LEXIS NEXIS and from the website for AAERs maintained by the SEC. The class period length was obtained from the settlement notice, stipulation of settlement, or last operative complaint (since many lawsuits do not settle), retrieved from SCAS, the Stanford Securities Class Action Clearinghouse, or Public Access to Court Electronic Records.

4. The Empirical Analysis

The empirical analysis is based on a multivariate model, applied to the financial reporting lawsuits on a year-by-year basis. In other words, year 1996 lawsuit filings were analyzed, followed by year 1997 lawsuit filings, until completion of the analysis of the fourteenth year of the study, which is 2009. This year-by-year analysis reveals the trend in the relationship between restatements of annual financial statements and auditor litigation over the years of the study.

The model is a polytomous regression model, which is sometimes called a cumulative logit or proportional odds model. It has five ordinal categories in its dependent variable, from the least severe experience of the auditor in the financial reporting lawsuit (not even named a defendant) to the most severe experience (criminally prosecuted). This is

discussed above and detailed in Table 2.[14] The five independent variables, also discussed above and detailed in Table 2, are the natural log of the total assets of the company, bankruptcy of the company, class period length, financial reporting fraud, and restatement of the annual financial statements (with a period of restatement overlapping the class period). Also, as discussed above, the only kinds of restatement considered were those where the originally issued financial statements were contrary to GAAP at their time of issuance and the company should have known at that time that they were not in conformance with GAAP.

Restatement of audited annual financial statements is the test variable, and the other variables exert control over potentially confounding factors. All but one of the control variables have consistently been shown in prior research to be significant, as discussed above. The natural log of total assets is used in all auditor litigation research to help control for the differences in size among companies, even though it has not consistently been found to be a significant variable in prior research.

In Table 3, the frequency distribution of observed OUTCOME of auditors in the lawsuits is shown. There is, overall, a perfectly monotonic decrease as one proceeds from OUTCOME=0 (auditor not named a defendant in the lawsuit) to OUTCOME=4 (auditor criminally prosecuted). However, in some years there is not a perfectly monotonic decrease. For example, in several years there were more observations of OUTCOME=2 (auditor paid to settle private litigation) than OUTCOME=1 (auditor was named a defendant in private litigation but avoided making a payment). Also, in 2001 there were just as many observations of OUTCOME=4 (auditor criminally prosecuted) as OUTCOME=3 (auditor civilly prosecuted by the government).

Table 4 shows the descriptive statistics, one year at a time, for each of the five independent variables. Their univariate association with the ordinal five-category dependent variable for the polytomous regression, OUTCOME, is also shown.

Moving to the right, in the third through sixth columns of Table 4, the variable ASSETS, in billions of U.S. dollars, is described. For the regressions, the natural log of total assets was used. Total assets were used to calculate the mean and median for each year. Mean ASSETS were fairly level from 1996 through 2001, increased to a fluctuating higher level from 2002 through 2006, and then dramatically increased for the last three years of the study (see also Figure 2). This is due in part to lawsuits against very large companies in the financial services industry sector, which are included in this study. Such lawsuits filed in 2008 and 2009 included Royal Bank of Scotland, Deutsche Bank, JP Morgan Acceptance, Societe Generale, Credit Suisse, Fortis, Goldman Sachs, American International Group, Morgan Stanley, Fannie Mae, Merrill Lynch, Freddie Mac, Wachovia, Lehman Brothers, Bear Stearns, Bank of America, ING Groep, Wells Fargo, and Barclays Bank. In simple polytomous regression, ASSETS is not a significant factor in the OUTCOME of the auditor in the financial reporting lawsuits most years. However, ASSETS is significant at 5% (the assumed level of significance throughout this paper) in 2001, 2002, 2007, and 2009.

In the seventh through tenth columns of Table 4, BANKRUPT is described. Bankruptcies ranged from a low of 1 in 2006 to a high of 32 in 2002. The percentage of lawsuits in which company bankruptcy was present ranged from 1% in 2006 to a high of 19% in 2001 (see also Figure 3). BANKRUPT, in simple polytomous regression, is a significant factor in the OUTCOME of the auditor in the financial reporting lawsuits in 9 out of 14 years. This is perhaps surprising, given the consistent finding of statistical significance for BANKRUPT in prior studies. However, this is the first time a year-by-year longitudinal study has been conducted, with less available statistical power, particularly in years 2006 (87 observations) and 2009 (85 observations). No statistical analysis of BANKRUPT was performed for 2006, as there was only one observation in which BANKRUPT was present.

In the eleventh through fourteenth columns of Table 4, CLASS (length of class period in months) is described (see also Figure 2). CLASS was in the low teens from 1996 through 2001, followed by an increase generally to the high teens or twenties from 2002 to 2009. In simple polytomous regression, CLASS is significant every year except 2009.

In the fifteenth through eighteenth columns of Table 4, FRAUD is described. FRAUD ranged from a low of 7 occurrences in 2009 to a high of 59 occurrences in 2002. The percentage of lawsuits in which FRAUD was present ranged from a low of 8% in 2009 to a high of 31% in 2002 (see also Figure 3). FRAUD is a significant factor in simple polytomous regression every year.

In the four farthest-right columns of Table 4, the test variable RESTATE is described. Restatements of audited annual financial statements ranged from a low of 12 occurrences in 1996 to a high of 87 occurrences in 2002. As shown in Figure 1, the total number of restatements (most of which are unrelated to a lawsuit) monotonically increased after 2000 until it peaked in 2006 at 1,790 restatements. Thereafter, the number monotonically decreased. The percentage of lawsuits in which RESTATE was present ranged from a low of 11% in 1996 to a high of 47% in 2006 (see also Figure 3). In simple polytomous regression, RESTATE is significant every year except 2003.

Multicollinearity is something to consider before reviewing the results of the multivariate models, as excessive multicollinearity has the effect of creating

[14] Allison (1999) explains the theory and practice of polytomous regression.

large standard errors, which cause the probability values on certain variables to be higher than they otherwise would be. One way to gauge multicollinearity is with Pearson correlations, which are shown in Table 5. The highest Pearson correlation is .6, between FRAUD and RESTATE, in 1997.

In Table 6, the other two multicollinearity diagnostics are shown. One of these is the condition index, which indicates serious multicollinearity when it exceeds 30. Its highest level is in 1997, at 2.4. Although there is no strict variance inflation factor cutoff, Allison (1999) begins "to get concerned" when it exceeds 2.5. The highest variance inflation factor is 1.81, in 1997, on RESTATE. Thus, multicollinearity is probably not a serious concern.

The results of the hypothesis testing, using multivariate polytomous regression are shown in Table 6 (see also Figure 4). ASSETS are significant only in years 2007, 2008, and 2009. BANKRUPT is significant in every year except 1996, 1997, 2001, 2008, and 2009. No computation was performed for 2006, since only one bankruptcy was observed among that year's lawsuit filings. CLASS is significant in every year except 1998, 2006, 2008, and 2009. FRAUD is significant in every year except 2006, 2007, 2008, and 2009.

The test variable RESTATE is significant in hypothesis testing in years 1996, 1997, and 1998. It is not significant in years 1999, 2000, and 2001. Thus, the evidence supports the first hypothesis. RESTATE is significant in 2002. RESTATE is not significant in 2003 and 2004. RESTATE is significant each year after 2004. Thus, the evidence also supports the second hypothesis.

5. Discussion, Conclusions, And Implications

Restatements of audited annual financial statements were a significant factor in the outcome of auditor litigation in the years before 1999, but not in 1999, 2000, and 2001. These results, supporting the first hypothesis, are theorized to be due to the combination of three things: the PSLRA (via the SLUSA) finally impacting financial reporting litigation, the sudden large decrease compared to the previous years in the proportion of restatements that involved revenue recognition, and the large increase compared to the prior years in the number of restatements.

Restatements of audited annual financial statements were again a significant factor in the outcome for the auditor in the financial reporting lawsuits filed in 2002. They were not a significant factor in the outcome for the auditor in the lawsuits filed in 2003 and 2004. After 2004, and continuing to the present, restatements of audited annual financial statements returned to relevance. They became and have continued to be a significant factor in the outcome of the auditor litigation.

These results, supporting the second hypothesis, are theorized to be due to a further increase in restatements and a further decrease in their materiality compared to traditional standards of materiality, motivated by the combination of Sections 302 (certification by principal executive and financial officers) and 906 (criminal penalties) of SarBox and the concomitant substantial partial reliance upon restatements to justify assertions of the existence of material weaknesses. This caused participants in the legal system to lose the ability to interpret the meaning of a restatement of annual financial statements.

However, this was a temporary phenomenon. Auditors and companies faced great pressure to disclose material weaknesses but were highly uncertain about how to identify whether a particular internal control problem should be classified as a material weakness. Until the issuance of AS 2 in June of 2004, there was insufficient authoritative guidance available on how to distinguish a material weakness from a significant deficiency. After guidance became available, auditors and companies became more confident that they could do this correctly. They stopped the practice of jointly deciding the existence of both a material weakness and a need for a restatement.

This reduced the issuance of restatements that were not material in the sense that participants in the legal system had understood them to be. This caused the restatements that were issued to be relied on more strongly by participants in the legal system to perform their traditional role in financial reporting litigation, which has been, first, to help signal to plaintiff lawyers the probability of the potential lawsuit being viable (in other words, whether a court would find liability) and, second, in a particular lawsuit, to help signal the probability of the auditor being a viable defendant (again, whether a court would find liability). In the lawsuits in which the auditor was actually named a defendant, the restatements helped judges make their decisions and helped counsel for plaintiffs and auditors decide their negotiation strategies.

An implication of the results of this research is that criticisms of the PCAOB and AS 2, while not unfounded with regard to audit efficiency, should be reconsidered with regard to audit effectiveness. This research provides evidence, from the behavior of participants in the legal system, that the difficult task of clarifying the identification of material weaknesses, in the face of a lack of apposite extant auditing standards, was performed competently enough to increase audit effectiveness and financial reporting quality, causing restatements to become meaningful again in the context of auditor outcomes in financial reporting litigation.

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Table 1. Sample selection

Financial reporting lawsuits in SCAS filed 1996–2009	2490
Less: Entities whose auditor was not Big 6, 5, or 4	–443
Big X lawsuits from SCAS filed 1996–2009	2047
Plus: Government prosecutions of Big X auditors	12
Sample size for polytomous (proportional odds model) regression, 1996–2009	2059

Table 2. Variable Definitions

Dependent variable for the polytomous (proportional odds model) regression:
OUTCOME: The auditor experienced less severe litigation outcomes in the lower categories, more severe litigation outcomes in the higher categories.
0: The auditor was not a defendant in litigation.
1: The auditor was a defendant in a private action but paid nothing.
2: The auditor paid to settle a private action.
3: The auditor was a defendant in a government civil lawsuit or proceeding.
4: The auditor was criminally prosecuted.
Independent variables for the polytomous (proportional odds model) regression:
ASSETS: Total assets in billions of U.S. dollars. Natural log is used for regression analysis.
BANKRUPT is equal to "0" when the audited entity did not file for bankruptcy within a year before or after lawsuit commencement and is equal to "1" when the audited entity filed for bankruptcy within a year before or after lawsuit commencement.
CLASS: Number of months that allegedly illegal financial reporting occurred.
FRAUD is a dummy variable that is equal to "0" when the entity or its management did not experience AAER or financial reporting criminal prosecution and is equal to "1" when the entity or its management experienced AAER or financial reporting criminal prosecution.
RESTATE is an indicator variable that is equal to "0" when there is no restatement of audited annual financial statements, and it becomes "1" when there is restatement of audited annual financial statements.

Table 3. Distribution of OUTCOME of Auditors in Lawsuits Filed 1996–2009

Lawsuit Filed	Outcome 0	Outcome 1	Outcome 2	Outcome 3	Outcome 4	Total
1996	89	12	4	0	0	105
1997	114	6	17	2	0	139
1998	163	18	19	5	0	205
1999	135	7	18	8	0	168
2000	139	19	18	5	0	181
2001	116	15	9	3	3	146
2002	121	33	20	13	1	188
2003	124	23	10	4	1	162
2004	143	23	8	2	1	177
2005	121	8	10	2	1	142
2006	65	13	7	2	0	87
2007	109	7	7	2	0	125
2008	122	20	5	2	0	149
2009	68	15	1	0	1	85
Total	1629	219	153	50	8	2059

Table 4. Descriptive Statistics and Univariate Results (Association with OUTCOME)

		ASSET				BANKRUPT				CLASS				FRAUD				RESTATE			
Year	**n**	**Mean**	**Med.**	**Coef.**	***p***	**Freq.**	**Perc.**	**Coef.**	***p***	**Mean**	**Med.**	**Coef.**	***p***	**Freq.**	**Perc.**	**Coef.**	***p***	**Freq.**	**Perc.**	**Coef.**	***p***
1996	105	.396	.165	–.12	.473	10	9.5%	.87	.251	11	9	.07	.001	12	11.4%	3.57	.000	12	11.5%	5.47	.000
1997	139	3.116	.187	–.06	.556	11	7.9%	1.13	.084	12	11	.14	.000	17	12.2%	3.41	.000	21	15.1%	2.22	.001
1998	205	2.521	.164	.09	.325	23	11.2%	2.01	.000	13	11	.09	.000	28	13.7%	2.41	.000	34	16.6%	2.17	.000
1999	168	5.632	.309	.08	.377	14	8.3%	1.95	.000	14	10	.10	.000	22	13.1%	2.79	.000	30	17.9%	1.25	.004
2000	181	6.819	.275	–.01	.926	28	15.5%	1.61	.000	14	11	.09	.000	37	20.4%	1.58	.000	36	19.9%	1.51	.000
2001	146	4.19	.457	.26	.010	28	19.2%	.98	.031	13	10	.10	.000	33	22.6%	2.55	.000	45	30.8%	1.75	.000
2002	188	23.583	1.906	.14	.027	32	17%	.38	.322	22	18	.04	.000	59	31.4%	2.34	.000	87	46.3%	1.31	.000
2003	162	11.918	.656	–.01	.903	24	14.8%	1.45	.001	24	20	.04	.000	30	18.5%	1.69	.000	52	32.1%	.31	.432
2004	177	20.598	.624	.14	.072	11	6.2%	2.55	.000	22	15	.05	.000	31	17.5%	2.34	.000	74	41.8%	1.12	.005
2005	142	8.171	.674	.15	.174	9	6.3%	2.07	.002	18	12	.06	.000	21	14.8%	3.42	.000	44	31%	2.3	.000
2006	87	22.654	1.042	.01	.919	1	1.1%	N/A	N/A	30	27	.04	.004	18	20.7%	1.48	.001	41	47.1%	1.96	.001
2007	125	59.053	1.523	.33	.001	7	5.6%	1.95	.013	17	12	.06	.000	17	13.6%	2.16	.000	23	18.4%	1.95	.001
2008	149	183.32	3.832	.11	.12	17	11.4%	1.51	.005	19	14	.03	.000	19	12.8%	2.09	.000	18	12.1%	1.61	.002
2009	85	147.91	4.557	.28	.008	11	12.9%	.04	.960	18	12	.02	.153	7	8.2%	2.02	.011	14	16.5%	1.58	.011

Note: Definition of the variables is provided in Table 2.

Table 5. Pearson's Correlations Among the Independent Variables

Year	**n**	**Asset/ Bankrupt**	**Asset/ Class**	**Asset /Fraud**	**Asset / Restate**	**Bankrupt /Class**	**Bankrupt /Fraud**	**Bankrupt /Restate**	**Class/ Fraud**	**Class/ Restate**	**Fraud/ Restate**
1996	105	.0169	–.0693	–.0526	.0087	.2929*	.0874	.0874	.3302*	.2084*	.5296*
1997	139	–.1710*	.1113	–.0454	–.0547	.1381	.1346	.0252	.3274*	.3642*	.6396*
1998	205	.0438	.1757*	.0277	–.0558	.2341*	.0836	–.0754	.3006*	.3489*	.5865*
1999	168	–.0189	.0665	.0123	–.0027	.2966*	.2022*	–.0843	.3704*	.1923*	.1876*
2000	181	.0631	.1265	–.0055	.0680	.1908*	.0484	–.0601	.3106*	.4355*	.4682*
2001	146	.1320	.1985*	.1439	.0899	.1979*	–.0137	–.0237	.4450*	.3906*	.5614*
2002	188	–.0268	.2083*	.1643*	.0433	–.0515	–.0318	–.2500*	.2432*	.2108*	.3609*
2003	162	–.1198	.1614*	–.0274	.0636	.0316	.2485*	–.2495*	.2026*	.1977*	.1828*
2004	177	–.0311	.2770*	.1917*	.0461	.0220	.0661	–.0759	.4371*	.1949*	.3628*
2005	142	.0627	.1904*	.2372*	.0706	.2082*	.2173*	–.0493	.4242*	.3384*	.4072*
2006	87	N/A	–.0858	–.0396	.1887	N/A	N/A	N/A	.3696*	.4844*	.3136*
2007	125	.1575	.2840*	.1228	.0984	.0522	.1064	–.0259	.3595*	.4367*	.4139*
2008	149	–.0407	–.0023	.0216	–.2433*	.2766*	.4324*	–.133	.4142*	.2278*	.1053
2009	85	–.0054	–.1054	–.1168	–.2566*	.0658	.1395	–.0767	.1887	.3488*	.4439*

*Note: * indicates statistical significance at 5% level.*

Table 6. Multivariate Results: Polytomous (Proportional Odds Model) Regression Analysis

Year	N	Cons. 1 Coeff.	Cons. 2 Coeff.	Cons. 3 Coeff.	Cons. 4 Coeff.	ASSETS Coeff.	BANKRUPT Coeff.	CLASS Coeff.	FRAUD Coeff.	RESTATE Coeff.	Highest VIF	Largest Cond. Ind.	Max. Rescaled R-Square (%)
1996	105	–.95	–5.75	.00	.00	–.29	–.154	.08**	1.98**	5.74***	FRAUD(1.5)	2.02	71
1997	139	–2.35	–3.02	–7.32***	.00	–.18	.51	.14***	2.30***	1.73**	RESTATE(1.81)	2.37	56
1998	205	–4.32***	–5.27***	–7.51***	.00	.11	2.36***	.04*	1.25**	1.81***	RESTATE(1.71)	2.26	38
1999	168	–3.70***	–4.14***	–6.18***	.00	.04	1.41**	.07***	1.90***	.78	CLASS(1.28)	1.68	40
2000	181	–1.59	–2.60**	–4.64***	.00	–.12	1.64***	.07***	1.00**	.55	RESTATE(1.5)	2.01	33
2001	146	–5.09***	–6.46***	–8.08***	–8.94***	.14	.85	.07***	1.92***	.17	FRAUD (1.62)	2.16	41
2002	188	–3.52***	–4.80***	–6.07***	–8.95***	.06	1.17***	.03***	1.95***	.99***	RESTATE(1.25)	1.74	36
2003	162	–2.31	–3.71***	–5.12***	–6.81***	.05	1.28**	.04***	1.19***	.29	RESTATE(1.18)	1.62	25
2004	177	–3.83***	–5.68***	–7.38***	–8.67***	.02	3.31***	.04***	1.47***	.81	RESTATE(1.17)	1.88	38
2005	142	–2.86	–3.77**	–5.86***	–7.18***	–.10	1.90**	.03**	2.17***	1.64**	FRAUD(1.45)	1.98	46
2006	87	–2.14	–3.40	–5.04**	.00	–.04	N/A	.02	.66	1.48**	CLASS(1.45)	2	23
2007	125	–8.47***	–9.42***	–11.38***	.00	.28**	1.94**	.05**	1.28*	1.45**	CLASS(1.39)	1.93	41
2008	149	–6.65***	–8.50***	–9.85***	.00	.24***	1.35*	.01	1.08*	2.55***	FRAUD(1.41)	1.93	31
2009	85	–6.65***	–8.50***	–9.85***	.00	.24***	1.35	.01	1.08*	2.55***	RESTATE(1.48)	1.98	41

*Note: ***, **, and * indicate 1%, 5%, and 10% significance levels, respectively.*

Figure 1. Restatements and lawsuits (left scale) each year, 1996–2009

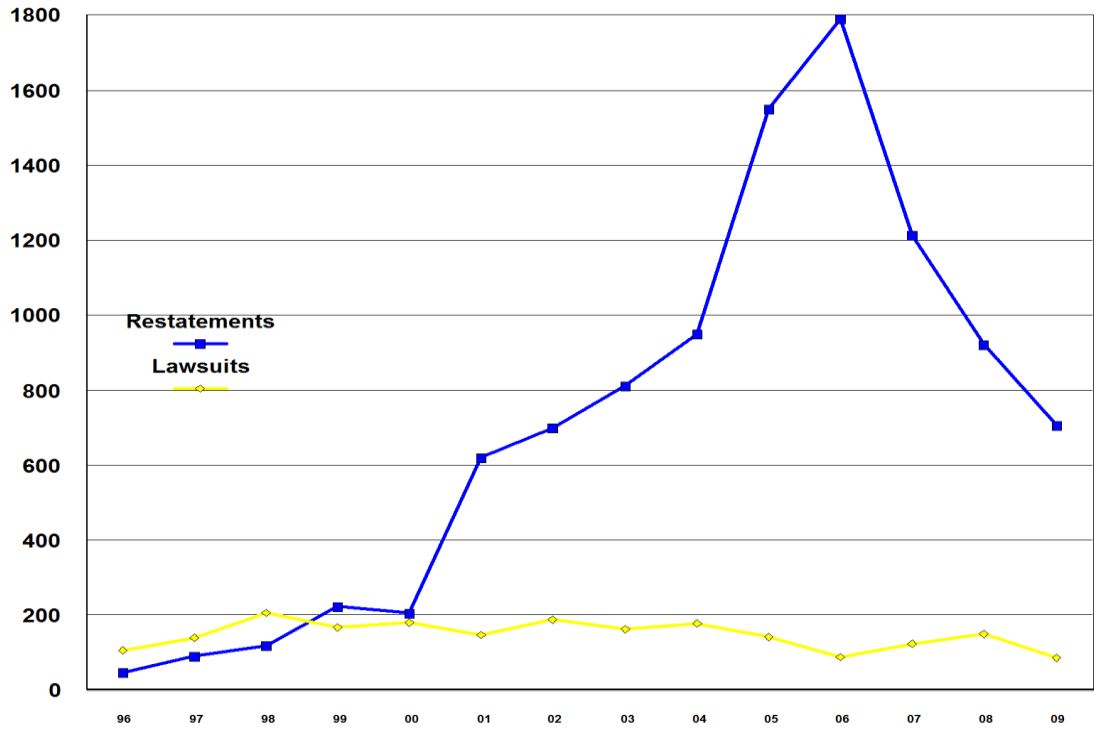

Figure 2. Mean and median total assets in billion dollars and class periods in months (left scale) each year, 1996–2009

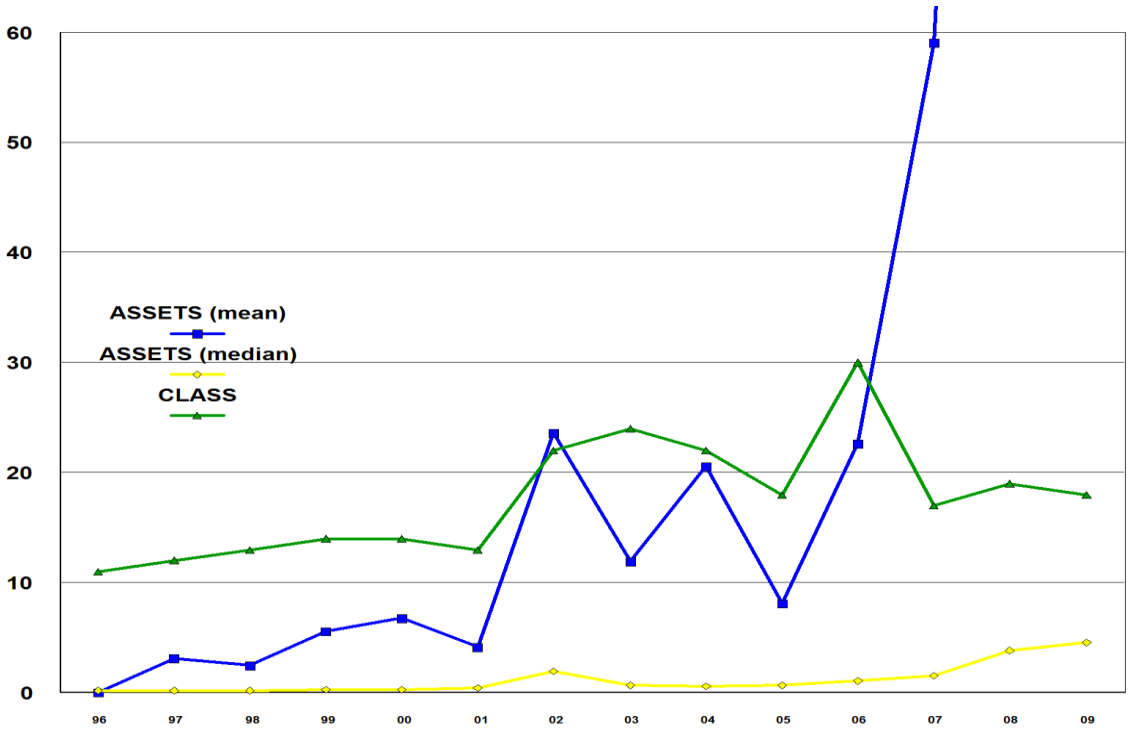

Figure 3. Percent of observations with restatements, bankruptcy, and fraud (left scale) each year, 1996–2009

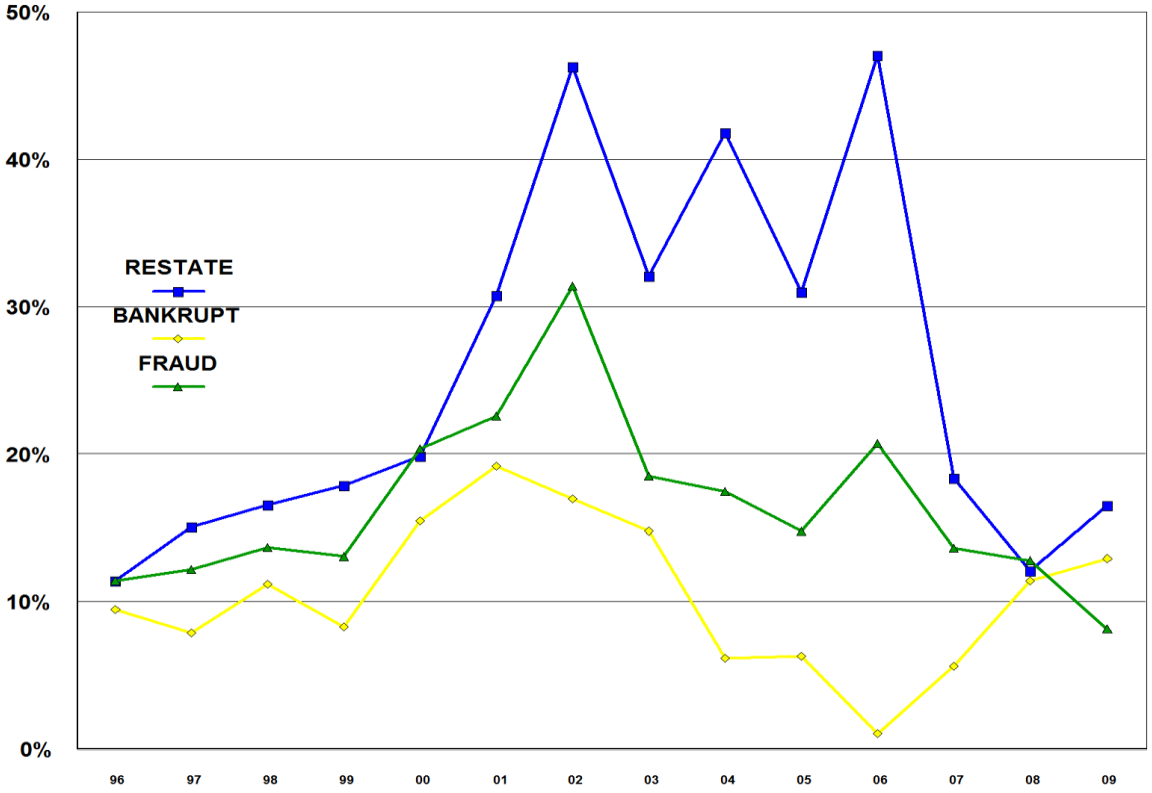

Figure 4. Multivariate probability values for variables RESTATE, ASSETS, CLASS, BANKRUPT, and FRAUD (left scale) each year, 1996–2009