PUBLIC SECTOR FINANCIAL DISCLOSURE ON THE INTERNET: A STUDY OF NEW ZEALAND LOCAL AUTHORITIES

Professor Fawzi Laswad
Richard Fisher
Dr Peter Oyelere

February 2001

Commerce Division
PO Box 84
Lincoln University
CANTERBURY

Telephone No: (64) (3) 325 3627
Fax No: (64) (3) 325 3847
E-mail: oyelerep@lincoln.ac.nz

Abstract

Some New Zealand local authorities elect to provide financial information on their websites. Literature examining the behaviour of managers in the public sector suggests that agency relationships in the sector motivate such managers to provide information to enable the monitoring of their actions. This literature identifies a number of characteristics and variables that proxy for agency costs in the public sector. The recent development of the Internet provides an opportunity for examining voluntary disclosure in the public sector and, in particular, in the local government environment. This paper examines the voluntary Internet financial reporting practices of local authorities. Five variables associated with voluntary disclosure - size, type of local authority, profitability (surplus), leverage and press visibility - are examined. The results of the univariate analysis indicate that size, council type, and press visibility are associated with local authorities' choice to report financial information on the Internet. However, the results of multivariate analysis indicate that only size and type of council are associated with the quantity and type of financial disclosure on the Internet. Possible limitations of the study and suggestions for future research are discussed in the paper.

Contents

List of Tables

1.   Introduction

This paper examines the characteristics of local authorities that influence the voluntary dissemination of financial information on the Internet. Such examination enhances the understanding of the incentives for the use of the Internet as a medium for discretionary disclosure in the public sector. All 86 local authorities in New Zealand are included in this study.

Using various models such as agency and signalling theories, extensive literature examines the determinants and characteristics associated with discretionary disclosure practices by business enterprises.[1] Some literature examines the determinants of discretionary disclosure in the public (government) sector and identifies distinctive managerial incentives that motivate various disclosure practices (e.g., Baber, 1983; Christiaens, 1991; Evans and Patton, 1987; Ingram, 1984; Zimmerman, 1977).

In the early 1990s, as part of the reform of public sector financial reporting, public sector entities' financial reporting in New Zealand was aligned with private sector financial reporting. Public sector entities prepare their financial statements in accordance with the same set of financial reporting standards that apply to private sector entities.[2] The Local Government Act 1974 (sections 223D and 223E) requires local authorities to prepare two financial reports, an annual report and an annual plan. The annual report provides historical financial information while the annual plan provides forward-looking financial information. The Act requires local authorities to send copies of their annual reports and plans to the secretary of local government, the auditor general and parliamentary library. Local authorities are also required to make their annual reports and plans available for public inspection in their offices and libraries and make copies of such reports available to the public either free of charge or at a reasonable charge. Some local authorities elect to use the Internet to publish

---

[1] Cerf's (1961) empirical study of factors influencing the adequacy of US corporate annual report disclosure appears to have been a major catalyst for this stream of research. Subsequent studies have examined corporate voluntary disclosure in a variety of settings, such as India (Singhvi, 1968; Marston and Robson, 1997), Japan (Cooke, 1991, 1992, 1993), Mexico (Chow and Wong-Boren, 1987), New Zealand (McNally *et al.*, 1982; Wong, 1988; Bradbury, 1992; Hossain *et al.*, 1995), Sweden (Cooke, 1989a, 1989b), UK (Firth, 1979), and USA (Singhvi and Desai, 1971; Buzby, 1975; Malone *et al.*, 1993). Determinants that have frequently been examined include firm size, profitability, leverage, listing status, industry, and audit firm size. For a recent review of this literature, see Ahmed and Courtis (1999).

[2] Public Finance Act 1989 requires that the Crown, Crown entities and agencies, and departments prepare their accounts in accordance with generally accepted accounting practice. An amendment to the Local Government Act 1974 in 1989 requires that audited financial statements of local authorities be prepared in accordance with generally accepted accounting practice.

their annual reports and plans. Some also provide, on the Internet, additional or selected financial information in the form of financial highlights. This study investigates the possible influence of five key determinants on New Zealand local authorities' voluntary disclosure of financial information on the Internet

The use of the Internet as a medium for the dissemination of financial information by local authorities is discretionary. A number of studies examine the determinants of discretionary financial reporting on the Internet by business enterprises (e.g., Craven and Marston, 1999; Ashbaugh et al., 1999; Pirchegger and Wagenhofer, 1999). These studies primarily focus on managerial incentives in the private sector. The determinants of such discretionary disclosure in the public sector have not been examined. If local authority characteristics are associated with the incentives of disclosing private information, then these should be considered when evaluating the need for regulation of Internet disclosures by public sector entities. This study provides evidence which would be useful for legislators and accounting regulators.

To investigate why managers of local authorities elect to provide financial information on the Internet, this study compares the characteristics of local authorities that elect to use the Internet as a disclosure medium with the other local authorities that elect not to use such a medium. The results indicate that size and council type are the primary determinants of the disclosure of financial information on the Internet.

The paper is structured as follows. The following section reviews the literature on determinants of financial reporting practices in the public sector. Section 3 presents the research hypotheses. Section 4 discusses the research design. Data analysis and discussion are provided in Section 5. Summary and conclusion is the last section.

2. Literature Review

The literature examining voluntary disclosure in the government sector is largely based on the application of agency theory in that sector. The following is a review of literature on agency relationships and determinants of voluntary disclosure in the public sector.

2.1 Agency Relationships and the Incentives for Disclosure in the Public Sector

The relationships in business enterprises between managers, owners, and creditors are referred to as agency relationships. Similarly, the relationship between the political (public sector) manager and the voter can be described as an agency relationship whereby the voter is the principal and the political manager is the agent (Banker and Patton, 1987). In this scenario, politicians are assumed to be self-interested, maximising agents, whereby the maximisation of their wealth depends on re-election, advancement, and current and future income, both pecuniary and non-pecuniary (Zimmerman, 1977). Zimmerman notes that the interest of the agents and the principal can differ in several ways: the agents can shirk, consume perquisites, or engage in illegal acts. In addition, political managers, in the pursuit of achieving a higher office, can use the resources of the office to further their careers (McKean, 1964). For example the politician may sponsor strong environmental protection legislation to establish credibility as an environmentalist. They can also enter into informal contracts that trade current legislation for future support (Zimmerman, 1977). Furthermore, they can devise ways to use the relatively low cost (sometimes free) media exposure to "create" and "solve" a "political crisis" in order to make them more popular (Jensen 1976: cited from Zimmerman, 1977). These activities give the voters (as the politicians principals) incentives to monitor the behaviour of the politicians.

Within this framework, voters are also being assumed to be self-interested and to act in such a way as to increase their wealth. Voters' wealth is related to the actions of their agents, directly through the politicians' power to levy taxes and their power to determine the mix and the quality of services provided to the voters (as citizens) and indirectly through the effect of property taxes on property value (Zimmerman, 1977). Zimmerman states that though the contractual claims and benefits-sharing among the voters are not homogenous, each voter has an incentive to monitor the behaviour of the politicians; such as to reduce the outright theft and embezzlement and to monitor the level of perquisites consumed by the agent.

3

However, the voters are assumed to be rational and act only when the expected benefit exceed the expected cost of the action (Baber, 1983). Baber notes that although the potential benefit of electing an agent that favours the interest of the voter can be significant, the probability that a single voter can influence the outcome of an election is very small. Therefore, the expected benefits of becoming informed of the politicians' intentions and how they will affect the voter are relatively insignificant, whereas the cost of obtaining such information would be substantial (Baber, 1983). Hence most voters lack pecuniary incentive to acquire information to improve their voting decision (Downs, 1957: cited from Baber 1983). The voters tend to rely on intermediaries, called interest groups, who can affect the outcome of elections by distributing information that favours or disfavour candidates. Since interest groups have the power to influence the outcome of elections, they have an incentive to gather information about the behaviour and actions of the politicians (Baber, 1983). If the politicians wish to be elected, they could not afford to dismiss the interests of these groups, and hence the politicians advocate policies that appeal to these groups.

Similar to other agency relationships, in this scenario, the interest group (the principal) and the politician (the agent in the public sector) share certain benefits and also certain costs. Therefore the elected politicians supply monitoring information to show that they are in fact honouring the pre-election promises, and their incentives to do so increases as political competition increases (Baber, 1983).

The discussion above indicates that agency relationships in the public sector provide incentives to public sector managers to voluntarily disclose information that the allows the monitoring of their actions. A number of studies examine the voluntary disclosure of managers in the public sector. These studies are reviewed in the following section.

2.2   Incentives for Voluntary Disclosure in the Public Sector

Relative to the private sector, studies examining voluntary disclosure practices in the public sector are limited. Zimmerman's (1977) study is one of the earliest to examine the possible economic incentives for accounting policy choice by local governments. He proposes a number of economic incentives that influence the shape of municipal accounting systems. Evans and Patton (1983, 1987) identify economic incentives that lead cities to participate in the Government Finance Officers Association Certificate of Conformance Program. Ingram (1984) examines the association between economic determinants and the cross-sectional

variations in disclosure by US state governments, while Ingram and DeJong (1987) and Giroux (1989) examine reasons for variations in disclosure by US cities.

Studies examining economic determinants of financial reporting in the public sector are motivated by various objectives. Such objectives include providing a positive theory of local authorities disclosure practices (e.g. Zimmerman, 1977), explaining cross-sectional differences in accounting policy choices employed by local authorities (e.g. Christiaens, 1991; Ingram, 1984), and understanding the effects of reform and changes within government accounting systems (e.g. Christiaens, 1991).

Similar to studies examining voluntary disclosure in the private sector, a variety of theoretical arguments and frameworks such as agency costs, political costs, signalling and monitoring, and information asymmetry are employed by the researchers examining financial reporting in the public sector.

The literature identifies a range of potential disclosure incentives in the local authorities' environment. A summary of the major studies in the public sector is presented in Table 1. The following is a review of the various disclosure incentives examined in the literature.

Baber (1983) argues that the higher the political competition the higher the incentive for the political manager to supply monitoring information to the principals. Several studies have empirically tested this relationship (e.g. Ingram, 1984; Baber 1983; Baber and Sen, 1984; Evans and Patton, 1987). Most of these studies show a positive relationship between political competition and disclosure (e.g. Ingram, 1984; Baber 1983; Baber and Sen, 1984).

Several studies have examined the relationship between the form of local government (the chief operating officer is an elected mayor or a city manager) and monitoring incentives (e.g. Zimmerman 1977; Evans and Patton, 1987; Ingram and DeJong, 1987). Generally, these studies reveal a significant relationship between form of local government and disclosure choice.

Based on political theory, Baber (1983) suggests that size is related to both monitoring and political competition (see for example Stigler, 1976). A number of studies examine the association between size and monitoring behaviour (e.g., Evans and Patton, 1987; Ingram and DeJong, 1987; Ingram, 1984; Baber, 1983; and Christiaens, 1991). It appears the evidence

relating to the association between size and monitoring behaviour is inconclusive. Ingram (1984) and Evans and Patton (1987) report no statistical association while Baber (1983), Ingram and DeJong (1987), and Christiaens (1991) show a significant relationship between size and monitoring behaviour.

Zimmerman (1977) argues that politicians have incentives to reduce cost of debt thus increasing the resources available for other programs that may increase the politician's welfare. Such incentives motivate public sector managers to provide information for the monitoring of their actions. The results of studies that examined the relation between debt and monitoring behaviour of local authorities are mixed. For example, Ingram and DeJong (1987) and Evans and Patton (1987) report significant relationship between debt and disclosure while Baber (1983), Baber and Sen (1984) and Christiaens (1991) find that debt is not associated with disclosure.

Zimmerman (1977) notes that the press and public media is involved in the agency relationship between voters and politicians. He points out that the "uncovering of political graft and scandals sells newspaper, attracts television viewers and radio listeners, and therefore affects the advertising rate." However, if there is a demand facing the media to provide entertainment rather than provide information, certain news items may become more valuable (e.g. embezzlement and sex scandals) than uncovering shirking or the politicians' perquisites derived from vote trading. Hence, the monitoring provided by the press does not ensure that the political agent will act in the best interest of his voters, but rather only that certain forms of behaviour will be monitored more closely then others. The positive relationship between the press and disclosure is not supported in Ingram's (1984) study that finds a negative relationship between newspaper circulation and disclosure quality of financial reports. One explanation given was that the surrogate used may not be an effective proxy for the strength of the press, suggesting that the indirect relation was spurious.

3. Hypotheses

This section develops the study's hypotheses relating to the factors expected to affect New Zealand local authorities' discretionary use of the Internet for financial reporting. It draws heavily on the literature and theory overviewed in the preceding section. In particular, it assumes that all individuals (i.e., voters, local political managers, creditors, and members of the press) are rational, evaluative, maximising individuals, and that local authorities can be depicted as a series of complex agency relationships. The study does not attempt to model in detail all possible agency relationships pertaining to local authority entities. Instead, it focuses on those that the researchers believe are most relevant to a discussion of external financial reporting on the Internet.

3.1 Local Authorities in New Zealand

In New Zealand there are two principal forms of local authority, regional councils and territorial authorities. Territorial authorities are either district or city councils. Regional councils are responsible for resource management, bio-security, catchment control, harbour administration, regional civil defence, and regional land transport. City and district councils are responsible for community well-being and development, environmental health and safety (including building control, civil defence, and environmental health matters), infrastructure (roads and transport, sewerage, water/stormwater), recreation and culture, and resource management including land use planning and development control.

Eligible voters are entitled to vote for councillors and, in the case of territorial authorities, a mayor. The council appoints a chief executive officer (CEO) to whom heads of departments within the council are responsible. Under the Local Government Act 1974, the CEO (city manager) is charged with the responsibility for implementing decisions of the council, providing advice to council, and ensuring effective, efficient and economical management of the activities and planning of the local authority.

Over the last decade local government has become increasingly independent of central government. Central government has simultaneously devolved certain responsibilities to them, and reduced the extent of financial assistance and subsidies. The Economic and Social Commission of Asia and the Pacific (2001) estimates that 90 per cent of New Zealand local government funding is now locally sourced. Corresponding accountability is achieved

through the requirement of local authorities to engage in a consultative planning process, the publication and dissemination of an annual plan and an audited annual report; and the requirement that local authorities develop, implement, and maintain long-term financial strategies, together with investment and borrowing policies. Despite the largely autonomous nature of local government, the Minister of Local Government has the power to appoint a review authority to review a specific council where the Minister believes that there has been a significant and identifiable failure of governance (e.g., mismanagement of resources or deficiencies in the management or decision-making processes of the authority).

The four main sources of income for New Zealand councils are rates, grants from central government, income from user charges, and loans. Nowadays, the only kind of subsidy from central government is for roading construction and maintenance. Many of the restrictions on local authority borrowing have been removed with the passing of the Local Government Amendment Act 1996 (No. 3).

A number of agency relationships can be identified in the New Zealand local authority setting, and include relationships between:

voters (and interest groups) and local political managers,
creditors and local political managers,
central government bureaucrats and local political managers, and
council and appointed local political managers

3.2   Disclosure Incentives: Council Size

Baber (1983) argues that the number and magnitude of wealth transfers administered by political agents may increase competition for public office. Increasing political competition makes it more costly for incumbent political agents to ignore pre-election agreements with supporting voters (or interest groups), so political agents have an incentive to bear greater monitoring costs by supplying more information which demonstrate their execution of pre-election promises (Baber, 1983). The Internet is likely to be a cost effective means of satisfying the political manager's voluntary disclosure incentives as the cost of information production and dissemination on the Internet is likely to be largely unrelated to council size (Pirchegger and Wagenhofer, 1999). As a consequence, the benefits of disclosure over the Internet are likely to be increasing with size. The first hypothesis (in alternate form), then, is:

H_1:   There is a positive association between local authority size and the voluntary use of Internet financial reporting.

3.3   Disclosure Incentives: Leverage

The use of debt to finance public activities has been argued to promote an incentive for political managers to reduce the cost of debt. This may be achieved through the voluntary disclosure of information that facilitates monitoring by creditors (Zimmerman, 1977; Baber, 1983; Baber and Sen, 1984; Ingram 1984; Ingram and DeJong, 1987; Christiaens, 1991). Such incremental disclosure can occur through traditional hardcopy financial statements, and other media, such as Internet financial reporting. Therefore:

H_2:   There is a positive association between local authority leverage and the voluntary use of Internet financial reporting.

3.4   Disclosure Incentives: Profitability

Christiaens (1991) argued that 'municipal wealth' should be positively associated with increased disclosure because it provides a signal of management quality, which may benefit the local politicians by increasing their chances of re-election. Christiaens used 'own revenue per capita' as a proxy for 'municipal wealth'. However, net surplus may provide a more complete (but, by no means perfect) measure of managerial performance. Studies of private sector entities have argued that managers will be more forthcoming with information " … when the firm is performing well than when it is performing poorly" (Lang and Lundholm, 1993, p. 248 - 249). One explanation for this is that in such situations, management is keen to raise shareholder confidence and support management compensation contracts (Singhvi and Desai, 1971; Malone et al., 1993). Poorer performing firms may avoid using voluntary disclosure techniques, such as IFR, preferring instead to "… restrict access to accounting information to more determined users" (Craven and Marston, 1999, p. 323). The incentives of private sector managers would seem to be analogous to those of local political managers, who seek re-election, advancement, and/or pay rises. Hence:

H_3:   There is a positive association between local authority profitability and the voluntary use of Internet financial reporting.

3.5 Disclosure Incentives: Strength of Press

As discussed in Section 2, Zimmerman (1977) identified the role of the press in the agency relationship between voters and politicians. Consistent with Zimmerman, Ingram (1984, p. 130) argues that a strong press "… might induce more disclosures to satisfy the information demands of the press or even as a defensive mechanism for politicians".

H_4: There is a positive association between strength of the press, and the voluntary use of Internet financial reporting by local authorities.

3.6 Disclosure Incentives: Council Type

The incentives for voters to demand information from regional councils would appear to be limited. Rates charged by Regional Councils are considerably lower than those charged by territorial authorities. The average annual rates income of regional councils for 1996-98 per capita was $62, compared to $449 and $448 for city and district councils, respectively. However, local political managers of regional councils have incentives to make voluntary disclosures of financial information via the Internet in order to discharge their accountability obligations under sections 223c and 223d of the Local Government Act 1974. These sections require local authorities to operate in a manner that is open and comprehensible to the public, and to ensure that local communities are adequately informed about the activities of the council. Regional councils have significantly larger voter populations and geographical boundaries than territorial authorities, as the boundaries of regional councils usually encompass numerous territorial authorities. The Internet is a cost effective tool for disseminating information simultaneously to many individuals over large geographical distances. Given the inclusive nature of this analysis, we do not assume *a priori* what the direction of the relationship between council type and Internet financial reporting practice will be.

H_5: There is an association between council type and the voluntary use of Internet financial reporting by local authorities.

4.   Research Design

There are 86 local authorities in New Zealand. These local authorities comprise 12 Regional councils and 74 Territorial authorities. The Territorial authorities consist of 15 City councils and 59 District councils. The website addresses of local authorities were identified through the Local Government New Zealand website <http://www.lgnz.co.nz>, Local Government Online <http://www.localgovt.co.nz>, and Local Government Web Site Index <http://www.oultwood.com>. Local authorities not listed on these three websites were contacted by telephone to obtain their website addresses, if any.

Table (2) shows that 61 out of 86 local authorities maintain websites. All City councils maintain websites and 11 out of 12 (92%) Regional councils operate websites. The West Coast Regional council is the only Regional council that does not maintain a website. A lower proportion (59%) of District councils maintain websites. It could be argued that since Regional councils cover much larger geographical areas, the use of the Internet would be potentially more beneficial for them, especially where it enhances community access to local authority information. The prevalence of website ownership among City councils may symbolise the "urban factor" in Internet usage.

Local Councils use the Internet to provide a wide range of information including social and community items, council history or background, news and announcements, environmental information and tourism or promotional information. Of particular relevance to this study, only 30 (about 49%) of local authorities with websites provide financial information on those sites. A higher proportion of Regional (54%) and City Councils (67%) in comparison with District Councils (40%) provide financial information on the Internet. Table 3 provides a breakdown of the type of financial information provided on websites.

There are a number of practices relating to the display of financial information on local authorities' websites. Some councils provide financial highlights, annual reports, or annual plans while other Councils provide combinations of these documents. The publication of *annual plans only* is the most common practice in providing financial information on the web with 47 per cent of the Councils use this mode. One-third of Councils provide combinations of the three types of financial information.

Table 4 presents the definitions of the research variables used in this study. Financial data for local authorities are collected from the financial information on the websites of local authorities (where available) and from hard copies of their annual reports and plans. The financial accounting data covered the three-year period 1997 to 1999. Press visibility is measured by the number of news items appearing in the print press and obtained from the electronic database *Newsindex*. *Newsindex* is New Zealand's most comprehensive database of contents of newspapers, journals and magazines published in New Zealand.

The extent of Internet financial reporting is measured both as a dichotomous variable and by a disclosure index. The dichotomous measure reflects whether or not the local authority provides or does not provide financial information on the web. The disclosure index reflects the type and extent of financial information disclosed on their websites, as presented in Table 3. The disclosure index (score) for a local authority is measured on a scale from 1 to 3.5. A Local authority disclosure index receives 1 point if it publishes its annual report or annual plan on the web and 1.5 points if it publishes financial highlights. The higher score for the latter reflects the fact that this information is not available in other forms of media, such as traditional hard-copy financial reports. Descriptive statistics for the index score for all local authorities are presented in Panel B of Table 5.

5.   Data Analysis

The aim of this study is to identify the determinants of IFR among local authorities in New Zealand. Univariate and multivariate analytical approaches are used. Preliminary data analysis is carried out to explore the latent characteristics of the data collected for the study. The 86 local authorities are categorised into those providing financial reports on the Internet (IFRAs) and those not providing financial reports on the Internet (N-IFRAs). Table 5 (Panel A) presents descriptive statistics for the research variables for the two groups. Panel B of Table 5 provides descriptive statistics for the disclosure index for local authorities that provide financial information on the Internet.

Univariate independent sample *t-tests* are carried out on the independent variables for the two sub-groupings of local authorities to test for possible differences in the mean of the selected variables between IFRAs and N-IFRAs. Table 6 presents the results of the tests.

The multivariate regression analysis consists of two types of regression models. First, consistent with the two sub-grouping of the sample (IFRAs and N-IFRAs), the dependent variable is a binary measure. Logit analyses enable the estimation of the probability of an event's occurrence in relation to a number of measurable independent variables (size, surplus, leverage, local authority type and visibility in the local press). This estimation is used to ascertain the relative importance of these variables.

An algebraic statement of the estimated model is:

$$Y_i = \alpha + \sum X_{ij} \beta + \mu_i \qquad (1)$$

where, for the ith local authority,

Y = the dependant variable (0 and 1 for N-IFRAs and IFRAs respectively)

α = the equation's intercept

X_j = the measure of the exploratory variable j

β = estimate of the coefficient of the exploratory variable

μ = stochastic disturbance term

Expressed in its full form with respect to this study, the equation is:

$$FinInfo_i = \alpha + \beta_1(\text{Size})_i + \beta_2(\text{Type})_i + \beta_3(\text{Surplus})_i + \beta_4(\text{Leverage})_i$$
$$+ \beta_5(\text{Press})_i + \mu_i \qquad (2)$$

where, for the ith authority,

FinInfo = IFR practice; 0 for N-IFRAs and 1 for IFRAs

α = the constant of the equation

Size = total rates revenue

Type = dummy variable for type of local authority; 1 for Regional, 2 for City and 3 for District.

Surplus	=	profitability ratio as per reported surplus
Leverage	=	leverage ratio
Press	=	Number of print media items
μ	=	error term

The results of the multivariate regressions in equation 2 are presented in Table 7 (Panel A).

Second, since financial information on the Internet includes a variety of reporting practices, the multivariate analysis is undertaken by using a disclosure index outlined the research design above as the dependent variable. A multivariate regression model is estimated:

$$TypFinInfo_i \quad = \quad \alpha + \sum \beta_{ij1-5} + \mu_i \qquad\qquad (3)$$

where, for the ith local authority,

TypFinInfo	=	the dependent variable, IFR index score based on the type of financial information provided (1 point for web-publishing Annual Reports only; 1 point for Annual Plans only; 1.5 for Financial Highlights)
α	=	the constant of the equation
β_{j1} - β_{j5}	=	observations for each of the six explanatory variables (Size, Type, Surplus, Leverage, and Press) as specified in Equation (1) above.
μ	=	error term

The results of the multivariate regressions in equation 3 are presented in Table 7 (Panel B).

6. Results and Discussion

6.1 Descriptive Statistics

Table 5 shows that councils that provide financial information on the Internet (IFRAs) are larger than councils that do not provide such information on the Internet (N-IFRAs). The mean rates revenue of IFRAs, at $33.3 million, is more than double that of N-IFRAs ($14.6 million). The largest IFRA collected $121.2 million in rates, as compared to the largest N-IFRA's $89.9 million. This trend is repeated across alternative measures of size (not reported here) such as land size, total revenue and total assets. This preliminary result is similar to those reported by studies of IFR in the private sector (Ashbaugh et al, 1999; Oyelere et al, 2000).

IFRAs posted greater return on public equity than N-IFRAs. Their mean return on public equity, over the three years covered by this study, of 5.2 per cent compares to N-IFRA's negative return of 3.1 per cent. However, N-IFRAs' mean return on turnover and total assets were greater than those of IFRAs.

IFRAs are more highly leveraged, with long-term liabilities to total public equity ratio of 0.11:1 as compared to N-IFRAs' 0.07:1. Similarly, their long-term liabilities to total assets ratio is greater at 0.08:1 compared with N-IFRAs' 0.06:1.

IFRAs are more visible in the print press, with a mean press visibility count of 136 news items as compared to N-IFRAs' 20 news items. The level of publicity experienced, however, varies significantly among IFRAs, ranging between a minimum of 1 news item and a maximum 814 news items. N-IFRAs' minima was nil, with a maxima of 161.

6.2 Univariate Data Analysis

The results of the univariate test (Table 6) indicate statistically significant differences between N-IFR and IFR local authorities on the bases of size, council type and press visibility count. IFR councils are significantly larger than N-IFRAs at the 1% level. This result is consistent with the findings of previous studies on the characteristics of local authorities (and their variants), confirming size as a determining variable (Baber, 1983; Evans and Patton, 1987; Christiaens, 1991). Similarly, at the 1% level, IFRAs are more visible in the press. This high

level of positive association between IFR practice and press visibility may not be surprising, given that both are media for communicating information, financial or otherwise, to the stakeholders of the local authorities. Ingram (1984) documents the significant influence of the press on financial disclosure levels of governments. Also at the 1% level, differences were found in the types of local councils engaging in IFR. The results of non-parametric univariate *Mann-Whitney U* test (Panel B, Table 5) indicate a strong relation between council type and the propensity to publish financial information on the web. This may have largely resulted from the relatively lower level of IFR practice observed among District councils as earlier reported.

Differences between the two sub-samples of councils (IFRAs and N-IFRAs) are however statistically insignificant for profitability and leverage variables. IFRAs have a higher level of debt to equity and total assets. This is however not statistically significant across the three leverage variables used in this study. The higher level of debt may be related to the larger size of IFRAs councils. There is a subtle link between leverage and the need to use additional channels to make financial disclosures (Zimmerman, 1977; Baber, 1983). The evidence obtained from the univariate test in this study does not, however, support this position. Rather, it is consistent with the findings of a number of prior studies of disclosure in the public sector, where leverage and debt have been found to be not significant explanatory variables (Baber, 1983; Baber and Sen, 1984; Ingram, 1984 and Christiaens, 1991).

To summarise the findings of univariate tests carried out in this study, it is evident that, on average, IFRAs are significantly larger and more politically visible in the local press than N-IFRAs. Internet financial reporting practices among local authorities also appear to be significantly associated with type of council. No significant relations are, however, found at the 10% level or higher, between Internet financial reporting practice, and level of profitability and leverage, respectively.

6.3   Multivariate Regression Analysis

Table 7 (Panel A) presents regression summary statistics for the estimates in equation 2 where the dependent variable is a dichotomous measure indicating whether a local authority provides or does not provide Internet financial information. Since a number of proxies are used to measure two of the independent variables, profitability and leverage, a number of combinations (models) are tested. The results of the estimation of two models are presented in

Panel A of Table 7. Model A incorporates surplus after tax to total public equity as a measure of profitability and long term liability to total public equity as a measure of leverage. Model B includes surplus before tax to turnover as a measure of profitability and long-term liability to total assets as a measure of leverage.

Although both models have a high level of correct prediction of cases (75.6%), only one of the independent variables (Council type in Model B) is statistically significant. It appears that Internet financial reporting practices of local authorities cannot be predicted from traditional determinants used to partition other reporting practices in the public sector (Zimmerman, 1977; Ingram, 1984) or the determinants of Internet financial reporting in the private sector (Ashbaugh et al, 1999). Across both models, expected positive relationships are found between Internet financial reporting practices, on the one hand, and both size and surpluses on the other. Albeit statistically insignificant, this is consistent with the findings of other studies examining Internet financial reporting in the private sector (e.g., Ashbaugh et al, 1999; Oyelere, 2000). It appears, from the results of this analysis, that council types, given the influence of the other variables considered, have statistically significant impact, at the 10% level, on whether local authorities provide financial information on the web.

Both models are statistically significant at the 1% level. Model A accurately classifies more than 75% of the observations in the study. The results of its estimation indicate New Zealand local authorities' IFR practices are positively related to surpluses, press visibility and size, and negatively related to leverage. Taken in the context of earlier univariate analysis above, it appears that these variables individually exert measures of influence on the decisions of New Zealand local authorities to publish financial information on the web. The usefulness of these observed influences as predictors of IFR practices is, however, weak when the variables are combined in a multivariate specification. The results in Model A are generally similar to the results in Model B.

Table 7 (Panel B) presents regression summary statistics for the estimates in equation 3 where the dependent variable is measured by a disclosure index indicating the extent (quantity) of Internet financial information provided by a local authority. Similar to the analysis relating to equation (2) above, two alternative models A and B of equation (3) were specified. Across the two models, size and council type are statistically significant predictors of the extent of Internet financial disclosure by local authorities. Both variables are significant at the 5% level in the two models. Size is positively related to the level of disclosure, indicating that larger-

17

sized local authorities are more likely to disclose greater amounts of financial information on the Internet than smaller councils. Also, council type (that is, whether City, Regional or District) is a significant predictor of IFR practice.

On the basis of the results of these analyses, the hypothesis of a positive association between local authority size and the voluntary use of the Internet for financial reporting (H_1) is not rejected. The result supports the notion of greater scale-related benefits with disclosure on the Internet, given the decreasing costs of information production and dissemination (Pirchegger and Wagenhofer, 1999). This finding corroborates those of studies on determinants of traditional hard copy disclosure practices in the public sector (Baber, 1983; Evans and Patton, 1987; Christiaens, 1991; for example). It is also consistent with findings on determinants of Internet financial reporting practices in the private sector (e.g., Ashbaugh et al, 1999; Oyelere, 2000). Size bears a direct relationship to monitoring and political competition (Baber, 1983), with agency costs likely to increase with size. The Internet, as an emerging electronic tool, offers a cost-effective disclosure medium for organisations.

Similarly, hypothesis (H_5) indicating a relation between council type and the voluntary use of the Internet for financial reporting by local authorities is not rejected. There appears to be a relatively greater incentive for some council type(s) to make additional financial disclosure than others. As discussed in the development of the hypothesis, voters may have less demand for financial information on Regional, as compared to the other Councils given the relatively lower rates charged by Regional Councils. It is apparent from preliminary statistical analysis that a greater proportion of City Councils (67%), than other types of Councils, provide financial information on the Internet. Perhaps more significantly, 40 per cent of these IFR City Councils provide a combination of types of financial information, ensuring a higher score for this category of Councils on the disclosure index. While the notion may be fast changing, there is still an element of "urbanisation" associated with the use of the Internet, and City Councils may be using such medium to lower their agency cost. Concomitantly, City Council executives, councillors and employees are also more likely to be in touch with the latest technological developments, with greater access to appropriately skilled personnel and consultants. While there has not been many studies incorporating Council type as an explanatory variable in public sector disclosure studies, Ingram (1984) found statistically significant relationship between urbanisation and the level of disclosure among US States.

No support was found for the three other hypotheses (H_2, H_3 and H_4). It appears that there are no positive relationship between leverage, profitability and press visibility on the one hand, and the type and extent of Internet financial disclosure by local authorities on the other. The finding regarding leverage is not surprising. Apart from Evans and Patton (1987) and Ingram and DeJong (1987), the majority of prior studies on public sector disclosure reported statistically insignificant relation between leverage/debt and disclosure levels (See, for example, Baber, 1983; Baber and Sen, 1984; Christiaens, 1991; Ingram, 1984).

Profitability, as measured by size-denominated surpluses in this study, is not a commonly used variable in public sector disclosure literature, given the non-profit nature of the sector. The use of the variable is justifiable in this study, given the alignment of New Zealand public sector financial reporting with that of the private sector. Profitability has been widely presumed and reported to bear a positive relationship to disclosure levels in the private sector literature (Singhvi and Desai, 1971; Lang and Lundholm, 1993; Malone et al, 1993; Cravens and Marston, 1999). It appears, however, that despite the alignment of reporting practices, profitability is not a sufficient motivation for local authorities to provide incremental voluntary disclosure through the Internet.

A strong positive relationship was found between press visibility and IFR practices in this study. However, this relation is not sustained in the multivariate analysis. Hence, Zimmerman's (1977) strong argument for the role of the press in the agency relationship between voters and politicians, and Ingram's (1984) finding of a positive relationship between newspaper circulation and the level of disclosure among US States is not supported in this study.

In summary, two of the hypotheses stated in this study, predicting a positive relationship between size and council type, on the one hand, and IFR practices on the other, are accepted. The type and extent of Internet financial disclosure by local authorities is significantly and positively related to their size and council type. The hypotheses postulating a relationship between IFR practices and leverage, profitability and press visibility are however rejected based on the results of multivariate analyses in this study.

7.   Summary and Conclusion

Generally, the evidence regarding determinants of voluntary disclosure in the public sector is less conclusive in comparison with such evidence in the private sector. This is possibly the outcome of the limited research in the public sector as compared with the private sector. Further, the nature of public sector organisations, financial reporting practices and their agency relationships varies more considerably within and across countries in comparison with private sector organisations. The reform of public sector financial reporting in New Zealand where it is aligned with practices in the private sector and the development of the Internet as an information medium provides opportunities for the development of disclosure behaviour models in the public sector.

This study examines the possible determinants of discretionary Internet financial disclosure practices by local authorities in New Zealand in the context of agency and other theories highlighting the incentives for voluntary disclosures in the public sector. Based on a review of the literature, hypotheses are developed regarding an expected association between Internet financial reporting practices and financial and other characteristics of local authorities.

Results of statistical analyses indicate that IFRAs and N-IFRAs could be segregated, at the 5% level or higher, on the bases of size, council type, and political visibility. However, only size and council type are significant in the multivariate analysis. Given the influence of other determinants, none of the variables identified in this study is a significant predictor in a strictly dichotomous partition of IFRAs and N-IFRAs. Taking the analysis further, by constructing a basic index score based on the type and extent of financial information disclosure by local authorities on their websites, size and council type were found to be statistically significant predictors. As in a number of previous disclosure studies, larger local authorities are found to voluntarily disclose greater financial information. Also, it is apparent that City Councils engage in more voluntary financial disclosure through the Internet than Regional and District Councils, possibly due to the "urban" nature of the Internet and access to it. This effect is likely to dissipate significantly in the near future.

Three of the hypotheses stated in this study are not supported. No support is found for the hypothesised positive relation between Internet financial reporting practices and leverage, profitability and press visibility.

Future research opportunities include the refinement of a disclosure index for disclosure on the Internet that has not been included in other reporting outlets such as hard copy financial reports. The inclusion of other financial and non-financial variables such as management compensation and qualification may assist the development of improved predictive models of voluntary disclosure in the public sector. Such data was not available for this study. Future research may also consider examining the timeliness of disclosure on the Internet and how it compares with the timeliness of reporting in other media. This study is based on New Zealand practices; studies in other countries and international comparisons of determinants of IFR would be useful in the development of a comprehensive predictive model disclosure in the public sector in an electronic environment such as the Internet.

References

Ashbaugh, H., Johnstone, K. and Warfield T. (1999) Corporate reporting on the internet. *Accounting Horizons* 13, 241-257.

Banker, R. D. and Patton J. M. (1987) Analytical Agency Theory and Municipal Accounting: An introduction and an application.. *Research in Governmental and Non-profit Accounting* 3 (B), 29-50.

Baber W. R. (1983) Towards understanding the role of Auditing in the public sector. *Journal of Accounting and Economics* 5, 213-227.

Baber W. R. and Sen P.K. (1984) The role of generally accepted reporting methods in the public sector: An empirical test. *Journal of Accounting and Public Policy* 3, 91-106.

Bradbury, M. (1992) Voluntary disclosure of financial segment data: New Zealand evidence. *Accounting and Finance* , 15-26.

Buzby, S.L. (1975) Company size, listed versus unlisted stocks, and the extent of financial disclosure. *Journal of Accounting Research* 13, 16-37.

Cerf, A.R. (1961) *Corporate reporting and investment decisions* (University of California Press, Berkley, California).

Chow, C. and Wong-Boren, A. (1987) Voluntary financial disclosure by Mexican corporation. *The Accounting Review* 62, 533-541.

Christiaens, J. (1991) Financial Accounting Reform in Flemish Municipalities: An Empirical Investigation. *Financial Accountability and Management* 15(1), 21-40.

Cooke, T. (1989a) Voluntary corporate disclosure by Swedish companies. *Journal of International Financial Management and Accounting* 1, 171-195.

Cooke, T. (1989b) Disclosure in the corporate annual reports of Swedish companies. *Accounting and Business Research* 19, 113-124.

Cooke, T. (1991) An assessment of voluntary disclosure in the annual reports of Japanese corporations. *The International Journal of Accounting* 26, 174-189.

Cooke, T. (1992) The impact of size, stock market listing and industry type on disclosure in the annual reports of Japanese listed corporations. *Accounting and Business Research* 22, 229-237.

Cooke, T. (1993) Disclosure in Japanese corporate annual reports. *Journal of Business Finance and Accounting* 20, 521-535.

Craven, B. and Marston C. (1999) Financial reporting on the internet by leading UK companies. *The European Accounting Review* 8, 321-333.

Downs, A. (1957) *An Economic Theory of Democracy*, Harper and Row: New York.

Economic and Social Commission for Asia and the Pacific, n.d., "Country Paper: New Zealand", Retrieved 20 January, 2001, from the World Wide Web: http://www.unescap.org/huset/lgstudy/country/newzealand/nz.html

Enterprise New Zealand Trust, 1997, *Local Government in New Zealand*, Enterprise New Zealand Trust: Lower Hutt.

Evans III, J. H. and Patton, J. M. (1987) Signalling and monitoring in public-sector accounting. *Journal of Accounting Research* 25 suppl., 130-158.

Firth, M. (1979) The impact of size, stock market listing, and auditors on voluntary disclosure in corporate annual reports. *Accounting and Business Research* 9, 273-280.

Hossain, M., Perera, M.H.B. and Rahman, A.R. (1995) Voluntary disclosure in annual reports of New Zealand companies. *Journal of International Financial Management and Accounting* 6, 69-85.

Ingram, R. W. (1984) Economic incentives and the choice of state government accounting practices. *Journal of Accounting Research* 22(1), 126-144.

Ingram, R. W. and DeJong, D. V. (1987) The effect of regulation on Local Government Disclosure Practices. *Journal of Accounting and Public Policy* 6(4), 245-70.

Jensen, M. C. (1976) Towards a theory of the press, Paper presented at the Third Annual Conference on Analysis and Ideology, Interlaken, June 4th.

Lang, M. and Lundholm, R. (1993) Cross-sectional determinants of analyst ratings of corporate disclosures. *Journal of Accounting Research* 31, 246-271.

Local Government New Zealand (1998) *Elected Members' Handbook: Introduction to New Zealand's Local Government*, Local Government New Zealand: Wellington.

Malone, D., Fries, C. and Jones, T. (1993) An empirical investigation of the extent of corporate financial disclosure in the oil and gas industry. *Journal of Accounting, Auditing and Finance* 8, 249-273.

McKean, R. (1964) Divergence between Individual and Total Costs within Government. *American Economic Review*.

McNally, G.M., Lee, H.E. and Hasseldine, R. (1982) Corporate financial reporting in New Zealand: An analysis of user preferences, corporate characteristics and disclosure practices for discretionary information. *Accounting and Business Research* 13, 11-20.

Marston, C.L. and Robson, P. (1997) Financial reporting in India: Changes in disclosure over the Period 1982 – 1990. *Asia-Pacific Journal of Accounting* 4, 109-139.

Pirchegger, B. and Wagenhofer, A. (1999) Financial information on the internet: A survey of the homepages of Austrian companies. *The European Accounting Review* 8, 383-395.

Oyelere, P., Laswad, F. and Fisher, R. (2000) Determinants of Internet financial Reporting by Listed New Zealand Companies, Paper presented at AAANZ Annual Conference, Hamilton Island.

Singhvi, S.S. (1968) Characteristics and implications of inadequate disclosure: A case study of India. *The International Journal of Accounting Education and Research* 3, 29-43.

Singhvi, S.S. and Desai, H.B. (1971) An empirical analysis of the quality of corporate financial disclosure. *The Accounting Review* 46, 120-138.

Stigler, G. J. (1972) Economic Competition and Political Competition. *Public Choice* 13, 91-106.

Wong, J. (1988) Economic incentives for the voluntary disclosure of current cost financial statements. *Journal of Accounting and Economics* 10, 151-167.

Zimmerman, J. L. (1977) The Municipal accounting maze: An analysis of political incentives. *Journal of Accounting Rresearch* 15 Suppl., 107-144.

Table (1)
Summary of Disclosure Studies in Public Sector

Authors (year)	Country	Sample size	Dependent Variable	Type of Analysis	Hypothesised Independent Variables	
					Significant (p<0.1)	Not Significant
Baber (1983)	US	50 States	State Audit budget (dollars)	Univariate	Political Competition	
				Multiple Regression	Population Political Competition	Political intra-party Competition Debt Legislative size Wages
Baber and Sen , 1984)	US	50 States	State adopt GAAFR funds definition	Univariate	Political Competition Wages	Debt Legislative Turnover Statutory restrictions
				Probit	Political Competition (Inter-party competition) Wages[a] Legislative Turnover Statutory restrictions	Political Intra-party Competition Debt
Christiaens, (1991)	Belgian	23 councils	Compliance index	Regression analysis	Experience Consultants support Level of education Training per person Population	Related parties Regional Treasurer Level of staff education Membership Business Experience Long-term debt per capita Own Revenue per capita

25

Table (1) Continued
<u>Summary of Disclosure studies in Public Sector</u>

Authors (year)	Country	Sample size	Dependent Variable	Type of Analysis	Hypothesised Independent Variables	
					Significant influence (p<0.1)	Not Significant
Evans III and Patton, (1987)	US	444 cities	GFOA Certificate of Conformance Program participation	Probit (for two periods - for 1976-80 and 1981-84)	Form of Government Quality of management (CFO salary) Population (for 1976-80) Debt Professionally active CFOs GAAP State (for 1976-80) NON-GAAP state (for 1981-84)	Population (1981-84) Company town Political competition Quality of management (level of education)
Giroux, (1989)	US	167 cities	Disclosure Index based on: 1. *pension and employee benefit disclosure* 2. *operating budget format and disclosure* 3. *statistical section disclosure*	Multiple Regression Analysis using 3 different dependent variables	Bureaucratic (simplicity index)[b] Monitoring (audit opinion)[c] Structural (GAAP required)[d] Structural (mayor/manager)[c] Median voter (avg. income)[b] Median voter (avg. tax price)	Political competition (winning percentage)
Ingram and DeJong, (1987)	US	544 cities	Disclosure Index	OLS regression	Non GAAP regulated Population Growth Federal Aid Form of Government (mayor, manager) Debt State Aid	Population GAAP regulation

Table (1) Continued
Summary of Disclosure Studies in Public Sector

Authors (year)	Country	Sample size	Dependent Variable	Type of Analysis	Hypothesised Independent Variables	
					Significant influence (p<0.1)	Not Significant
Ingram, (1984)[e]	US	50 states	Disclosure Index 1. *12-practice index* 2. *8-practice Index* 3. *Logistics*	Multiple Regression	Political Competition (index) Urbanisation Per capita income Appointive powers of governor Selection of accounting administrator Selection of Auditor News paper circulation Own revenue per capita Salaries (Governor and accounting) (all the above variables were concluded by the author to have relatively important explanatory power)	Median School years Long term debt per capita Intergovernmental Revenue/ Total revenue Salaries (Legislator) Auditor-CPA Population
Zimmerman, (1977)	US	96 cities	Length of annual reports and type of auditor	Univariate	Form of government (mayor, manager)	

Notes:

a. In the Probit model Wages is significant only when Inter-party competition is omitted

b. Significant under the budget index only.

c. Significant under a statistical index only.

d. Significant under a composite index only.

e. Since this paper uses a variety of models its difficult to identify tested variables.

Table (2)
Local Authorities' Maintenance of Websites

Type	Regional Council		City Council		District Council		Total	
	No.	%	No.	%	No	%	No	%
With website	11	92	15	100.0	35	59	61	71
Without website	1	8	0	0.0	24	41	25	29
Total	12	100.0	15	100.0	59	100.0	86	100.0

Table (3)
The Nature of Published Financial Information on the Internet (n = 30)

	Council type			Total	
	Regional	City	District	No. of local authorities	%
Financial highlights only	1	-	3	4	13.3
Annual reports only	1	-	1	2	6.7
Annual plan only	1	6	7	14	46.7
Combinations of annual reports, plans and financial highlights	3	4	3	10	33.3
Total	6	10	14	30	100

Table (4)

Research Variables

Variables	Definition
Size: Rates	Average rate income
Profitability:	
Return on public equity	Surplus after tax
	Total public equity
Return on total asset	Surplus before interest and tax
	Total assets
Return on turnover	Surplus before interest and tax
	Turnover
Leverage:	
Long-term liability: Total Assets	Long-term liability
	Total Assets
Total public equity: Total Assets	Total public equity
	Total Assets
Long-term liability: Total public equity	Long-term liability
	Total public equity
Press Visibility: Count	Number of news items in the print press in which the local authority appeared during the period 1998 to 2000, as measured by a count search on *Newzindex*.
Others:	
Council type	Type of Local authority: 1=Regional; 2=City; and 3=District

Table (5)
Descriptive Statistics

Panel A: Independent variables

Variable	Statistics	All Local Authorities	N-IFRAs	IFRAs
Size				
Rates	Mean	$20,796,944.93	$14,646,019.56	$33,326,607.70
	Std Deviation	$24,177,332.39	$15,340,059.10	$33,004,204.59
	Skewness	2.197	2.835	1.214
	Minimum	$244,602	$712,385	$244,602
	Maximum	$121,163,000	$89,915,000	$121,163,000
	Percentile 25	$5,640,750.00	$5,268,021.00	$8,916,000.00
	Percentile 75	$23,680,769.25	$17,284,000.00	$56,148,000.00
Profitability				
Return on public equity	Mean	-0.0190	-0.0309	0.0052
	Std Deviation	0.2368	0.2829	0.0872
	Skewness	-8.4210	-7.3260	-4.2610
	Minimum	-2.0826	-2.0826	-0.4068
	Maximum	0.1102	0.0693	0.1102
	Percentile 25	0.0052	0.0018	0.0012
	Percentile 75	0.0188	0.0172	0.0346
Return on turnover	Mean	0.0371	0.0751	-0.0404
	Std Deviation	0.3770	0.1601	0.6167
	Skewness	-7.0910	0.7400	-4.9660
	Minimum	-3.0835	-0.3974	-3.0835
	Maximum	0.6997	0.6997	0.3455
	Percentile 25	0.0150	0.0124	0.02261
	Percentile 75	0.1114	0.1187	0.0947
Return on total asset	Mean	0.0049	0.0076	-0.0007
	Std Deviation	0.0473	0.0197	0.0782
	Skewness	-6.7340	-2.0010	-4.6060
	Minimum	-0.3790	-0.0929	-0.3790
	Maximum	0.0930	0.0516	0.0930
	Percentile 25	0.0013	0.0090	0.0448
	Percentile 75	0.0174	0.0173	0.0184
Leverage				
Long-term liability:	Mean	0.0669	0.0621	0.0766
Total Assets	Std Deviation	0.1236	0.1387	0.0866
	Skewness	5.4040	5.5400	2.9700
	Minimum	0.0000	0.0000	0.0003
	Maximum	0.9668	0.9668	0.4361
	Percentile 25	0.0145	0.0140	0.0279
	Percentile 75	0.0742	0.0514	0.0880
Total public equity:	Mean	1.0145	1.0584	0.9252
Total Assets	Std Deviation	0.7219	0.8622	0.2591
	Skewness	8.3570	7.2610	3.5130
	Minimum	0.4328	0.6754	0.4328
	Maximum	7.2933	7.2933	2.0960
	Percentile 25	0.8865	0.9218	0.8437
	Percentile 75	0.9705	0.9726	0.9679

Panel A continued: Descriptive Statistics - Independent variables

Variable	Statistics	All Local Authorities	N-IFRAs	IFRAs
Long-term liability:	Mean	0.0808	0.0674	0.1081
Total public equity	Std Deviation	0.1645	0.1499	0.1910
	Skewness	4.6830	5.0970	4.3210
	Minimum	0.0000	0.0000	0.0003
	Maximum	1.0077	1.0063	1.0077
	Percentile 25	0.0147	0.0147	0.0215
	Percentile 75	0.0804	0.0557	0.1004
Press visibility count	Mean	60.69	20.29	136.10
	Std Deviation	145.46	33.56	225.48
	Skewness	3.912	2.8990	2.122
	Minimum	0	0	1
	Maximum	814	161	814
	Percentile 25	4.00	3.25	8.00
	Percentile 75	30.00	20.75	181.75
Others				
Council type	Count	86	56	30

Panel B: Dependent Variable (Equation 2) Local authority IFR scores

Statistics

	Mean	0.5058	
	Std. Deviation	0.7765	
	Skewness	1.4270	
	Minimum	0.0000	
	Maximum	3.5000	
	Percentiles: 25	0.0000	
	75	1.0000	

IFRAs = Internet financial reporting local authorities

N-IFRAs = Non-internet financial reporting local authorities

Table (6)
Univariate Sample Tests of Independent Research Variables for N-IFRA and IFRA

Panel A: Sample T-Test of continuous independent variables

Research Variable	Mean Difference (Standard errors diff.)	Test Statistics t-value	Sig. (2-tailed)
Size			
Rates	-18,680,588.14 (5,321,582.0)	3.510	.001***
Profitability			
Return on public equity	-0.0360 (0.0558)	-0.6447	.521
Return on turnover	01156 (0.0882)	1.3103	.194
Return on total asset	0.0083 (0.0112)	0.7479	.457
Leverage			
Long-term liability: Total Assets	-0.0145 (0.0292)	-0.4971	.621
Total public equity: Total Assets	0.1331 (0.1700)	0.7830	.436
Long-term liability: Total public equity	-0.0407 (0.0386)	-1.0539	.295
Press Visibility			
Press visibility count	-115.81 (30.60)	-3.7850	.000***

Panel B: Mann-Whitney U Test of categorical independent variable

	Mean Ranks(Sum of Ranks)		Mann-Whitney U	Test Statistics	
	N-IFRA	IFRA		Z	Sig. (2-tailed)
Others					
Council type	48.29 (2704.00)	34.57 (1037.00)	572.00	-2.969	.003***

*** = Significant at the 1% level

Table 7
Multivariate Regression Results
Panel A: $FinInfo_i = \alpha + \beta_1(Size)_i + \beta_2 (Type)_i + \beta_3 (Surplus)_i + \beta_4 (Leverage) + \beta_5 (Press) + \mu_i$

Research Variable	Expected Sign	Model A		Model B	
		Beta	Sig.	Beta	Sig.
Constant	?	0.0779	.939	0.1788	.862
Size	+	0.0001	.245	0.0001	.159
Council type	?	-0.5814	.106	-0.6277	.082*
Surplus	+	0.3213	.839	1.2051	.205
Leverage	+	-0.3192	.864	-0.6943	.801
Press	+	0.0056	.199	0.0053	.204
Log likelihood		85.05		82.15%	
Chi^2 statistics		18.86***		21.77***	
Degrees of freedom		5		6	
Correctly predicted: N-IFR		94.5%		92.7%	
IFR		37.0%		40.7%	
Overall		75.6%		75.6%	

Panel B: $TypFinInfo_i = \alpha + \Sigma\beta_{ij1-5} + \mu_i$

Research Variable	Expected Sign	Model A		Model B	
		Beta	Sig.	Beta	Sig.
Constant	?	0.8638	.011**	0.9058	.006***
Size	+	0.0001	.050**	0.0001	.031**
Council type	?	-0.2353	.043**	-0.2480	.029**
Surplus	+	-0.0457	.891	-0.2440	.241
Leverage	+	0.0461	.927	-0.1370	.831
Press	+	0.0007	.276	0.0007	.314
Adjusted R^2		0.17		0.19	
F statistics		4.42***		4.79***	

*** = Significant at the 1% level, ** = Significant at the 5% level, while * = Significant at the 10% level.
The proxies employed for the measurement of Size (Rates Revenue) and Council Type (Type of local authority, i.e. whether Regional, City or District) and Press (Press visibility count) are identical for the two alternative specifications A and B. Alternative measures used for the remaining two independent variables are:
Surplus = Surplus after tax to Total public equity (Model A); Surplus before interest and tax to Turnover (Model B);
Leverage = Long-term liability to Total public equity (Model A) or Long-term liability to Total assets (Model B).