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ATTITUDES OF KUWAITI SHAREHOLDING COMPANIES TOWARDS DISCLOSURE OF ACCOUNTING INFORMATION ON THE INTERNET

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This paper uses the logit and probit regression analysis to model the decision as to whether a Kuwaiti shareholding company will be inclined to disclose accounting infonnation regarding its performance on the internet. A sample of 44 Kuwaiti companies listed on Kuwait security Market was interviewed. The respondents were requested to indicate their age in business, total of assets, ratio of loans to equity, foreign connections in terms of customers, supplier. or creditors and average return on assets over the last three years.

Both the logit and probit regression models gave a good fit. The econometric results suggest that the larger the fit firm, the higher the ratio of the loans to equity and the more the connections with the outside world, the higher the probability that the shareholding company will disclose the accounting information on the internet. On the other hand, business age and average return on assets do not seems to have any significant impact on the decision to disclose information on the internet.

INTRODUCTION

Kuwait is an open oil producing economy whose business enterprises operate within a framework of globalization, using best available modern information technology. There were 77 Kuwaiti shareholding companies listed on the Kuwait Securities Market in March 2001 (IBS, 2001). Out of the se 77 companies, there were 8 banks, 18 investments companies, 4 insurance companies, 13 real estate companies, 14 companies operating in the services sector and 20 companies operating in the manufacturing sector (including four companies in specialized in food processing and importation.)

The aim of this paper is to find out the main factors which induce listed shareholding Kuwaiti companies to disclose accounting information (periodical financial statements, auditing reports etc.) on the internet for access to shareholders, customers, creditors, suppliers and all actual and *potential* interested parties. To achieve its aim, a sample of 44 Kuwaiti companies listed on the Kuwaiti Security Market were interviewed. This sample makes up approximately *57* per cent of total company population. The logit and probit regression analysis was applied to collected information in order to test the probability of disclosing accounting informatioxi on the Internet.

The paper is divided into four sections. The sample characteristics are discussed in section I. Section II briefly outlines the methodology of the paper. The regression results are reported in section III. Finally, section IV summarizes the main findings of the paper.

MAIN SAMPLE CHARACTERISTICS

The sample for this study is based on the survey conducted during the three months of April-June 2002. 44 listed Kuwaiti shareholding companies agreed to reply to a questionnaire developed for the purpose. A close examination of the sample suggests that:

1. The sample contained 4 banks, 12 investment companies, 1 insurance company, 7 real estate companies, 11 industrial companies and 9 services companies.
2. 14 companies have been in business over 20 years, 21 companies were in business for more than 16 years but less than 20 years while 7 companies have been in business for only less than 10 years.
3. Three companies had assets whose value exceeded us$2000rn, 9 companies had assets whose values ranged from us$l000m to us$2000m, *15* companies had assets whose values ranged from us$500m to us$l000m, while 17 companies had assets whose value were less than us$500.
4. 12 companies had a ratio of loans to equity that exceeded 200 per cent, 22 companies had a ratio between 100 and 200per cent while 10 companies had a ratio of less than 10 per cent.
5. Only 12 companies had some foreign connection in terms of customers, suppliers or creditors.
6. The rate of return on assets varied significantly between companies. 7 companies achieved an average rate of return which exceeded 10 per cent over the last 3 years. The comparable average rate of return was 5-10 per cent for 18 companies; *1-5* per cent for 16 companies and less than 1 per cent for 3 companies.
7. Out of those 44 companies, 14 companies (31.9%) have been disclosing information on the Internet and 20 companies (47.8%) expressed readiness to go ahead with the disclosure.
8. 10 companies advised that they were not thinking at this point of disclosing accounting information on the Internet (22.7%).

II. METHODOLOGY

Since we are trying to model the decision as to whether a Kuwaiti shareholding company will disclose infonnation on the Internet, the dependent variable in this case takes the value of 1 (if the company discloses information) or 0 (if the company

chooses not to use the internet.) If an ordinary model is used in such cases, there is no assurance that the predicted value will be 0 and 1. (Maddala, 1993) To make sure that such a situation does not arise, the following functional form (known as the logistic curve) is commonly adopted:

$$In\ \frac{P}{1-P} = \alpha + \beta X + \mu$$

Where *P* is the value of the dependent variable between 0 and 1. This model is more commonly known as the logit model (Kramer, 1991). Solving this equation for *P* (by first exponentiation both sides) we get (Rarnanathan, 1992).

$$p = \frac{1}{1+e^{-(\alpha+\beta x+\mu)}}$$

It is easy to see that if $\beta > 0$, then P takes the value 0 when $x = -\infty$ and 1 when $x = \infty$. Thus P can never be outside the range [0, 1]. The marginal effect of *x* on *P* is calculated by taking the partial derivative of P with respect to *x*. The estimated marginal effect is given as follows:

$$\frac{dp^{\wedge}}{dx} = \frac{\beta^{\wedge} e^{-(\alpha^{\wedge}+\beta^{\wedge} x)}}{[1+e^{-(\alpha+\beta x)}]} = \beta^{\wedge}\,\rho^{\wedge}(1-\rho^{\wedge}).$$

The parameters of the logit model, where $P = 0$ or $P = 1$, are estimated using the maximum likelihood method (Aldrich and Nelson and Demaris, 1992).

The decision whether to join the labor force in the government or the private sector can also be analyzed using what is known as the probit model. The assumption underlying probit analysis is that there is a response function of the form:

$$Y^{*}_{t} = \alpha + \beta x_t + u_t$$

Where x_t is observable but where Y^* is an unobservable variable. What we observe in practice is Y_t which takes the value of 1 if >0 and 0 if otherwise (Ramanathan, 1992). We thus have:

$$Y_t = 1 \text{ if } \alpha + \beta x_t + u_t > 0$$

$$Y_t = 0 \text{ if } \alpha + \beta x_t + u_t \le 0$$

If we denote *by F(z)* the cumulative distribution function of the normal distribution, that is, $F(z) = \alpha + P(z \le z)$, then

$$P(Y_t = 1) = P(u_t > -\alpha - \beta X_t)$$

$$= 1 - F\left(\frac{-\alpha - \beta x_t}{\sigma}\right)$$

$$P(Y_t = 0) = P(u_t \le -\alpha - \beta X_t)$$

$$= F\left(\frac{-\alpha - \beta x_t}{\sigma}\right)$$

The joint probability density of the sample of observations (the likelihood function) is therefore given by:

$$L = \Pi F\left(\frac{-\alpha - \beta x_t}{\sigma}\right) \Pi\left[1 - F\left(\frac{-\alpha - \beta x_t}{\sigma}\right)\right]$$

The parameters α and β are estimated by maximizing the above expression. The likelihood function above is concave, i.e. does not have multiple maxima (Pratt, 1981). Hence, any starting value of the parameters will be acceptable for the iterations.

The estimates of the parameters from the two methods (the probits and the logits) are not directly compaible (Maddala, 1992). Arnemiya (1981) suggests that if we multiply the'Jogits estimates by 0.625 we will obtain a close approximation between 'the logistic and the distribution function of the standard normal.

III. STATISTICAL RESULTS

The regression results of the logit and the probit models for the sample companies are shown in Table 1 (with t-statistics in parenthesis.) The dependent variable being the probability of disclosing information on the Internet 1. The dependent variable being the probability of disclosing accounting information on the Internet. It is clear from the regression results in Table 1 that:

1. The coefficients of a few variables are statistically significant at, at least, the 0.05 level.
2. Maddala *R2,* Cragg-Uhler *R2* and Mcfadden *R2* are all relatively high suggesting a good fit.
3. The per centage of correct prediction is over **93** per cent. This exceeds by far what might be obtained by mere chance.
4. The coefficients of the logit model are approximately 1.6 times those of the probit model.

The regression results suggest the following:

1. The size of the company, measured by the value of its assets, has a very strong positive effect. Thus, the larger the company, the higher the probability of disclosing information on the Internet. This suggests that larger companies tend to use more extensively the results of development in technology than smaller companies.
2. The ratio of debt to equity has a strong positive effect. Companies with this accounting characteristic tend to keep their creditors continuously informed

about the company's performance. Since most, if not all of these creditors use modem technology and keep in touch with market performance domestically and abroad, the disclosure of accounting information is by their debtors would improve their image to the creditors.

3. The coefficient of the variable representing foreign connections is positive and statistically significant. This suggests that companies who have more foreign connections, in terms of customers, creditors or suppliers, tend to be much keener on disclosing accounting information relating to their performance on the Internet. This method of disclosure accelerates the speed of transmitting information, which is an important issue to parties located at far distance.
4. The coefficients of the variables representing age of the company and average profitability are not statistically significant. This suggests that newly established companies do benefit from the use of developments in technology as older-established companies. Also, the relative small profitability is not a deterring factor in encouraging Kuwaiti listed companies to disclose accounting information on the Internet.

Table 1
Summary of the Logit and Probit Analysis

Variables	*Analysis*	
	Logit	*Probit*
Constant	-5.586 (-2.258)	-2.817 (-2.182)
Age of the company	0.325 (1.085)	0.172 (1.479)
Value of Assets	0.0021 (4.380)	0.0015 (4.569)
Ratio of loans to equity	0.992 (2.526)	0.561 (2.335)
Foreign Connections	1.256 (2.793)	0.710 (2.884)
Average Profitability	1.428 (1.450)	0.846 (1.359)
Maddala R^2	0.557	0.663
Cragg-Uhler R^2	0.795	0.811
McFadden R^2	0.668	0.667
Chow R^2	0.690	0.684
Log-Likelihood Function	–10.208	–9.9941
Likelihood Ratio Test (with f df)	25.701	27.185
% of Correct Predction	0.931	0.931

IV. CONCLUSIONS

The main findings of this paper may be summarized in the following:

1. The larger the Kuwaiti Shareholding Company, as measured by the size of its assets, the higher the probability that the company will disclose accounting information on the Internet.
2. Kuwaiti shareholding companies with relatively higher debt-equity ratio are more likely to disclose accounting information on the internet than Kuwaiti shareholding companies with relatively low debt-equity ratio.
3. The more significant the foreign connection, the higher the probability that a Kuwaiti shareholding company will disclose accounting information on the Internet.
4. The probability of Kuwaiti listed shareholding companies to disclose accounting information on the Internet does not seem to be significantly influenced by the achieved average rate of profit or the age of the company.

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