

OWNERSHIP, STRUCTURE AND AGENCY COSTS IN UK FIRMS

Mahendra Raj* and Mazida Abdul-Malik**

Abstract

This paper investigates the impact of firm type and ownership structure on agency costs in UK firms. Prior literature suggests that agency costs are significantly higher when an outsider manages the firm. In this paper, we examine the agency costs associated with different types of firms such as subsidiary, holding, foreign-owned and limited companies. We extend our analysis by examining the agency costs for firms with various levels of diffuse ownership. Consistent with the agency theory, we find that firms with single ownership incur lower agency cost. In addition, we find that the type of firm does contribute to the increase or decrease of agency cost.

Keywords: ownership, agency cost, shareholder, operating expense, turnover

* Chair of Finance at the Aberdeen Business School, Robert Gordon University, Garthdee Road, Aberdeen AB10 7QE, United Kingdom, Fax: (44)1224-263143, Email: m.raj@rgu.ac.uk,

** Doctoral student at the Robert Gordon University, UK

1. Introduction

Literature recognises that diffuse ownership structure may diminish shareholder incentives to monitor managers. In a very diffusely owned firm, the divergence between benefit and costs of monitoring would be larger for the typical owner, thus he can be expected to neglect some tasks of ownership. The more concentrated the ownership, the greater the degree to which benefits and costs are borne by the same owner.

Those who own large fractions of the outstanding shares of a firm either manage the firm themselves or are positioned to ensure that management serves their interests. Managers pursuing their own interests at the shareholders expense will lead to agency problem. The conflicts of interest between managers and shareholders constitute a source of agency costs.

This paper attempts to investigate the effect of firm type and ownership structure on agency costs. The different types of firms such as subsidiaries of wholly owned companies, holding, limited and foreign-owned companies are analysed to identify differences in agency costs. Agency costs are also studied for different levels of ownership ranging from single to more than twenty shareholders. The study uses 75694 currently active companies in UK for

which data are available. Our findings indicate that agency cost is significantly higher in firms with diffuse ownership.

The remainder of the paper is organised as follows. In section 2, we show the evidence from prior studies with regard to agency costs in general. Section 3 describes the data description and our methodology. We present our results in section 4. The final section provides our conclusion.

2. Literature Review

The separation between management and the ownership of the firm forms the basis of agency theory. The role of shareholders becomes more passive while management pursues goals which may not necessarily correspond with those of the shareholders of the firm. The agency relationship has been described as: " a contract under which one or more persons (principal) engage another person (agent) to perform some service on their behalf which involves delegating some decision making authority to the agent " (Jensen and Meckling, 1976). Fama (1980) states agency costs as those arising from the conflict of interest between the principal and the agent. It has often been argued that managers of a firm may make decisions that conflict with the firm's goal to maximise shareholder wealth. Several

examples of costs which stems from this conflict situation include excessive management remuneration, pursuit of sales growth at the expense of profit as well as avoiding investing corporate resources in potentially profitable ventures. If the above costs are observed in a firm, the presence of agency problem can be deduced.

A considerable literature suggests that agency costs can be related to differences in ownership structures. In general, as the number of shareholders increase and share ownership becomes less concentrated, there is less monitoring of managers by shareholders and consequently, lower profitability and productivity. The more ownership in the possession of people not directly involved in the management of the firm, the greater the possibility of conflict. Demsetz and Lehn (1985) build a symmetrical model of ownership and control which state ownership structure will vary in such a manner so as to maximise the value of firm. The more concentrated the ownership, the more the benefits and costs are borne by the same person.

Due to differential agency costs, wholly-owned subsidiaries of foreign firms will perform better than partially-owned subsidiaries (Boardman et. al, 1997). More tightly-held subsidiaries will contribute more to overall corporate profits. Corporate managers are rewarded for maximising profits and so will have an incentive to monitor wholly-owned subsidiaries more than partially-owned subsidiaries.

The agency costs of assuring that managers maximise shareholder wealth are normally larger for multinational companies than for domestic firms. Multinational companies with subsidiaries scattered around the world may experience larger agency problems because it is more difficult to monitor managers of distant subsidiaries in foreign countries. Foreign subsidiary managers raised in different cultures may not follow uniform goals set by the company. Larger multinational companies can also create larger agency problems.

The magnitude of agency costs varies with the management style of the company. A centralised management style can reduce agency costs because it allows managers of the parent to control foreign subsidiaries thereby reducing the power of subsidiary manager. However, the parent's managers may make poor decisions for the subsidiary because they are not as informed as the subsidiary managers. A decentralised management style, on the other hand, may result in higher agency cost if the subsidiary managers make decisions that do not focus on maximising the value of the entire company.

Several attempts have been made to study the effect of ownership structure on the behaviour and performance of firms. These studies find significant differences between diffused and concentrated ownership with respect to firm performance.

Agrawal and Knoeber (1996) examine the use of several mechanisms to control agency problems between managers and shareholders. They find direct empirical evidence of relation between firm performance and insider shareholding, outside directors, debt and corporate control activity. Denis et al, (1997) find that large firms tend to be more diversified and this diversification has been shown to be value destroying. Significant negative relationship between ownership concentration and profitability is reported by Leech and Leahy (1991) who studied 470 UK listed firms. Short and Keasey(1999) in their study report a non-linear relation between managerial ownership and firm value for a sample of UK firms.

Ang, Cole and Wuh Lin (2000) present results stating that agency costs are (i) significantly higher when an outsider rather than an insider manages the firm, (ii) inversely related to the manager's ownership share, (iii) increases with the number of non-manager shareholders, and (iv) to a lesser extent, are lower with greater monitoring by banks. Singh and Davidson (2003) extend the work of Ang et al (2000) to large US corporations and find that managerial ownership is positively related to asset utilisation.

3. Data and Methodology

3.1 Sample

The initial total sample compiled in March 2002 from the Financial Analysis Made Easy (FAME) database was made up of 125953 companies from which we eliminated 50258 companies due to the unavailability of financial data as well as inconsistent shareholder information. This database provides information on the type of firm, ownership structure, financial data and the standard industry codes required for our analysis. The final sample for this study consists of 75694 active UK companies which were then divided into the categories defined in the next section. Non-ultimate holding companies with more than 20 shareholders are excluded from our analysis due to insufficient data.

We define as our base category, independent firms which are not holding companies nor are subsidiaries and have only 1 shareholder. We assume firms which fall into the base category incurs the lowest agency cost because the owner owns 100 percent of the firm and divergence of interest between managers and owners does not exist.

3.2 Definition

In our sample, we include firms ranging from single shareholder to those with more than twenty shareholders. We divide the firms into nine groups based on the type of firm structures as follows:

- (1) **independent with single shareholder:**
Our base category is made up of firms which have no subsidiary and is not a holding company and have a single shareholder. Total number of firms: 6434.
- (2) **single shareholder :**
These firms have only one shareholder. These firms can have subsidiaries and can be holding companies. The shareholder can itself be a holding company. Total number of firms: 32314.
- (3) **ultimate holding with single shareholder :**
A firm with one shareholder and is an ultimate holding company i.e. it is not owned and controlled by anyone else. It can have subsidiaries. Total number of firms: 819.
- (4) **limited with single shareholder :**
Firm with one shareholder and these firms are subsidiaries of quoted public listed companies. Total number of firms: 4385.
- (5) **foreign with single shareholder :**
A firm with one shareholder and these firms are wholly owned subsidiaries of foreign parent. Total number of firms: 4856.
- (6) **single shareholder and not ultimate holding company :**
A firm with only one shareholder and this firm can be controlled by others. This firm may have subsidiaries and it is not an ultimate holding company. Total number of firms: 25087
- (7) **at least ten shareholders and ultimate holding company:**
Firms which have at least ten shareholders and these firms are not controlled by another company. They may have subsidiaries. Total number of firms: 949
- (8) **at least ten shareholders and not ultimate holding company:**
Firms which have at least ten shareholders and these firms are not ultimate holding companies. This means that they can be owned and be controlled by others. Total number of firms: 745.
- (9) **at least twenty shareholders and ultimate holding company :**
Firms which have at least twenty shareholders and these firms are not controlled by another company. They may have subsidiaries. Total number of firms: 105.

3.3 Methodology

We use two alternative efficiency ratios to measure the agency costs. These are similar to ratios used by Ang and Lin (2000). The first ratio is the expense ratio which is used to measure how effective the management controls operating costs. Lower agency

costs should be reflected by a lower expenses-to-sales ratio. Expense ratio is calculated as total expenses divided by sales. Our measure of expenses is slightly different whereby it is derived from the following formula.

$$\text{Operating expense} = \text{gross profit} - \text{interest} - \text{profit before tax} - \text{director's remuneration}$$

The second ratio is the asset utilisation ratio, which is to measure how effectively the assets are being deployed by the management. This is calculated as sales divided by assets or turnover divided by total assets. A large amount of sales that are generated for a given level of asset indicated by high ratio may identify efficient asset management practises. A lower ratio will reflect a considerable agency conflict. A firm experiences positive agency cost if sales-to-assets ratio is lower than the base firm.

4. Results and Analysis

We categorise our sample firms into the core industry sectors following the four-digit UK Standard Industry Code (1992) which is presented in Table I. Our sample show that 31% of firms in the United Kingdom are in the real estate, research, public administration and defence sector. We find the highest concentration of firms with one shareholder in the same sector which also has the highest number of firms which are not ultimate holding.

Insert Table I about here

4.1 Results by type of ownership 4.1.1. Expense to sales ratio

Insert Table II about here

We compare the ratios between the different type of firms and ownership structure to our base category sample. For firms with single shareholder and are holding companies have the highest ratio at 95.8%. In theory, firms with higher expenses to sales ratio have higher agency cost. This result suggest that firms with single shareholder and are holding companies have higher agency cost. Our result also suggest that the more the number of shareholders, the higher the ratio as can be seen for firms with more than 10 shareholders.

Insert Table IIa about here

The ratio of firms with single shareholder is higher than the base sample but the difference in mean is not statistically significant. Firms with single shareholder in the above sample include holding, foreign and limited companies. The result indicate agency cost exist in firms with single shareholder.

Insert Table IIb about here

We find the ratio of ultimate holding firms with single shareholder is higher than the base sample. Ultimate holding firms are firms with no holding companies and since these companies are not controlled by any other, the sole shareholder owns 100 percent of the firm.

Insert Table IIc about here

We define limited companies as subsidiaries of public listed companies and our sample includes only those with single shareholder. We find the ratio higher than the base sample and the difference in means is statistically significant. This result implies that agency cost is higher which maybe due to the unaligned interest between the subsidiary and the parent company.

Insert Table IId about here

The expense-to-sales ratio for our sample of foreign companies is the second highest among all firm types. Our results suggest that single shareholder firms with foreign parents incur significantly high agency costs. These costs are likely to arise due to the geographic and cultural distance from the parent company.

Insert Table IIe about here

Firms which we define as not holding are those which are not ultimate holding companies and they do not have subsidiaries. Our result indicates a lower agency cost which suggests that having single shareholder who maybe a holding company can reduce agency cost.

Insert Table IIf about here

We extend our analysis by including in our sample, ultimate holding firms with at least 10 shareholders. In light of the agency theory, we expect the ratio to be

high and this is confirmed by our result. These firms have higher ratio and are generally less efficient than the base.

Insert Table IIg about here

For firms which are not ultimate holding, the increased number of shareholders produced a higher ratio than the base sample though the increase in agency cost is not statistically significant. This result suggests that agency cost varies with not only with number of shareholders but with the type of firm as well.

Insert Table IIh about here

We find firms with at least twenty shareholders have very high expenses-to-sales ratio which is consistent with previous studies. This result suggests that agency cost increases as the number of shareholder increases.

4.1.2 Sales to assets ratio

Insert Table III about here

All the firms have lower ratio than the base firm which indicates that positive agency costs exists in these firms. We find that firms which are not ultimate holding companies with single shareholder have the highest ratio. According to the agency theory, agency costs should be inversely related to the ownership of the firm. The higher the ratio is, the more effective the firm utilises its assets, thus it is more efficient and has less agency cost.

Insert Table IIIa about here

Asset turnover ratio for firm with single shareholder is lower than our base case, indicating positive agency cost. This result suggests that firms will have less agency problem when the ownership is more concentrated. The owner-manager will not have conflict of interest in managing the firm.

Insert Table IIIb about here

In the above sample, the asset turnover ratio is smaller for holding companies with single shareholder as compared to base, implying that the agency costs are

higher than base. This may suggest that holding company management is less efficient than an owner-manager in asset utilisation.

Insert Table IIIc about here

The asset turnover ratio for limited firms is much lower than the other samples. We defined limited firms as subsidiaries of public listed companies. The low ratio may indicate less efficient asset management and may reflect deployment of assets for unproductive purposes.

Insert Table III d about here

Agency costs associated with international ownership varies according to the parent company. It includes geographical, cultural and institutional differences which affect monitoring. The assets turnover ratio which is slightly higher than the others in our sample shows positive agency cost. This may suggest less efficiency and higher agency cost.

Insert Table IIIe about here

We find the sales to assets ratio significantly high for single shareholder in firms which are not ultimate holding. However this ratio is still lower than the base sample indicating some agency cost. This result is consistent with Table IIe which indicates that these firms have lower expense to sales ratio. Owner-manager of these firms may not have the incentive to pursue their own interest thus reducing the agency cost.

Insert Table III f about here

In general when the number of shareholders increases and ownership becomes less concentrated, agency conflict will increase. This is reflected in our result where ultimate holding firm with at least 10 shareholders has a lower ratio. We compare this with our earlier result of ultimate holding firm with 1 shareholder which show a slightly higher ratio.

Insert Table IIIg about here

Our sample of the above firms with at least 10 shareholders and not ultimate holding companies shows a relatively high asset turnover ratio. Firms

with large number of shareholders do not necessarily indicate lower asset utilisation. This is reflected in our result whereby types of firms contribute to the increase or decrease of agency cost. We find firms which are not ultimate holding seem to show better asset utilization compared to the ultimate holding firms.

Insert Table IIIh about here

Consistent with other studies, our sample of firms with at least 20 shareholders has the lowest ratio. This result implies that assets are not effectively managed in these firms due to higher agency cost. The conflict of interest between the shareholders is much larger due to the diffusion in the firm's ownership.

4.2 Results from multivariate regression

We regress each of our two proxies for agency cost, the ratio of expenses to sales and sales to assets, against ownership and firm structural variation across the sample.

The agency theory states that:

- (i) agency cost increases as the ratio of expenses to sales increases
- (ii) the higher the sales to asset ratio is, the lower the agency cost

The results of our regression analysis relating expense to sales ratio to ownership structure, is presented in table IVa below. The dependent variable is the expense to sales ratio.

Insert Table IVa about here

Column 1 in the above table identifies the explanatory variables. In columns 2 to 9, we analyse each of the structure independently. The results are statistically significant for all the firms and we find positive coefficients for column 3 to 9. The results are highest for firms with single shareholder and are holding companies as indicated in our earlier result in Table IIb. We also find high positive coefficient for firms with more than 20 shareholders and ultimate holding which suggest that the agency cost is higher as ownership is diluted.

In table IVb we present the results of our regression analysis relating sales to assets to ownership structure. The dependent variable is the sales to assets ratio which varies inversely to agency cost.

Insert Table IVb about here

The table is constructed similar to table IVa. We analyse the variables independently and we find negative significant coefficient for seven of the variables. This result suggests that when the sales to asset ratio decreases, the agency cost increases implying that these firms are not efficiently managed. We find firms which are not holding companies with more than 20 shareholders has lower coefficient.

5. Summary and conclusion

Our results are consistent with earlier studies by Jensen and Meckling (1976), Ang et al (2000) and Singh et al (2003) which indicate that agency costs are higher for firms having more than one shareholder. These firms are associated with higher agency costs supporting the theory developed by Jensen and Meckling (1976). The theory stated that at one extreme of ownership are firms whose managers own 100 percent of the firm and these firms have no agency cost.

At the other extreme are firms whose managers are paid employees with no equity in that firm and that the agency costs will be higher. This is because the interests of the firm's managers are not aligned with those of the firm's owners. Agency cost which is an inverse function of ownership will increase as the number of shareholders increases. However, an interesting finding in our result is that type of firm does contribute to the agency costs. Despite the increase in the number of shareholders, firms which are not ultimate holding do not see an increase in agency cost. Future research should explore more of this issue.

Most importantly we find that even for firms with single owner, the type of ownership may influence agency cost. We find firms with foreign parents experience higher expense ratio and lower asset utilisation ratio which are associated with high agency cost. These costs arise because the owner/manager may consume executive perquisites so that the firm purchases unproductive assets such as office furnishing and fancy office space which are difficult to monitor due to the geographic and cultural distance from the parent country. Similarly, single owners that are ultimate holding tend to have higher agency costs. However, single owner and not ultimate holding companies seem to have lower agency cost.

From the above results, we find that agency cost will increase when the ownership of firms becomes diffuse. We also find evidence that even for a single owner firm, agency cost is dependent on the type of

ownership in our study.

References

1. Agrawal and Knoeber, 1996, "Firm performance and mechanisms to control agency problems between managers and shareholders", *Journal of Financial and Quantitative Analysis*, 31, 3, 377-397
2. Ang, Cole and Wuh Lin, 2000, "Agency costs and ownership structure", *The Journal of Finance*, 1, 81-106
3. Boardman, Shapiro and Vining, 1997, "The role of agency costs in explaining the superior performance of foreign MNE subsidiaries", *International Business Review*, 6, 3, 295-317
4. Demsetz and Lehn, 1985, "The structure of corporate ownership: causes and consequences", *Journal of Political Economy*, 93, 6, 1155-1177.
5. Denis, Denis and Sarin, 1997, "Agency problems, equity ownership, and corporate diversification", *Journal of Finance*, 52, 135-160.
6. Fama, 1980, "Agency problems and the theory of the firm", *Journal of Political Economy*, 88, 2, 288-307
7. Jensen and Meckling, 1976, "Theory of the firm: managerial behaviour, agency costs and ownership structure", *Journal of Financial Economics*, 3, 305-360.
8. Leech and Leahy, 1991, "Ownership structure, control type classifications and the performance of large British firms", *The Economic Journal*, 101, 1418-1437.
9. Short and Keasey, 1999, "Managerial ownership and the performance of firms: evidence from the UK", *Journal of Corporate Finance*, 5, 79-101.
10. Singh and Davidson, 2003, "Agency costs, ownership structure and corporate governance mechanisms", *Journal of Banking and Finance*, 27, 793-816.

Appendices

Table I. Number of firms by industry code

Sector	No of firms by ownership structure									
	Percentage	1 shr & independent	1 shr & foreign	1 shr & holding	1 shr & limited	1 shr & not holding	1 shr	10 shr & holding	10 & not holding	20 & holding
Agriculture, forestry and fishing	0.69	69	31	12	5	164	217	9	11	4
Extraction of minerals and ores, manufacture of metals, food, textiles and tobacco	3.37	142	182	14	160	809	1160	61	18	8
Manufacture of wood, chemical, petroleum, rubber, basic metals and fabricated metals	11.89	410	786	86	569	2853	4054	147	67	26
Manufacture of metal goods, engineering, radio, medical, furniture, vehicle and recycling	6.39	199	534	37	258	1572	2128	63	39	4
Electricity, water, gas, construction industry	5.97	429	118	70	231	1577	1985	60	42	7
Sales of motor vehicles, retail sale, wholesale trade and hotels and restaurants	17.65	1064	1071	150	564	4512	5665	176	138	17
Transport and communication	11.32	559	526	78	732	2808	3697	100	58	10
Real estate, research, computer, public administration and defence	30.84	2276	1285	299	1472	7730	9699	264	298	22
Education, health and social work	1.45	75	32	3	50	409	494	18	15	2
Sewage disposal, recreational activities, other service industries	7.31	470	279	58	340	1876	2407	47	51	2
Unidentified	3.13	741	12	12	4	777	808	4	8	3

Table II: Descriptive statistic for sample by expense to sales ratio

	Base	1shr	1shr & hold	1 shr & ltd	1shr & forg	1shr & not hold	>= 10 shr & hold	>= 10 shr & not hold	>= 20 shr & hold
Mean	0.383	0.392	0.958	0.575	0.396	0.368	0.403	0.521	0.705
Median	0.999	0.198	0.960	0.217	0.239	0.921	0.231	0.284	0.250
N	6434	32314	819	4385	4856	25087	949	745	105

IIa: Difference in means of expenses-to-sales ratio between base sample and firms with 1 shareholder

	Base sample	1 shareholder	Difference
Mean	0.383	0.392	-0.009*

*Statistically significant at 5%

IIb: Difference in means of expenses-to-sales ratio between base sample and firms which are holding and with 1 shareholder

	Base sample	1 s/h and holding	Difference
Mean	0.383	0.958	-0.575*

*Statistically significant at 5%

IIc: Difference in means of expenses-to-sales ratio between base sample and firms which are limited with 1 shareholder

	Base sample	1 s/h and limited	Difference
Mean	0.383	0.575	-0.192*

*Statistically significant at 5%

IId: Difference in means of expenses-to-sales ratio between base sample and firms which have foreign parent with 1 shareholder

	Base sample	1 s/h and foreign	Difference
Mean	0.383	0.396	-0.013

*Statistically significant at 5%

IIe: Difference in means of expenses-to-sales ratio between base sample and firms which are not holding with 1 shareholder

	Base sample	1 s/h and not holding	Difference
Mean	0.383	0.368	0.015

*Statistically significant at 5%

IIIf: Difference in means of expenses-to-sales ratio between base sample and firms which are holding with at least 10 shareholders

	Base sample	>=10 s/h and holding	Difference
Mean	0.383	0.403	-0.02

*Statistically significant at 5%

IIg: Difference in means of expenses-to-sales ratio between base sample and firms which are not holding with at least 10 shareholders

	Base sample	>=10 s/h and not holding	Difference
Mean	0.383	0.521	-0.138

*Statistically significant at 5%

IIh: Difference in means of expenses-to-sales ratio between base sample and firms which are holding with at least 20 shareholders

	Base sample	>=20 s/h and holding	Difference
Mean	0.383	0.705	-0.322

*Statistically significant at 5%

Table III: Descriptive statistic for sample by sales to asset ratio

	ctrl	1shr	1shr & hold	1 shr & ltd	1shr & for	1shr & not hold	>= 10 shr & hold	>= 10 shr & not hold	>= 20 shr & hold
Mean	2.313	2.015	1.702	1.575	1.867	2.159	1.557	1.960	1.175
Median	1.705	1.519	1.268	1.065	1.540	1.629	1.387	1.495	0.951
N	6434	32314	819	4285	4856	25087	949	745	105

IIIa: Difference in means of sales-to-assets ratio between base sample and firms with 1 shareholder

	Base sample	1 shareholder	Difference
Mean	2.313	2.015	0.298*

*Statistically significant at 5%

IIIb: Difference in means of sales-to-assets ratio between base sample and firms which are holding with 1 shareholder

	Base sample	1 s/h and holding	Difference
Mean	2.313	1.702	0.611*

*Statistically significant at 5%

IIIc: Difference in means of sales-to-assets ratio between base sample and firms which are limited with 1 shareholder

	Base sample	1 s/h and limited	Difference
Mean	2.313	1.575	0.738*

*Statistically significant at 5%

III d: Difference in means of sales-to-assets ratio between base sample and firms with foreign parents and 1 shareholder

	Base sample	1 s/h and foreign	Difference
Mean	2.313	1.867	0.446*

*Statistically significant at 5%

IIIe: Difference in means of sales-to-assets ratio between base sample and firms with 1 shareholder and not holding companies

	Base sample	1 s/h and not holding	Difference
Mean	2.313	2.159	0.154*

*Statistically significant at 5%

III f: Difference in means of sales-to-assets ratio between base sample and firms with at least 10 shareholders and are holding companies

	Base sample	>=10 s/h and holding	Difference
Mean	2.313	1.557	0.756*

*Statistically significant at 5%

III g: Difference in means of sales-to-assets ratio between base sample and firms with at least 10 shareholders and not holding companies

	Base sample	>=10 s/h and not holding	Difference
Mean	2.313	1.960	0.353*

*Statistically significant at 5%

III h: Difference in means of sales-to-assets ratio between base sample and firms with at least 20 shareholders and are holding companies

	Base sample	>=20 s/h and holding	Difference
Mean	2.313	1.175	1.138*

*Statistically significant at 5%

Table IVa: Regression analysis relating expenses to sales ratio to ownership structure

1	2	3	4	5	6	7	8	9
Intercept	0.414***	0.397***	0.270***	0.224***	0.424***	0.291***	0.295***	0.299***
1 shr	-0.022*							
1 shr & hld		0.562***						
1 shr & ltd			0.305*					
1 shr & for				0.171***				
1 shr & not hld					-0.056***			
>= 10 shr & hld						0.112**		
>= 10 shr & not hld							0.226*	
>= 20 shr & hld								0.314***
R-Sq (adj)	0.0 %	0.003 %	0.05 %	0.02 %	0.01 %	0.01%	0.0 %	0.0 %
F-stat	.7.605** *	235.184** *	329.09** *	110.79** *	46.619** *	10.115** *	32.31***	8.726***

***, **, * indicate statistical significance at the 1, 5 and 10 percent levels respectively.

Table IVb: Regression analysis relating sales to assets ratio to ownership structure

1	2	3	4	5	6	7	8	9
Intercept	2.019***	2.021***	2.047***	2.028***	1.94***	2.024***	2.018***	2.018***
1 shr	-0.004*							
1 shr & hld		-0.319***						
1 shr & ltd			-0.472***					
1 shr & for				-0.162***				
1 shr & not hld					0.222***			
>= 10 shr & hld						-0.466***		
>= 10 shr & not hld							-0.058*	
>= 20 shr & not hld								-0.844***
R-Sq (adj)	0.0 %	0.0 %	0.003%	0.0 %	0.002 %	0.001 %	0.0 %	0.0 %
F-stat	0.048*	17.05***	189.34***	24.52***	163.81***	42.08***	0.507*	15.137***

***, **, * indicate statistical significance at the 1, 5 and 10 percent levels respectively