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Original Paper

Ownership Structure and Firm Performance: Evidence from United Kingdom Listed Companies

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Abstract

The published empirical and analytical corporate governance literatures on the influence of ownership structure on company performance are still controversial. In our study, the correlation between ownership structure and firm performance is explored for 66 non-financial listed companies in UK over period from 2011 to 2015. Meanwhile this paper utilized value of Tobin's q and ROA as the firm performance respectively in order to clarify comprehensive analysis. The results illustrated that institutional ownership does not have impacts on firm performance. Meanwhile, as the widely diffuse ownership structure is common in UK, our study shows that there is no correlation between first largest shareholder and company performance. Moreover this paper found the relation between government ownership and company performance is non-linear. In the final analysis, shareholding by the domestic shareholders is negatively correlated to corporate performance.

Keywords

Firm performance, Ownership structure, OLS regression

1. Introduction

1.1 Background

As one of the primary corporate governance mechanisms, ownership structure has been largely explored in corporate finance study around some questions. However empirical literatures on the impact of ownership structure on firm performance still remain ambiguous (Shi, 2022; Wei & Wang, 2020). In UK, the ownership structure of firms is different from other Continental European partners not only about ownership concentration but also in terms of classification of main shareholders (Ehikioya, 2009). Firstly, the ownership structure of average firms in UK is diffuse. Secondly, compare

with other Continental European list companies dominated by investment group or outside shareholders, some of the British companies dominated by management shareholders (inside shareholders). Meanwhile the impacts of management ownership on firm performance have been investigated in many prior financial literatures. On the one hand, substantial management ownership may incentive to pursue maximization of share price strategies. By contrast, it also may lead to expropriation of other minority shareholders by deriving private benefits from executive positions. Thirdly, the most significant category of shareholders is institutional shareholders. However, the relationship between institutional shareholders and company performance is ambiguous in UK. Someone showed the passive stance on the impacts of institutional shareholders, others showed the active stance. Next differences are in terms of British system of corporate governance, for example: one-tier board structure and the proxy voting. In UK, Cadbury Committee produced corporate governance code which has an important influence on corporate governance standards. For example, in order to reduce managerial discretionary power, the Cadbury Code pays more attention on monitoring role of independent directors and other responsibilities of board of directors. Actually the Code lays down the standards of corporate governance as the guideline to effective board practice. Therefore based on the Cadbury Code, the impacts of ownership structure on firm performance may different with other countries. In general, in UK, the primary agency conflict from ownership structure dispersion is the possible expropriation of shareholders by managements.

The aim of this study is to investigate more in details of the relationship between ownership structure and firm performance. Because numerous prior financial literatures focus on the impacts of management ownership, this paper shifts the focus to the institutional ownership and firm performance. However the lack of literatures investigated relationship between firm performance and government ownership in UK. Besides, considering the importance of foreign investors, which hold a relative large percentage of the aggregate market capitalization in UK, may have the significant influences on firm performance. So that this study also examines how government ownership and foreign ownership can affect firm performance.

2. Literature Review and Hypotheses Development

2.1 Theory

Agency theory: Eisenhardt (1989) points out that agency theory arise from the agent and principal conflict whereby the principals find it difficult to verify the activities of agent. Indeed the aim of firm managers may often focus on their own benefits rather than the interest of shareholders. Sometimes they exert the hostile takeover and ally with powerful shareholders to achieve their goals. Therefore it is necessary for shareholders to monitor the manager behaviors. Nevertheless, the shareholders with the less proportion of shares do not have sufficient incentive to monitor or discipline the management due to the expensive cost. Some of them prefer to be the “free rider” (Shi, 2022). Moreover the agency issues based upon two different kind of incongruence: principal-agent goal incongruence and

principal-principal goal incongruence (Dharwadkar et al., 2000). The former one is always happen in the Anglo-Saxon countries. Meanwhile the latter one is observed in emerging financial market due to expropriation within the weak governance principles when majority or large shareholders obtain their own returns of investment by deprive the right of minority shareholders (Shi, 2022).

Dharwadkar et al. (2000) illustrated the relationship between various ownership structure and performance in two dimensions of ownership magnitude and identity. Meanwhile Shi (2022) summarized the relation in four quadrants. According to Figure 1, the Quadrant 1 shows the influence of outside-shareholders dispersion on performance is moderate due to the facts that information asymmetric issues and expensive coordination costs may mitigate the monitoring ability of shareholders. In the Quadrant 2, the diffuse insider-shareholders ownership may distort the incentive structure as well as have negative influences on monitoring exercise (Sarkar & Sarkar, 2000). So that it can be seen an inferior impacts on firm performance. Moreover, in the Quadrant 3, the impact of inside ownership concentration on the performance is moderate. Because the large numbers of shares held by managers, so that it can mitigate the conflicts of interest between the management and shareholders. However, members of management also have more chances to expropriate from minority shareholders by self-interest trading (Shi, 2022). Additionally, in Quadrant 4, the outside ownership-concentration has superior influence on the performance due to the maximizing of the firm profits, stronger monitoring and the limitation of the expropriation (Allen & Phillips, 2000).

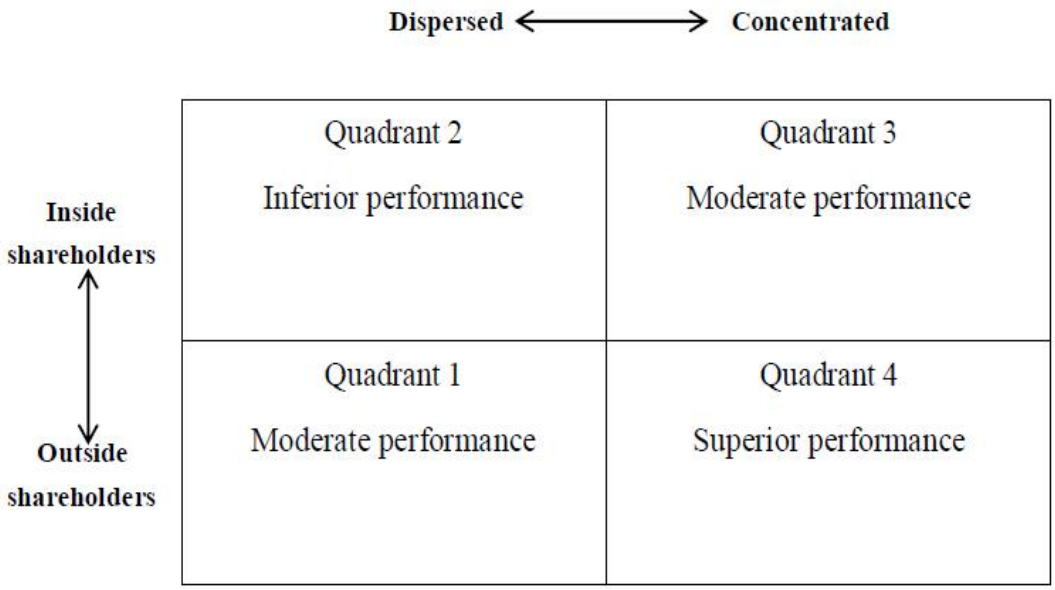

Figure 1. Relation between Various Types of Ownership Structure and Performance

Resource-based theory: Barney (1991) pointed out competitive advantage of company is based upon the possession of intangible and tangible resources. These kinds of resources usually are costly or difficult for other companies to obtain. Moreover, the characteristics of resources must be inimitable,

valuable and un-substitutable, so that the companies can obtain sustain competitive advantages. Meanwhile according to Peteraf (1993), the resource-based theory explains that the various industry conditions cannot be the only reasons for the different profitability of companies. Actually, the different types of the ownership structure have considerable 'resource heterogeneity' so that it can bring the different impacts on the firm performance. No matter the domestic or foreign shareholders, both of them have the various resources endowments and capabilities.

2.2 Ownership Structure and Hypothesis

As one of the corporate governance mechanisms, different types of ownership structure have various impacts on performance (Al-Matari et al., 2013). However some literatures believe there no correlation between the ownership structure and company performance. Meanwhile they point out the property of ownership structure should be considered as an endogeneity which can reflect the preference of shares trading in financial markets (Demsetz & Villalonga, 2001). In other words, the form of ownership structure is based on self-interest stocks traded on the stock market as well as a formation of natural structure. Through the cost-benefit considerations, ownership Structure will reach equilibrium. It is the result of competitive selection. Therefore, whether diffuse or concentrated, the change of ownership structure should reflect the preferences of shareholders on the profit-maximizing interests.

For ownership concentration,in East Asian countries, there is a higher block holder ownership but the weaker protection of minority shareholders. Meanwhile the large shareholders could incentive to stop corporate managers from asset stripping and expropriation (Karaca & Eksi, 2012). So that it has the positive influences on the company performance. However, Holmstrom and Tirole (1993) find the high level of ownership concentration could mitigate the portfolio diversification and decrease the tolerance towards risk of shareholders. Meanwhile there is no a piecewise linear or a linear relationship between the firm performance (measured by accounting-based method) and ownership concentration.

In Britain, the large shareholders are not significantly common. Actually the legal systems, especially the British legal system (common law system) are usually based on fiduciary or fairness duty. Moreover the courts prefer to intervene in self-dealing trades so that it can dismiss the unfair transactions (Coffee, 2000). Obviously, when the regulators or courts are able to enforce the rights of the outside shareholders very well, the investors are always willing to finance the firms. However Leech and Leahy (1991) showed that there has existed the potential shareholding or controlling coalition in the firms of UK. Based above,we prefer to explore the relationship between the shareholding coalition (sum of shareholding by five largest shareholders) and company performance.

Hypothesis 1: *In United Kingdom, there is a relationship between the shareholding by sum of largest five shareholders (shareholding coalition) and company performance but no relationship between the shareholding by the first largest shareholders and company performance.*

Nuryanah and Islam (2011) considers that the large institutional shareholders have more chance, ability and resources to discipline the management. Therefore they have sufficient incentives to monitor the corporate managers than members of board of directors, which has the potential function to mitigate

agency problems. Moreover some literature found that the firm monitoring of institutional shareholders (adopting better accounting polices) can result in the corporate managers have less focusing on self-serving or opportunistic trading but more on firm performance. Hence, shareholding by institutional shareholders has a positive relation with equity value. Additionally, institutional investors can transmit information in the credible environment which can obtain the benefits for both of shareholders and managers.

However the institutional owners also bear the costs when they exert the monitoring activities. One view is that the institutional shareholders have preferred liquidity to control. They point that the goal of institutional shareholders is maintain the liquidity of the shares so that the owners prefer to choose short-term profits rather than the long-term profitability.

The different types of the institutional shareholders have the various effects on the firm performance (Almazon et al., 2005). There are two different types of institutional investors, pressure sensitive institutional shareholders and pressure insensitive institutional shareholders. Moreover the diverse business relation between the institution and firm are the basis of the different monitoring impacts on the governance. Firstly, pressure-sensitive institutional shareholders (including insurances firms and bank) have either latent or existing business relation with companies. Because of protecting of these relations, shareholders have the less willing to challenge decisions of management. On the contrary, the pressure-insensitive institutional investors (including pension and mutual funds) have the lack of business relation with the firms. In order words, these kind of independent investment advisors have less pressure from the companies. So that they have more abilities to against the proposal of managements which result in better suit to discipline, impose control and monitor to the firm managers (Almazan et al., 2005). Under this classification, they point out that the shareholding by pressure-insensitive institutional shareholders has a positive relation with the level of discipline on management. Meanwhile, the pressure insensitive ownership has more positive influences on acquisition decisions (Chen et al., 2007).

In UK, the institutional investors have owned around 70% of the equity markets. Ihe financial institutions has held about 81% of equity, primarily, pension funds account for 15.7%, insurance firms account for 17.2%, additionally, overseas investors account for 32.6%. In spite of the fact that a high proportion of shares in British firms are held by institutions, these sorts of investors cannot discipline management well. At first, although the institutional shareholders hold a large percentage of shares, shareholdings in individual institutions are significant small. For example, shareholding by the largest institutional investors only account for 5.5% averagely. Therefore, the cost of the monitoring always outweighs the benefits of monitoring. Most of the institutional investors prefer to be a ‘free rider’. Secondly, some pressure insensitive shareholders (pension funds and investment firms) pursue the strategies in terms of low-cost passive index. Hence, they would not waste the resources on the monitoring actions due to the mass companies in the portfolio. Actually, most of institutional investors consider chasing cost-efficient, so that they only want to deprive the benefits from firms with poor

performance rather than exert the monitoring function. Therefore, although institutional shareholders always hold a large proportion of total in the British firms, it may have no impact on firm performance. Based above, hypothesis is that:

Hypotheses 2: *In United Kingdom, institutional ownership has no effects on firm performance.*

According to Irina and Nadezhda (2009), the choice of suitable governance mechanism between the managers and owners will guarantee alignment of agent and principal's interest efficiently. For instance, the government ownership should limit the agency issues and have representative on board in order to monitor the activities of managers. Meanwhile, under the agency theory, the government ownership could solve the problems of information asymmetric. Moreover, Eng and Mak (2003) show that government can obtain the information from some other sources and have more convenience channels to finance the financing organizations and other non-state companies. Especially in the Asian countries, they have a relative weak takeover market, high level of concentrated ownership structure and considerable government ownership in some companies. Indeed, in Singapore, the government-linked companies (GLCs) have higher market valuation than the non-government-linked companies due to the reason that GLCs are capable of earning high returns from investment and running more efficient operations than non GLCs (Ang & Ding, 2006). Hence government is primarily focus on the well-being of country. Besides, under resource dependence theory, Pfeffer (1972) point out that government, as a significant outsourcing mechanism, it can help to find the different experience qualification which can decrease the cost of capital and provide effective environment and favorable working.

However, Mak and Li (2001) point out that the government has less incentive to monitor the investment in GLCs. Particularly they have less incentive to adopt robust corporate governance which including less exposure about takeover market, weaker accountability for financial performance, and weaker shareholders monitoring. According to Xu and Wang (1999), the government ownership is negatively correlated to company performance in China. Although the officials of government agency have the right to appoint the members of board, they do not have right to set the board compensation based on the company performance. In general the relevance between the government ownership and company performance is still controversial.

Besides, based on the prior literature, government ownership always account for a small fraction of total shares in British firms. Meanwhile the free market school of thought in the West would argue that governments should not directly set up in business themselves. Therefore our hypothesis is that:

Hypothesis 3: *In United Kingdom, government ownership has no effects on company performance.*

Foreign ownership (especially the foreign banks) has many various influences on the firm profitability (Al-Manaseer et al., 2012). Firstly, foreign shareholders are able to reduce the costs of bank restructuring. Then, Bonin et al. (2005) points out that the foreign banks can provide the superior expertise on the risk management as well as offer superior corporate governance culture which lead to enhance the efficiency. Moreover the foreign bank can develop the competition resulting to induce the

local bank to reduce the cost and improve the bank efficiency. Additionally the high level of foreign ownership can improve the valuation of firm due to the high trust value of the company (NazliAnum, 2010). Moreover, based on the agency theory, the foreign shareholders have greater monitoring capabilities in order to earn the higher returns of investment. Meanwhile they have superior monitoring tools than the local counterparts (Khanna & Palepu, 2000). However the foreign financial shareholders always focus on the liquidity of investment, so that they do not prefer to hold a long-term investment (Coffee, 2000). As the results the foreign ownership is able to associate the interrelationship between the managers and owners. Therefore it can minimize the agency costs. According to Ben-Amar and Andre (2006), they investigated about 320 firms during period from 1998 to 2002 in Canada, they revealed a positive relevance between the foreign ownership and company performance.

Based on the dependence theory, the foreign shareholders have the superior financial, organizational and technical resources. Meanwhile they have some other characters such as technical collaborations, marketing and consultancy arrangements, managerial resource sharing, trademarks and the like (Dhar 1988). Therefore, the hypothesis is that:

Hypothesis 4: *In United Kingdom, foreign ownership is positively correlated to company performance.*

3. Data and Methodology

3.1 Main Variables

In this study, based on Dey and Banerjee (2011) to use both of the Tobin's q and ROA as the performance measurement. Tobin's q (denoted as TOBINQ) is calculated as:

$$\text{Tobin's q} = \frac{Equity\ Market\ Value + Liabilities\ Market\ Value}{Equity\ Book\ Value + Liabilities\ Book\ Value}$$

ROA (denoted as ROA) is calculated as:

$$\text{Returen on Assets Ratio} = \frac{Net\ Income}{Average\ Total\ Assets}$$

This study divided ownership structure into ownership concentration, government ownership, institutional ownership and foreign ownership structure.

In this study, we consider how largest shareholder affects the firm performance. Therefore we investigate the each largest shareholder from firms and denoted as LS. And investigate sum of shares proportion held by the five largest shareholders as well as denoted as FIVEHOLD.

Institutional ownership structure can be classified into pressure sensitive institutional shareholders (including banks and insurance companies) and pressure insensitive institutional shareholders (including investment company, mutual fund and pension fund). In this study, we defined the pressure sensitive investors as the sum of proportion of shares hold by the bank and insurance companies and denoted as PSEN. Meanwhile the sum of proportion of shares held by investment companies (pressure insensitive investors) is denoted as PINSEN. In addition, we denoted the institutional shareholders (sum of shareholding by pressure sensitive and pressure insensitive institutional investors) as IS.

Besides the fraction of shares held by government is the government ownership and denoted as GOVER. In addition, this paper tries to find the relevance between foreign ownership and company performance. This study collects data of shareholding by investors of other foreign countries outsider UK as the foreign ownership and denoted as FOREIGN. Meanwhile as the comparison, we also consider to explore the how domestic ownership affect the company performance. So that we defined the proportion of shares holding by British investors as the domestic ownership and denoted as DOMESTIC.

3.2 Control Variables

According to prior financial literatures, some other corporate governance mechanisms have ability to mitigate manager-shareholders conflict and limit the managerial discretion. So that we prefer to use these mechanisms as the control variables which including the board size (Tran & Le, 2020), percent of independent directors on the boards (Duchin et al., 2010) and CEO's pay-performance sensitivity (Jensen & Murphy, 1990). Besides, the specific firm's characteristics also have the influences on company performance; so that financial leverage (Demsetz & Villalonga, 2001) and firm size (Konijn et al., 2011) is also utilized as the control variables.

Board Size is calculated by total numbers of directors,which is donated as BOARD.

Percent of Independent Directors on Board is calculated by the numbers of independent directors divided by board size as well as denoted as INDEP.

CEO's Pay-performance Sensitivity is measured by created the dummy variables. If the CEO compensation connects with shareholders wealth, it equals 1. If there is no links equals 0. This variable is donated as PFS.

Financial Leverage is calculated as the book value of total debt divided by book value of total assets as well as denoted as LEVERAGE.

Firm Size is calculated as natural log of total assets as well as it is denoted as FSIZE.

4. Data and Methodology

4.1 Sample Selection

Data collected for our study were derived from a number of sources. The companies we chose are listed in Financial Times Stock Exchange 100 Index (FTSE 100). Meanwhile FTSE 100 consists of the largest 100 qualifying UK firms by full market value. Moreover firms in FTSE 100 represent approximate 80% of the whole market capitalization of London Stock Exchange (LSE). However the sample we select just include non-financial firms for the reason that the financial sectors is characterized by a huge cash flow as well as the regulation and pricing model of financial sectors is different with other sectors. So that it is not considered comparable between the financial and non-financial firms. Finally we select 66 firms from FTSE 100 companies. Meanwhile the time period in this study is from 2011 to 2015. There are two reasons to select this time period. Firstly, based on the Keynes Economic Cycle Theory, period from three to five year is an economic cycle. Secondly, this

period sample avoids the impacts of financial crisis from 2007 to 2010. Moreover the data in terms of the ownership structure and some other financial data are collected from the Database. Besides, the control variables such as independent percentage on board and board size are collected from the financial annual reports of each company.

4.2 Descriptive Statistics

Table 1 shows the data in term of two performance measurement, Tobin's q and ROA respectively. The mean value of Tobin's q from 2011 to 2015 is 1.4421. That demonstrates that the sample companies have a high evaluation. Meanwhile the mean value of Tobin's in every year is above 1, implying that replacement cost of firms is less valuable than their market value. In addition, it can be seen that after experienced an increase from 2011 to 2014, the Tobin's q decrease to 1.3833 in 2015. The reason of this phenomenon is maybe the recession of the world economic environment in 2015. Compare with the Tobin's q, the change from 2011 to 2015 in term of the mean value of ROA is relative fluctuated around 9.86%. The investors always use ROA as the index to test how many benefits are generated from invested capital. Meanwhile in the public firms, ROA maybe vary substantially and will be highly dependent on the industry. So that the investor could make wise choices in allocating resources based on ROA. In addition the change trend of Tobin's q is inconsistent with ROA, this result means they have difference reaction between the forward-looking and backward-looking measurement.

Table 1. Descriptive Statistics for Firm Performance Measurement

TOBINQ					
Year	Observations	Minimum	Maximum	Mean	Std. dev
2011	64	0.17	6.16	1.241	1.149
2012	64	0.22	7.23	1.318	1.241
2013	65	0.2	9.39	1.602	1.556
2014	65	0.24	11.18	1.656	1.697
2015	60	0.12	6.89	1.383	1.135
Five years	318	0.12	11.18	1.442	1.380
ROA					
Year	Observations	Minimum	Maximum	Mean	Std. dev
2011	64	-0.002	0.337	0.110	0.069
2012	64	-0.041	0.452	0.105	0.078
2013	65	-0.056	0.455	0.097	0.081
2014	65	-0.038	0.441	0.099	0.080
2015	60	-0.174	0.375	0.081	0.098
Five years	318	-0.174	0.455	0.099	0.082

Table 2. Descriptive Statistics for Ownership Variables

Variable	Observations	Minimum	Maximum	Mean	Std. dev
IS	318	0.016	0.972	0.517	0.218
PSEN	318	0.008	0.651	0.351	0.149
PINSEN	318	0.008	0.583	0.166	0.105
GOVERN	318	0.000	0.100	0.026	0.021
LS	318	0.002	0.391	0.084	0.056
FIVEHOLD	318	0.060	0.546	0.219	0.080
DOMESTIC	318	0.000	0.491	0.166	0.106
FOREIGN	318	0.008	0.860	0.423	0.181

Next Table 2, 3, 4 show the shareholding by the different types of investors. Table 2 is the overall of the ownership structure in UK. It can be seen that institutional shareholders are account for the largest share proportion, 51.7%. Moreover the shares held by pressure sensitive institutional shareholders are 35.1% which is about two times than the pressure insensitive institutional shareholders. It is worth noting that there is a low degree of ownership concentration in UK. The largest shareholders own 8.4% of equity on the average. In order to achieve controlling power, it is necessary to build shareholder coalition in British firms. It can be seen that the shareholding by largest five shareholders are account for 21.9% on average. As a matter of fact it is still relatively lower than the major shareholders in other countries. Moreover the shareholding by government is only 2.6% on average. Besides, the foreign ownership also account for a large numbers of equities, 42.3%, which is the second largest ownership in UK. However the local investors in UK are represent 16.6% of equity averagely.

Table 3. Descriptive Statistics for Ownership Variables in Each Year

IS					
Year	Observations	Minimum	Maximum	Mean	Std. dev
2011	64	0.020	0.828	0.447	0.160
2012	64	0.016	0.844	0.478	0.222
2013	65	0.018	0.832	0.483	0.184
2014	65	0.025	0.774	0.438	0.202
2015	60	0.280	0.972	0.756	0.147
PSEN					
Year	Observations	Minimum	Maximum	Mean	Std. dev
2011	64	0.009	0.624	0.314	0.129
2012	64	0.008	0.651	0.340	0.171
2013	65	0.010	0.556	0.336	0.144

2014	65	0.017	0.588	0.316	0.154
2015	60	0.163	0.605	0.454	0.092
PINSEN					
Year	Observations	Minimum	Maximum	Mean	Std. dev
2011	64	0.008	0.461	0.133	0.074
2012	64	0.008	0.275	0.137	0.080
2013	65	0.008	0.422	0.147	0.077
2014	65	0.008	0.313	0.122	0.073
2015	60	0.047	0.583	0.302	0.105
GOVERN					
Year	Observations	Minimum	Maximum	Mean	Std. dev
2011	64	0.000	0.059	0.025	0.016
2012	64	0.000	0.100	0.031	0.023
2013	65	0.000	0.086	0.032	0.020
2014	65	0.000	0.096	0.034	0.025
2015	60	0.000	0.012	0.007	0.003

According Table 3 and Table 4, they show more details about the change od shareholder ownership during the period from 2011 to 2015. It is obvious that there is a significant change in terms of institutional shareholders from 2014 to 2015. The shareholdings by institutional shareholders have increased dramatically from 43.8% to 75.6%. Besides, other data has changed gradually.

Table 4. Descriptive Statistics for Ownership Variables in Each Year

LS					
Year	Observations	Minimum	Maximum	Mean	Std. dev
2011	64	0.017	0.380	0.085	0.050
2012	64	0.035	0.380	0.097	0.060
2013	65	0.002	0.209	0.077	0.036
2014	65	0.006	0.288	0.071	0.039
2015	60	0.002	0.391	0.092	0.081
FIVEHOLD					
Year	Observations	Minimum	Maximum	Mean	Std. dev
2011	64	0.097	0.439	0.225	0.070
2012	64	0.119	0.525	0.238	0.077
2013	65	0.060	0.384	0.220	0.066
2014	65	0.064	0.503	0.198	0.066

2015	60	0.060	0.546	0.216	0.113
DOMESTIC					
Year	Observations	Minimum	Maximum	Mean	Std. dev
2011	64	0.008	0.394	0.136	0.091
2012	64	0.000	0.412	0.155	0.105
2013	65	0.000	0.392	0.142	0.081
2014	65	0.000	0.339	0.141	0.093
2015	60	0.040	0.491	0.264	0.104
FOREIGN					
Year	Observations	Minimum	Maximum	Mean	Std. dev
2011	64	0.009	0.707	0.355	0.137
2012	64	0.008	0.645	0.390	0.170
2013	65	0.012	0.733	0.404	0.157
2014	65	0.011	0.669	0.351	0.171
2015	60	0.399	0.860	0.626	0.113

In addition, Table 5 illustrates the information in terms of the control variables. The board size is not small in the UK firms. Meanwhile the percent of independent on the board represents at 58.3% on average, so that the proportion of independent directors on board is over half of board size. A high level of proportion of outside directors may have impacts on firm performance.

Table 5. Descriptive Statistics for Control Variables

Variable	Observations	Minimum	Maximum	Mean	Std. dev
BOARD	318	4.000	21.000	10.870	2.384
INDEP	318	0.047	0.908	0.583	0.155
FSIZE	318	13.435	19.469	16.001	1.333
LEVERAGE	318	0.000	62.065	22.984	13.261
PFS	318	0.000	1.000	0.820	0.384

4.3 Methodology

The Pooled Ordinary Least Squares (OLS) regression model is employed. Then this study use both Fixed Effects and Random Effects Model later. However, there is an implied assumption illustrate on the occasion of using the OLS estimation method, the primary explanatory variables should not have correlation with each another. Therefore we should test the correlation between the dependent variables at first.

After develop the correlation coefficients among independent variables, the result shows that there exists multicollinearity among the explanatory variables in the sample. In order to remain precision of regression results, we need run the primary explanatory variables in the model separately.

4.3.1 Empirical Model

We take firm performance (utilize both of Tobin's q and ROA as the measurement) at the end of fiscal year as the dependent variable and various types of ownership as dependent variables. In addition model also concludes control variables and year dummies.

Generalized Equation is given below:

$$Performance_{i,t} = \alpha + \beta_1 (Ownership\ variables)_{i,t} + \beta_2 (Control\ variables)_{i,t} + \beta_3 (Year\ dummies)_{i,t} + \varepsilon_{i,t}$$

Where year dummies including year dummy YEAR12, YEAR13, YEAR14 and YEAR15.

However in order to avoid the multicollinearity problem, we should construct eight separate regression models among the different types of ownership structure.

Model 1: Institutional ownership and firm performance

$$Performance_{i,t} = \alpha + \beta_1 IS_{i,t} + \beta_2 BOARD_{i,t} + \beta_3 INDEP_{i,t} + \beta_4 LEVERAGE_{i,t} + \beta_5 FSIZE_{i,t} + \beta_6 PFS_{i,t} + \beta_7 (Year\ dummies)_{i,t} + \varepsilon_{i,t}$$

Where Performance is the value of Tobin's q or ROA by company i in period t. is institutional shareholding of company i in period t. is the board size of company i in period t. is the percentage of independent directors on board. is the company leverage. is natural log of total assets of firm. is CEO's pay-performance sensitivity.

Model 2: Institutional pressure-sensitive shareholding and firm performance

$$Performance_{i,t} = \alpha + \beta_1 PSEN_{i,t} + \beta_2 BOARD_{i,t} + \beta_3 INDEP_{i,t} + \beta_4 LEVERAGE_{i,t} + \beta_5 FSIZE_{i,t} + \beta_6 PFS_{i,t} + \beta_7 (Year\ dummies)_{i,t} + \varepsilon_{i,t}$$

Model 3: Institutional pressure-insensitive shareholding and firm performance

$$Performance_{i,t} = \alpha + \beta_1 PISEN_{i,t} + \beta_2 BOARD_{i,t} + \beta_3 INDEP_{i,t} + \beta_4 LEVERAGE_{i,t} + \beta_5 FSIZE_{i,t} + \beta_6 PFS_{i,t} + \beta_7 (Year\ dummies)_{i,t} + \varepsilon_{i,t}$$

Model 4: Top first largest shareholding and firm performance

$$Performance_{i,t} = \alpha + \beta_1 LS_{i,t} + \beta_2 BOARD_{i,t} + \beta_3 INDEP_{i,t} + \beta_4 LEVERAGE_{i,t} + \beta_5 FSIZE_{i,t} + \beta_6 PFS_{i,t} + \beta_7 (Year\ dummies)_{i,t} + \varepsilon_{i,t}$$

Model 5: Five largest shareholding and firm performance

$$Performance_{i,t} = \alpha + \beta_1 FIVEHOLD_{i,t} + \beta_2 BOARD_{i,t} + \beta_3 INDEP_{i,t} + \beta_4 LEVERAGE_{i,t} + \beta_5 FSIZE_{i,t} + \beta_6 PFS_{i,t} + \beta_7 (Year\ dummies)_{i,t} + \varepsilon_{i,t}$$

Model 6: Government ownership and firm performance

$$Performance_{i,t} = \alpha + \beta_1 GOVERN_{i,t} + \beta_2 BOARD_{i,t} + \beta_3 INDEP_{i,t} + \beta_4 LEVERAGE_{i,t} + \beta_5 FSIZE_{i,t} + \beta_6 PFS_{i,t} + \beta_7 (Year\ dummies)_{i,t} + \varepsilon_{i,t}$$

Model 7: Domestic shareholding and firm performance

$$Performance_{i,t} = \alpha + \beta_1 DOMESTIC_{i,t} + \beta_2 BOARD_{i,t} + \beta_3 INDEP_{i,t} + \beta_4 LEVERAGE_{i,t} + \beta_5 FSIZE_{i,t} + \beta_6 PFS_{i,t} + \beta_7 (Year\ dummies)_{i,t} + \varepsilon_{i,t}$$

Model 8: Foreign ownership and firm performance

$$Performance_{i,t} = \alpha + \beta_1 FOREIGN_{i,t} + \beta_2 BOARD_{i,t} + \beta_3 INDEP_{i,t} + \beta_4 LEVERAGE_{i,t} + \beta_5 FSIZE_{i,t} + \beta_6 PFS_{i,t} + \beta_7 (Year\ dummies)_{i,t} + \varepsilon_{i,t}$$

4.3.2 Selection of Regression Model: Fixed Effects Model or Random Effects Model

Firstly, this study use pooled OLS regression to find the impact of ownership structure on company performance. Although we have already omitted the outliers, pooling the data in this way assumes that the average values of variables as well as the constant relationship cross cross-sectional units and over time in entire sample. Therefore the results of the OLS regression may be biased.

Therefore Fixed Effected or Random Effects Model is another method to solve this problem. However, the use of either Fixed Effects or Random Effects Model hinges on whether the error components of cross-section are correlated with the independent variables. If they are correlated, use of Fixed Effects Model would be more appropriate. In order to test this, we utilize Hausman Test for cross-section random effects. However, the frim performance is measured by Tobin's q and ROA respectively. Therefore we should do the tests with difference dependent variables. At first, when the performance is measured by Tobin's q, we found the p value for cross-section random in Hausman Test is 0.2128, which is insignificant. So that the result accepts the null hypothesis: Random Effects Model is more appropriate. Therefore we use Random Effects Model when the dependent variable is Tobin's q. Then we found p value is 0.0027 in the Hausman Test when the performance is measured by ROA. It is obvious significant at 1% level. Hence, Fixed Effects Model is more appropriate when the dependent variable is ROA. Therefore we utilize both Random Effect Model and Fixed Effect Model with the difference performance measurement in order to robust the results from OLS regression.

5. Empirical Results and Discussion

5.1 Institutional Ownership and Firm Performance

Table 6 illustrates the Pooled OLS Regression results of the relation between institutional ownership and firm performance. Firstly, we analyze results on occasion of using Tobin's q as performance measurement. Column 1 illustrates that an insignificant relation between institutional ownership and company performance. This result supports the Hypothesis 2. Actually, the outcome is coherent with Goergen and Renneboog (1998), institutional shareholders in UK tend not to effectively exercise voting power. Meanwhile, Short and Keansey (1999) shows that institutional shareholders play no role in determining company value. The primary reason for that is institutional shareholders in UK faces no legal barriers on stock ownership. Therefore it may limit ability of shareholders to control managers due to the lack of activism.

Besides, classification of pressure insensitive institutional shareholders and pressure sensitive institutional shareholders is discussed in the Section 2. According to Brickley et al, 1994, these two

groups have different influences on firm performance. According to column 2 and 3, while pressure-sensitive investors have insignificant correlation with firm performance, pressure-insensitive investors is significantly correlated to company performance at 5% level. Meanwhile the coefficient is 1.672 which means a positive relation between them. The former finding for the reason that pressure-sensitive investor have less effect on monitoring management. If they vote against management, they would bear the risk of damaging potential business relation with firm. Sometimes they choose to compromise with decisions of managers. Another existing distinction between two types of institutional shareholders is their preference on selling shares when the frim performance is not satisfied. Pressure-sensitive shareholders are reluctant to sell shares already held. By contrast, pressure-insensitive investors inclined to bail out from the hard time. On the occasion of share selling, they have many influences on the CEO turnover and followed by improvement of firm performance. Moreover, the later institutional shareholders, as independent investment advisors, they have more abilities to against the proposal of managements which result in better suit to discipline, impose control and monitor to the firm managers due to the weaker business relation with companies. Hence, pressure insensitive institutional shareholders are positively correlated to company performance.

A part from that, in regard to the control variables, four of control variables (firm size, percentage of independent directors on board, leverage and board size) have significant correlation with firm performance. Practically, board size, leverage and firm size is significant at 1% level. Moreover the firm size is negatively correlated to performance. This finding is coherent with De Miguel and Pindado (2001), large firm have more agency issues and bad performance due to severe information asymmetry. However there is a positive impact of board size on company performance, which is different with prior literature (Yermack, 1996). Besides, the percentage of dependent directors on board is positively correlated to company performance. Therefore the outside-dominated boards always have the better management monitoring than inside-dominated.

Additionally, it can be seen a positive relevance between the year 2013 and 2014 and firm performance. Indeed, economy of developed countries has tended to improve. Meanwhile the economy of major developed economies has growth gradually. Moreover, the economic recovery in US is relatively stable, which become to be the major driving force of world economic growth.

Regarding the firm performance measured by ROA. All of the institutional ownership including total institutional shareholders, pressure-sensitive and pressure-insensitive shareholders are insignificant correlated to firm performance. Same with above, some control variables (firm size, percentage of independent directors on board, leverage and board size) significantly correlated to firm performance. However the CEO's pay-performance sensitivity is insignificant with different firm performance. Besides, there is a negative relation between the influence of YEAR15 and firm performance.

Overall, the primary difference between the two measurements of firm performance is shareholding by pressure-insensitive institutional investor. Actually, the investor is pays more attention to the market value of firm rather than the book value. Moreover the R-squared between two measurements is range

from 0.308 to 317 and range from 0.194 to 0.198 respectively. So that the independent variables in former one using Tobin's q as performance measurement) are fit well with model. Therefore the results of former one is more credible.

Table 7 illustrates the results of the Random Effects Model and Fixed Effects Model with Tobin's q and ROA respectively. After random cross-section, institutional ownership (including pressure sensitive and pressure insensitive institutional shareholders) is insignificantly correlated to company performance which using Tobin's q as measurement. Particularly, the results of column 3 of table 7 are inconsistent with the results of column 3 of table 6. In Random Effects Model, the unobserved component have no correlation with variables. Meanwhile it assumes that intercepts are change with the various firms and period. Moreover effects are random if there is interest in the underlying population. Therefore these kinds of unobserved heterogeneity may have the influences on the results. Additionally, the percentage of independent directors on board has no relevance with firm performance anymore, which is different with the results of pooled OLS regression.

Besides, regarding to the column 4, 5 and 6 of table 7, after fixed the cross-section effects, there is still has no relationship between the institutional ownership (including pressure-sensitive shareholders and pressure-insensitive shareholders) and firm performance measured by ROA. Additionally, as control variables, firm size and board size have no relationship with firm performance. These results are not surprising under firm fixed effect because of the fact that these control variables may only have little within-company variation. Meanwhile it also reflected the cross-section fixed effect for the reason that our sample including the large companies, so that with the large scale of firm, the variation in size do not have incremental influences on firm performance.

Table 6. Pooled OLS Estimation about Institutional Ownership

Variable	TOBINQ 1	TOBINQ 2	TOBINQ 3	ROA 4	ROA 5	ROA 6
IS	0.162			2.670		
	(0.658)			(0.251)		
PSEN		-0.281			3.037	
		(0.556)			(0.210)	
PISEN			1.672**			2.266
			(0.042)			(0.668)
BOARD	0.138***	0.135***	0.136***	0.854***	0.216***	0.834***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
INDEP	0.835*	0.828*	0.864*	12.184***	2.938***	12.150***
	(0.071)	(0.074)	(0.060)	(0.000)	(0.000)	(0.000)

LEVERAGE	-0.015***	-0.015***	-0.014***	-0.054*	0.032*	-0.055*
	(0.004)	(0.003)	(0.006)	(0.094)	(0.087)	(0.091)
PFS	0.123	0.158	0.099	-1.294	1.180	-1.100
	(0.507)	(0.395)	(0.589)	(0.274)	(0.267)	(0.348)
FSIZE	-0.641***	-0.641***	-0.623***	-3.055***	0.392***	-3.048***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
YEAR12	0.122	0.135	0.118	-0.331	1.316	-0.257
	(0.554)	(0.514)	(0.565)	(0.802)	(0.793)	(0.845)
YEAR13	0.424**	0.437**	0.404*	-1.152	1.312	-1.082
	(0.041)	(0.035)	(0.050)	(0.382)	(0.388)	(0.412)
YEAR14	0.549***	0.554***	0.558***	-0.822	1.331	-0.785
	(0.009)	(0.008)	(0.008)	(0.537)	(0.523)	(0.557)
YEAR15	0.060	0.155	-0.176	-4.247***	1.424***	-3.774**
	(0.804)	(0.489)	(0.489)	(0.006)	(0.006)	(0.021)
R-squared	0.308	0.309	0.317	0.197	0.198	0.194
F-statistic	13.689	13.710	14.260	7.527	7.559	7.386
Observations	318	318	318	318	318	318

Notes. This table presents the results of Pooled OLS regression of panel data. The dependent variables are Tobin's q and ROA for firm i in year t respectively. p-values are in parentheses. *, **, *** represent significance at 10%, 5%, and 1% levels, respectively.

Table 7. Random Effects Model with Tobin's q as dependent Variable and Fixed Effects Model with ROA as Dependent Variable

Variables	TOBINQ 1	TOBINQ 2	TOBINQ 3	ROA 4	ROA 5	ROA 6
IS	-0.296			0.630		
	(0.206)			(0.739)		
PSEN		-0.537			1.888	
		(0.103)			(0.483)	
PINSEN			-0.095			-1.227
			(0.843)			(0.747)
BOARD	0.070**	0.070**	0.071**	0.292	0.289	0.296
	(0.012)	(0.013)	(0.012)	(0.214)	(0.219)	(0.208)
INDEP	0.166	0.152	0.185	5.789**	5.856**	5.781**
	(0.623)	(0.653)	(0.585)	(0.039)	(0.037)	(0.039)

LEVERAGE	-0.031***	-0.031***	-0.030***	-0.406***	-0.404***	-0.408***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
PFS	0.137	0.142	0.121	-1.018	-1.052	-0.966
	(0.371)	(0.353)	(0.429)	(0.433)	(0.418)	(0.456)
FSIZE	-0.507***	-0.502***	-0.512***	2.533	2.451	2.669
	(0.000)	(0.000)	(0.000)	(0.276)	(0.291)	(0.249)
YEAR12	0.147	0.152	0.138	-0.364	-0.393	-0.341
	(0.144)	(0.131)	(0.172)	(0.648)	(0.622)	(0.668)
YEAR13	0.430***	0.432***	0.419***	-1.332	-1.353*	-1.296
	(0.000)	(0.000)	(0.000)	(0.100)	(0.094)	(0.109)
YEAR14	0.556***	0.563***	0.552***	-1.070	-1.089	-1.090
	(0.000)	(0.000)	(0.000)	(0.226)	(0.218)	(0.219)
YEAR15	0.225*	0.208*	0.149	-4.319***	-4.377***	-3.940***
	(0.080)	(0.071)	(0.265)	(0.000)	(0.000)	(0.000)
R-squared	0.213	0.213	0.208	0.776	0.776	0.776
F-statistic	8.309	8.309	8.046	10.987	11.010	10.987
Observations	318	318	318	318	318	318

Notes. Regressions are estimated with random effects and fixed firm effects of panel data. The first dependent variable is Tobin's q for firm i in year t. Regressions are estimated with random effects of panel data. Meanwhile the second dependent variable is ROA for firm i in year t. p-values are in parentheses. *, **, *** represent significance at 10%, 5%, and 1% levels, respectively.

5.2 Government Ownership and Ownership Concentration

According to column 1 of table 8, shareholdings by the largest shareholders do not have influences on firm performance (using Tobin's q as measurement). This result support the part of Hypothesis 1. In section 4, we illustrates the average percentage of shareholding by the largest shareholders is only 8.4% (Table 2) during the period from 2011 to 2015. This result is in significant contrast with major shareholders in Continental Europe countries (Franks and Mayer, 1997). If ownership is widely dispersed, the structure of share ownership may not play a significant role in determining firm performance because of the fact that there is no individual have a strong voting power or the incentive to enforce profit maximization and exercise control management. On the occasion of ownership dispersed dramatically, the firm performance and behavior are affected seriously by managerial discretion to purse their own benefits or other goals at the expenses of shareholders. Therefore, the shareholding by largest shareholders in UK does not have the influences on firm performance.

However, Berle and Means (2000) point that there is an explanation in which shareholding dispersion have ability to affect the behavior of firm. Firstly, when the managers own shares they are also the

largest shareholders, so that the interests of shareholders and management coincide as well as the firm may maximize welfare of shareholders. On the other hand, with the shareholder dispersion, management has the control through its ownership of a relatively small but absolutely large number of shares, the firm performance would be affected directly. Under this situation, since the percentage of shares held beneficially by managers is declined, the association between the shareholder welfare and management welfare is weakened, in other words, there would be an interest divergence.

Moreover, based on the high level of ownership dispersion, the existence of a shareholders coalition should be required in order to remain the controlling power. The column 2 of table 8 shows that shareholding by sum of five largest shareholders is also insignificant with firm performance. This is inconsistent with the Hypothesis 1. Meanwhile this result is different with some prior literatures Leech and Leady (1991), they found the shareholders coalition has the strong voting power to affect the firm performance. However, tale 2 illustrates that shareholding by sum of largest five shareholders is only represent 21.9% averagely in UK firms from 2011 to 2015. The proportion of shares by shareholder coalition may too small to control the company in our sample.

Besides, column 3 of table 8 illustrates government ownership has no influence on company performance, which is in accordance with the Hypothesis 3. Firstly, reason is can be seen from table 2, shareholding by government is only 2.6% averagely in UK firms. Indeed, the state-owned enterprises are uncommon in UK. Meanwhile, state ownership always focuses on the political and social goals rather than the maximization of company value. Moreover, in UK, numbers of financial literatures in terms of investigation the relation between performance and government ownership are not too much. However, in other countries, some researchers found a U-shape relation between state ownership and performance. Therefore we have further investigation in the next part.

Regarding to the Pooled OLS regression with performance measured by ROA. There is the similar result with former. Shareholding by large shareholders does not have effect on firm performance. Meanwhile the shareholding by sum of five largest shareholders has insignificant correlation with company performance. Moreover, it is can be seen that government ownership still has no influence on company performance.

According to table 9, it illustrates the results with cross-section random effect (using Tobin's q as measurement) as well as cross-section fixed effect (performance measured by ROA) separately. Shareholding by the largest shareholders and sum of largest five shareholders still has no correlation with the firm performance. Meanwhile the government ownership is insignificant with firm performance.

Table 8. Pooled OLS regression Estimation about Shareholding by First Largest Shareholders, Sum of Five Largest Shareholders and Government Ownership

Variables	TOBINQ 1	TOBINQ 2	TOBINQ 3	ROA 4	ROA 5	ROA 6
LS	-1.785			-2.501		
	(0.138)			(0.745)		
FIVEHOLD		-0.772			-3.182	
		(0.358)			(0.553)	
GOVERN			2.584			34.284
			(0.460)			(0.124)
BOARD	0.138***	0.136***	0.136***	0.836***	0.831***	0.831***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
INDEP	0.847*	0.830*	0.827*	12.127***	12.101***	12.053***
	(0.067)	(0.073)	(0.074)	(0.000)	(0.000)	(0.000)
LEVERAGE	-0.014***	-0.015***	-0.015***	-0.055*	-0.056*	-0.054*
	(0.004)	(0.004)	(0.004)	(0.087)	(0.084)	(0.095)
PFS	0.146	0.153	0.132	-1.035	-0.987	-1.126
	(0.422)	(0.405)	(0.469)	(0.375)	(0.398)	(0.333)
FSIZE	-0.651***	-0.647***	-0.646***	-3.086***	-3.095***	-3.127***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
YEAR12	0.151	0.138	0.111	-0.212	-0.201	-0.471
	(0.465)	(0.504)	(0.595)	(0.873)	(0.879)	(0.722)
YEAR13	0.418**	0.428**	0.412**	-1.063	-1.057	-1.287
	(0.042)	(0.038)	(0.047)	(0.420)	(0.421)	(0.330)
YEAR14	0.528**	0.533**	0.524**	-0.827	-0.867	-1.143
	(0.012)	(0.012)	(0.014)	(0.537)	(0.518)	(0.397)
YEAR15	0.128	0.108	0.158	-3.362**	-3.403**	-2.784**
	(0.546)	(0.611)	(0.475)	(0.014)	(0.012)	(0.048)
R-squared	0.313	0.310	0.309	0.194	0.194	0.200
F-statistic	13.980	13.783	13.739	7.377	7.407	7.659
Observations	318	318	318	318	318	318

Note. This table presents the results of Pooled OLS regression of panel data. The dependent variables are Tobin's q and ROA for firm i in year t respectively. p-values are in parentheses. *, **, *** represent significance at 10%, 5%, and 1% levels, respectively.

Table 9. Random Effects Model with Tobin's q as Dependent Variable and Fixed Effects Model with ROA as Dependent Variable

Variables	TOBINQ 1	TOBINQ 2	TOBINQ 3	ROA 4	ROA 5	ROA 6
LS	-0.199			-10.041		
	(0.798)			(0.110)		
FIVEHOLD		0.194			-6.413	
		(0.699)			(0.109)	
GOVERN			0.153			28.847
			(0.945)			(0.101)
BOARD	0.070**	0.069**	0.069**	0.311	0.303	0.255
	(0.013)	(0.014)	(0.015)	(0.184)	(0.195)	(0.277)
INDEP	0.188	0.179	0.182	6.206**	5.863**	5.980**
	(0.581)	(0.599)	(0.594)	(0.027)	(0.035)	(0.032)
LEVERAGE	-0.030***	-0.030***	-0.030***	-0.404***	-0.409***	-0.399***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
PFS	0.117	0.115	0.118	-1.095	-0.891	-1.091
	(0.446)	(0.453)	(0.443)	(0.396)	(0.489)	(0.398)
FSIZE	-0.509***	-0.508***	-0.508***	2.938	2.957	2.236
	(0.000)	(0.000)	(0.000)	(0.203)	(0.201)	(0.333)
YEAR12	0.140	0.134	0.136	-0.234	-0.270	-0.539
	(0.168)	(0.184)	(0.182)	(0.769)	(0.734)	(0.501)
YEAR13	0.417***	0.418***	0.416***	-1.373*	-1.333*	-1.513*
	(0.000)	(0.000)	(0.000)	(0.088)	(0.097)	(0.063)
YEAR14	0.550***	0.557***	0.551***	-1.270	-1.254	-1.367
	(0.000)	(0.000)	(0.000)	(0.153)	(0.158)	(0.128)
YEAR15	0.134	0.135	0.135	-4.136***	-4.261***	-3.556***
	(0.208)	(0.206)	(0.233)	(0.000)	(0.000)	(0.000)
R-squared	0.207	0.207	0.206	0.778	0.778	0.778
F-statistic	8.000	8.008	7.986	11.132	11.133	11.140
Observations	318	318	318	318	318	318

Note. Regressions are estimated with random effects and fixed firm effects of panel data. The first dependent variable is Tobin's q for firm i in year t. Regressions are estimated with random effects of panel data. Meanwhile the second dependent variable is ROA for firm i in year t. p-values are in parentheses. *, **, *** represent significance at 10%, 5%, and 1% levels, respectively.

5.2.1 Is There a U-shape Relationship between Government Ownership and Firm Performance?

In some developing countries, a non-linear relevance is can be seen between the government ownership and company performance. According to Tian and Estrin, (2008), there is a convex relationship between them. That means before the inflection point, there is a negative relation, after the inflection point, a positive relation can be found. Therefore we prefer to find the curvilinear relation between the government ownership and firm performance. In this section the firm performance is measured by ROA. In order to verify this relationship, this study built another equation:

$$\text{Performance} = \alpha + \delta_1 GOVERN + \delta_2 GOVERN^2$$

Where performance is measured by ROA, meanwhile GOVERN presents government ownership.

Moreover we expect the and in results because of the prior literatures. The infection point is calculated by taking derivative of with respect to and letting the result equal zero:

$$\frac{dPerformance}{dGOVERN} = \delta_1 + 2\delta_2 GOVERN = 0$$

$$GOVERN^* = -\frac{\delta_1}{2\delta_2}$$

Where is infection point.

Table 10. Results of Estimation

Variables	B	t	Sig.
Constant	7.839***	8.62	0.000
GOVERN	155.256**	2.504	0.013
GOVERN_squared	-1792.883*	-2.11	0.036

Notes. The dependent variable is ROA. GOVERN is the government ownership. GOVERN_squared calculated by GOVERN multiply GOVERN. The unstandardized coefficients are denoted as B. *, **, *** represent significance at 10%, 5%, and 1% levels, respectively.

According table 10, both of the GOVERN and GOVERN_squared is significant with firm performance measured by ROA. However and is 155.256 and -1792.883 respectively. This result is inconsistent with the prior studies. Moreover the infection point is about 0.043. According to Figure 2, when the government ownership is lower than 4.3%, it has a positive relation with company performance. When the government ownership is large than 4.3%, there is a negative relation.

Actually, most of results of prior literatures are based on the civil law system countries. However under the common law system, UK may have the different situation on it. On the first stage, with the increase of state ownership, bureaucrats make more effort into company by ease access to power and resources, which is not available to other forms of ownership. For instance, government officer may raise funds easily and have more informational advantages. However after government ownership reaches at infection point, it can be seen a decline trend in terms of firm performance. This reason is that as increasing of state ownership, the agency costs growth simultaneously. On the occasion of agency costs outweigh the benefits brought by government as well as the lack of effective government supervision and control of enterprise management, company performance would deteriorate. In addition, the goal of government owner is focus on the political agenda. Therefore, the maximization of firm value is not the unique goal of government. The firm performance would be impaired.

ROA

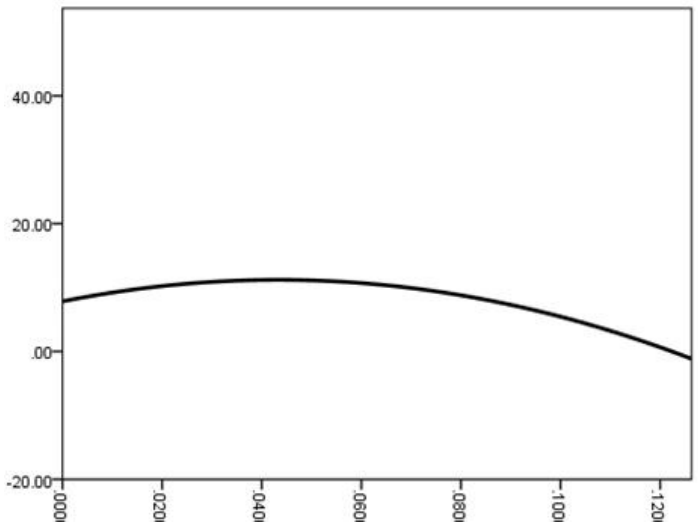

Figure 2. U-shape Correlations between Government Ownership and Company Performance

5.3 Shareholding by Domestic and Foreign Shareholders and Firm Performance

According to column 1 of table 11, foreign ownership is positive and significant with firm performance at 5% level. Meanwhile the coefficient is 1.048. That means if growth of foreign ownership of firm by 1 unit, the value of Tobin's q would expect increase 1.048 units. So that,this result is coherent with Hypothesis 4. Meanwhile this result is in accordance with Nakano and Nguyen (2012).

Actually, based on the multi-theoretical perspective, such as resource-based theory and agency theory, foreign ownership always can affect the firm performance positively. Firstly, shareholding by foreign investors is able to activate the role of monitoring by aligning firm management behavior with maximization wealth of shareholders. When the increase of the foreign ownership, foreign shareholders have more incentive to monitor the mangers in order to mitigate suboptimal decisions by management. Secondly, foreign ownership, especially foreign institutional shareholders, has ability to offer the

benefits from the superior experience and managerial skill. They may help companies to obtain advanced technologies and access to capital markets. Particularly, Koo and Maeng (2006) showed that the foreign ownership would aid a company in overcoming financial constraints and accessing the external financing easily. So that rise of investments may come with higher firm performance. Moreover foreign ownership perhaps brings advanced specific assets of firm in order to increase firm value. In addition, other function of high level foreign ownership may be able to address the downturn when financial crisis occur for the reason that they have ability to overcome troubles in credit and demand constraints. Besides, using of outsourcings is common in the British firms. Meanwhile the firm performance is positively related to outsourcing. Because outsourcing intensity of firm have positive relation with total productivity growth. However, the level of outsourcing using is various between the domestic-owned firms and foreign-owned firms(Girma & Gorg ,2004).

It is worth noting that some prior literatures find a non-linear correlation between foreign ownership and company performance. (Greenaway et al., 2012). Especially, there is a concave relation between them. It is means that before the inflection point, foreign ownership is positively correlated to performance. However after the inflection point, there is a negative relation between them.

Regarding to company performance measured by ROA, column 3 and 4 of table 11 illustrates whether the domestic or foreign ownership cannot affect firm performance. These results are different with the results of performance using Tobin's q as measurement. After random cross-section effect (performance measured by Tobin's q) and fixed cross-section effect (performance measured by ROA) separately, table 12 illustrate that foreign ownership does not have effects on company performance. But domestic ownership is still negatively correlated to company performance (using Tobin's q as measurement). The p-value is 0.067 at 10% level. This is in accordance with result of pooled OLS regression. Moreover, utilizing ROA as measurement, domestic ownership is insignificantly correlated to firm performance.

Table 11. Pooled OLS Regression Estimation about Shareholding by Domestic and Foreign Shareholders

	TOBINQ	TOBINQ	ROA	ROA
Variables	1	2	3	4
FOREIGN	1.048**		3.433	
	(0.018)		(0.227)	
DOMESTIC		-2.141***		-2.704
		(0.003)		(0.554)
BOARD	0.137***	0.121***	0.835***	0.815***
	(0.000)	(0.000)	(0.000)	(0.000)
INDEP	0.830*	0.755*	12.103***	12.009***

	(0.071)	(0.098)	(0.000)	(0.000)
LEVERAGE	-0.013***	-0.014***	-0.052	-0.055
	(0.008)	(0.006)	(0.112)	(0.092)
PFS	0.062	0.206	-1.295	-0.961
	(0.734)	(0.256)	(0.273)	(0.413)
FSIZE	-0.638***	-0.647***	-3.062***	-3.080***
	(0.000)	(0.000)	(0.000)	(0.000)
YEAR12	0.089	0.168	-0.372	-0.194
	(0.666)	(0.411)	(0.778)	(0.884)
YEAR13	0.375*	0.443**	-1.228	-1.030
	(0.069)	(0.030)	(0.353)	(0.433)
YEAR14	0.537**	0.572***	-0.839	-0.768
	(0.010)	(0.006)	(0.529)	(0.565)
YEAR15	-0.17793	0.406*	-4.335***	-3.013**
	0.4644	(0.078)	(0.006)	(0.044)
R-squared	0.320	0.328	0.197	0.194
F-statistic	14.474	14.995	7.545	7.407
Observations	318	318	318	318

Notes. This table presents the results of Pooled OLS regression of panel data. The dependent variables are Tobin's q and ROA for firm i in year t respectively. p-values are in parentheses. *, **, *** represent significance at 10%, 5%, and 1% levels, respectively.

Table 12. Random Effects Model with Tobin's q as Dependent Variable and Fixed Effects Model with ROA as Dependent Variable

	TOBINQ	TOBINQ	ROA	ROA
Variables	1	2	3	4
FOREIGN	-0.068		1.559	
	(0.803)		(0.477)	
DOMESTIC		-0.844*		0.283
		(0.067)		(0.939)
BOARD	0.071**	0.066**	0.289	0.296
	(0.012)	(0.018)	(0.219)	(0.209)
INDEP	0.180	0.207	5.884**	5.756**
	(0.595)	(0.541)	(0.036)	(0.040)
LEVERAGE	-0.030***	-0.030***	-0.404***	-0.407***

	(0.000)	(0.000)	(0.000)	(0.000)
PFS	0.124	0.116	-1.090	-0.982
	(0.419)	(0.446)	(0.402)	(0.449)
FSIZE	-0.511***	-0.514***	2.469	2.612
	(0.000)	(0.000)	(0.287)	(0.259)
YEAR12	0.140	0.153	-0.401	-0.351
	(0.168)	(0.130)	(0.616)	(0.660)
YEAR13	0.421***	0.424***	-1.389*	-1.313
	(0.000)	(0.000)	(0.088)	(0.104)
YEAR14	0.554***	0.558***	-1.087	-1.074
	(0.000)	(0.000)	(0.219)	(0.225)
YEAR15	0.151	0.245**	-4.536***	-4.174***
	(0.242)	(0.045)	(0.000)	(0.000)
R-squared	0.208	0.216	0.776	0.776
F-statistic	8.056	8.440	11.011	10.981
Observations	318	318	318	318

Notes. Regressions are estimated with random effects and fixed firm effects of panel data. The first dependent variable is Tobin's q for firm i in year t. Regressions are estimated with random effects of panel data. Meanwhile the second dependent variable is ROA for firm i in year t. p-values are in parentheses. *, **, *** represent significance at 10%, 5%, and 1% levels, respectively.

6. Conclusion

At first, we found that institutional shareholders are the majority owners of large firms in UK. Particularly, a significant positive correlation between shareholding by pressure insensitive shareholders and company performance (using Tobin's q as measurement) is showed. Nevertheless, the number of institutional pressure sensitive shareholders has no influences on firm performance for the reason that they have potential relation with the company so that these kind of institutional shareholders are compromised with management monitoring in order to protect business relation with company. Nevertheless, after fixed and random the cross-section effects, the results cannot support the significant relation between the pressure insensitive institutional shareholders and company performance. Meanwhile there is no relation between the shareholding by sum of largest five shareholders (including largest shareholders) and firm performance in light of the fact that high level of diffuse ownership structure may reduce management monitoring incentive of each individual shareholder. A surprising finding is a U-shape correlation between state ownership and company performance which is measured by ROA. But this result is not common in UK as the government ownership is too small. The outcome we found may contribute to enrich existing corporate government

literatures in terms of government ownership in UK companies.

Moreover, based on the performance using Tobin's q as measurement, results of pooled OLS regression illustrated the positive correlation between the foreign ownership and firm performance while a negative relation between shareholding by domestic shareholders and performance, which are in accordance with some prior financial literatures (Greenaway et al., 2012) which illustrated some superior functions of foreign ownership. To sum up, the corporate governance mechanisms are not the same as the UK and other countries. Therefore the different regulations may produce various results. Although there are existing some limitations in this paper, this article may be helpful to explore the further analysis.

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