

**Direct Ownership Structure and Profitability in
Azerbaijan Commercial Banks Listed in Baku Stock
Exchange (BSE)**

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ABSTRACT

This thesis investigates the direct ownership structure and ownership type in 33 Azerbaijan commercial banks listed in Baku Stock Exchange (BSE). As a direct ownership structure we analyze the highest percentage of ownership of the largest shareholder (S1) and the total of top five highest ownership percentages (S5) in Azerbaijan banks. Moreover, we ran a regression analysis to establish relationship between ownership structure and profitability measures, return on assets (ROA) and return on equity (ROE) of 31 banks, for 2009. In addition, we use some control variables and dummy variable (foreign ownership) in our regression analysis, to observe their effect on profitability measures.

Direct ownership structure analyzes show that banks in Azerbaijan have highly concentrated ownership structure. Additionally, the thesis conclude that banks in Azerbaijan had “majority ownership”, according to the highest percentage of ownership of the largest shareholder (S1) and “supermajority ownership” according to the total of top five highest ownership percentages (S5). Direct ownership type investigations reveal that "Families" had dominant position in acquiring the highest percentage of stakes in direct ownership of the banks in Azerbaijan. However, regression analysis prove that only square of S5 variable (SQS5) for direct ownership structure variables turned out to be statistically significant independent variable for ROA, with negative sign of coefficient. Thus, there is a non-linear quadratic relationship between square of S5 variable (SQS5) and profitability measure ROA in our regression model. In conclusion

the thesis suggests to build strong financial markets with effective regulations and supervision where it is possible to protect the rights of both minority and majority shareholders.

Keywords: Direct ownership structure analysis, ownership type analysis, profitability.

ÖZ

Bu tez, Bakü Menkul Kıymetler Borsası'nda (BMKB) listelenen 33 Azerbaycan ticari bankaların doğrudan sahiplik yapısı ve sahiplik türünü incelemektedir. Doğrudan sahiplik yapısı olarak Azerbaycan bankalarının en büyük hissedar yüzdesi (S1) ve toplam beş en yüksek hissedarın sahiplik yüzdesi (S5) analiz edilmiştir. Ayrıca, 2009 yılı için, 31 bankanın sahiplik yapısı ve karlılık arasında ilişkiyi incelemek için, varlıklar getirisi (ROA) ve özkaynak getirisi (ROE) üzerindeki etkileri regrasyon metodu ile araştırılmıştır. Ayrıca, bazı kontrol değişkenleri ve kukla değişken kullanarak (yabancı sahiplilik), karlılık üzerindeki etkisi de araştırılmıştır.

Doğrudan sahiplik yapısı analizi, Azerbaycan'da bankaların yüksek oranda konsantre sahiplilik yapısına sahip oldukları tespit edilmiştir. Ayrıca, en büyük hissedar yüzdesine (S1) göre "çoğunluk sahiplilik" ve toplam beş en yüksek hissedarın sahiplik yüzdesine (S5) göre de "super çoğunluk sahiplik" tespit edildi. Doğrudan sahiplik türü araştırmaları, "Aileler" kategorisinin Azerbaycan bankalarının en yüksek yüzdesine sahip olduğunu ortaya koymaktadır. Ancak, regrasyon analizi sonuçlarına göre, sadece doğrudan sahiplik yapısı değişkeni olan kare S5 (SQS5) katsayısının eksi katsayıya sahip olup, varlıklar getirisi (ROA) üzerinde istatistiksel olarak anlamlı bir etkisi olduğu bulunmuştur. Böylece, kare S5 (SQS5) değişkeni ve ROA arasında doğrusal olmayan bir ilişki vardır. Sonuç olarak, hem azınlık ve hem de çoğunluk hissedarların haklarını korumak için etkin düzenlemeler, denetim ve güçlü mali piyasalara ihtiyaç vardır.

Anahtar Kelimeler: Doğrudan sahiplik yapısı analizi, mülkiyet tipi analizi, karlılık.

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Chapter 1

INTRODUCTION

Banks play an essential role in the financial system of each country. Due to this importance, there are a lot of investigations related to the banking sector. Especially, such areas of “Banking and Finance” research as, corporate governance in banks, ownership structure, type of direct owner, relationship between ownership structure and profitability of banks are one of the most important points being interested by the scholars in now days. There are some reasons behind of this. For instance, Mitton (2002) states that strong corporate governance regulations are one of the essential tools to survive for banks during the financial crisis. Hence, corporate governance mechanism of financial organizations needs to be further investigated by researchers in time.

Imperfect corporate governance or concentrated ownership structure in banks can be observed in both developed and developing countries due to the weakness of capital markets, regulations and weak supervision. Thus, in-depth analysis of ownership structure can help policymakers and regulators in the financial sphere making sure that system does not malfunction. As we know, in case if there is an existence of concentrated ownership structure in banks, it can create the agency problem between managers and shareholders. Additionally, the highly concentrated ownership structure in banks and other organizations can be a problem and can result poor protection of

minority shareholders' rights. The relationship between profitability and ownership structure of banks is an important issue to analyze. Based on agency theory, highly concentrated ownership structure can hinder the profitability.

There are a lot of articles that investigate the ownership structure of banks in developing countries. Some of them conclude that there is a domination of foreign banks in the host country, others mention that domestic private or state owned banks dominate the banking system of that country. In regards to the relationship between ownership structure and profitability, researchers found different results. Some of the scholars state that, there is a country where ownership structure of banks affects positively to the profitability. Meanwhile, other researchers indicate the nonlinear negative or positive relationship of ownership structure and bank profitability.

In addition, there are some researches which had been done for countries with transition economies. Most of the articles highlight the presence of foreign owned banks in the banking system of post-Soviet countries or countries with transition economy (Bonin et al., 2003, Fang et al., 2011, Naaborga and Lensinkb, 2008). Unfortunately, there are not enough investigations on the ownership structure and profitability of the banking sector of Azerbaijan, a country with a transition economy. Consequently, the aim of this thesis is to investigate the direct ownership structure of Azerbaijan commercial banks listed in Baku Stock Exchange (BSE). In addition to this, by running a regression analysis, we will try to establish the relationship between the ownership structure and the profitability of banking sector in Azerbaijan.

The content of chapters will include the followings. In Chapter 2, we are going to describe the banking sector in Azerbaijan. It will cover the period starting from 1991, the year of getting independence by Azerbaijan after collapsing of Soviet Union, and till 2011. Literature review of the bank ownership in transition and developing countries, and the relationship of bank ownership and profitability for different countries will be given in Chapter 3. The most important part of the thesis, empirical analysis, will be included in Chapter 4. We will present the direct ownership structure analysis of 33 commercial banks and try to establish the effect of ownership structure on profitability by using regression analysis. Moreover, source of data, methodology and hypotheses for regression analysis will be included. Chapter 5 will make a conclusion about our findings.

Chapter 2

AN OVERVIEW OF BANKING SECTOR IN AZERBAIJAN

As Kosak and Cok (2008) highlighted there were a tremendous changes in banking sector of transition economies since the beginning of transition, starting from 1990s. Azerbaijan banking sector, as the part of transition economy, exposed significant changes starting from transition period till now, as well. One of the reasons in variability of banking sector structure was the collapsing of the Soviet Union and the effort to establish new banking system in young independent country by Azerbaijan government. On the other hand, the Karabakh war (1989-1994), during which Armenia occupied 20% of Azerbaijan's territory, somehow affected to the formation of banking system in Azerbaijan. In the following paragraphs I am trying to describe the picture of establishment and the trend of development of Azerbaijan banking system starting from transition period till now days.

2.1 Banking system after secession of the Soviet Union: The transition period

Azerbaijan was part of the Soviet Union (SU) till 1991, October. It is clear that, banking system in each SU member countries was different in the Soviet period, rather than in modern independent countries, as well as in Azerbaijan. Banks in Azerbaijan were the regional branches of Soviet banks and there were five banks in the financial system during the Soviet period. These banks were; Central Bank (Gosbank), Industrial Construction Bank (Promstroybank), Agriculture Bank (Agroprombank), Saving Bank

(Sberbank, which locally called Emanet Bank) and Foreign Trade Bank (Vneshtorgbank), (Sabi, 1997).

The function of “Saving Bank” (Emanet Bank) was to collect funds, including the household deposits, and to deliver to Moscow. All fund allocation decisions were made centrally from Moscow, in line with the development plans of the Soviet Union economy. This is apparent difference between centrally planned economy and modern market oriented economy. As Sabi (1997) and Bayulgen (1999) showed, the function of banks in Azerbaijan during the SU era was only collect, distribute and control funds, keeping the public savings. They functioned as administrator of accounts and credits to fulfill the central plan. Thus, the branches of those banks did not have any authority to make lending or borrowing decisions, appraising the creditworthiness of borrowers or making any analysis according to the liquidity and solvency of banks.

Azerbaijan gained independence in 1991. New bank legislation was accepted in August 1992. According to the new legislation, banking sector in Azerbaijan introduced two-tier banking system with the National Bank of Azerbaijan (NBA)¹ as the top tier and other commercial banks as the second tier in the new banking system. At the beginning of transition period, different types of banks were established. There were state-owned banks, joint-venture banks, private domestic banks and foreign banks at the beginning. According to research of Sabi (1997) and the data of NBA, in 1993, a total of 165 banks were operating in Azerbaijan. Four of them were state-owned banks, another four were joint-venture banks, 156 were private domestic banks and only one was foreign owned

¹ Later, it will be the Central Bank of Azerbaijan Republic (CBAR).

bank. Classifications of state-owned banks were as following; it was Agriculture, International, Industrial Construction and Savings (Emanet) state-owned banks. New legislation of NBA did not make any differentiation between ownership types of banks. At the same time, there were approximately no distinctions between the operational activities of banks. Moreover, it was allowed for foreign banks to enter in joint-ventures with private domestic banks or operate as the branches of foreign banks in Azerbaijan. As a result of these actions by the NBA and a low minimum capital requirement, which was 10,000\$, a lot of banks got a license for operating in Azerbaijan banking system. Hence, number of joint-venture banks increased from four to seven, foreign banks from one to four, during 1993-1995. Although, it was a sharp increase in number of private domestic banks from 156 to 197 from 1993 to 1994, this number decreased to 165 banks in 1995. State-owned banks remained the same during that period. Increase of minimum capital requirement by the NBA from \$10,000 to \$50,000 for banks resulted in twenty eight license withdrawals and seven mergers in 1995. Thus, total number of operating banks declined from 207 to 180 between 1994 and 1995. Sabi (1997) found that Turkish's shares were dominant in joint-venture banks. Moreover, four foreign banks were from Turkey, Russia, Iran and the USA. Government ownership of 50% or more was in 15 operating banks.

There were a lot of operating banks at the beginning of transition period in Azerbaijan, and the quality of banks' operations was poor. Adopting the financial reforms before the enterprise reforms was one of main reasons for that problem. If the companies are not providing services according to the standards or do not operate utilizing their whole capacity, then there is no need for the banks to sell their credits and provide financial

services. At the end, banks were left with unutilized loan portfolio during the transition period. As Sabi (1997) stated, this was common problem for other transition economies as well, because they could not apply sufficiently market-oriented banking system rules and regulations for their new established banking sector. Moreover, Hubner and Jainzik (2009) indicated that banking sector regulations and supervision were below the standards during the 1990s. They found that it was a reason for developing weak financial institutions and called them “small pocket banks” which operated just for particular enterprises and individuals. In addition, because of hyperinflation, which was 1,800% in 1994, households lost their savings in banks and faith for local currency and banks. Consequently, it was a problem with deposit side of banking system. Banks had problem to obtain funds in the beginning of transition period. However, as Sabi (1997) concluded, negotiations of the NBA with international financial institutions, starting from that period, would lead to construct sustainable banking system in the country.

As of 1 January 2001, there were 59 operating banks in Azerbaijan banking system. Among them, three banks were state-owned. According to data of Central Bank of Azerbaijan Republic (CBAR), the number of operating banks decreased to 46 in 2009 with only one state controlled bank, the International Bank of Azerbaijan (IBA). In addition, number of banks decreased to 45 and 44 in 2010 and 2011, respectively. Hubner and Jainzik (2009) indicated that banking system improved rapidly in Azerbaijan. They stated that, banking sector assets and portfolio of total loans tripled in two years and equaled to 10.3 bln AZN (or 12.8 bln USD) and 7.02 bln AZN respectively. However, they mentioned that banking sector improvement was weak comparing with other Commonwealth of Independent (CIS) countries. Banking sector

was small even in comparison to Azerbaijani economy. They used financial intermediation ratio to evaluate the banking sector development in Azerbaijan. This is the ratio of total banking assets to GDP. It was 27% for Azerbaijan banking system at the end of 2008, which is too low in comparison with the ratio of Ukraine and Euro area which was 80% and 180%, respectively. Furthermore, in 2012 IMF country report, it was stated that there is a weak intermediation and high concentration in the banking system of Azerbaijan. Moreover, they indicated that deposit and credit size was very low in relation to the GDP in 2010.

2.2 Asset, liability and capital structures of banking sector

As it is apparent from research of Sabi (1997) at the beginning of transition period, four state-owned banks had dominated acquiring a significant percentage of total banking assets in Azerbaijan. In 1993, 72% of total banking assets belonged to state banks. Although there was a decrease to 65% in 1994, the share of state banks in total assets increased to 82% in 1995, which was 2,473,877 mln manat.² Consequently, private domestic and joint venture banks left with minority ownership of total banking assets. Thus, private domestic banks owned 26%, 32% and 14% of assets during 1993-1995. Joint venture banks had only 2%, 3% and 5% of assets in 1993-1995, respectively. Total assets of banking sector in 1995 were 3,069,493 mln manat. Moreover, Bayulgen (1999) mentioned that, in 1996, state-owned banks owned 83% of total banking assets, 82% of total deposits and 83% of total outstanding loans.

In January 2001, total net assets of Azerbaijan banking sector equaled to 4,829 bln manats³, which increased from previous year by 51%. The share of loans in total assets

² \$1=4,440 manat (Exchange rate for 1 January, 1996).

³ \$1=4,565 manat (Exchange rate for 1 January, 2001), <http://www.cbar.az/other/azn-rates>

was 41%. Moreover, liquid assets of banks increased by 1,180.0 bln manats relative to previous year. Main reason for that was the increase in customer accounts and deposits in banks. Both of them amounted to 88% of liquid assets. Increase of total obligations by 73.6% increased total banking liabilities in 2000. In addition, offering the certificate of deposits to the depositors by banks in 2000 increased the share of deposits as well. Moreover, plastic card savings of the population made up 5.3% of total deposits.

According to data obtained from the CBAR, it is obvious that banking sector assets increased by 7.3% and made 14,259.2 mln manat⁴ in 2011. Meanwhile, loans increased by 8.1% and were 9,698.8 mln manat. In addition, the structure of banks assets is given in Table 2.1, from 2008 till 2011.

Table 2.1: Structure of banks assets (%)

	2008	2009	2010	2011
Cash	5	4	4	4.9
Corresponded account	9	7	11	9.4
Loans and deposits to financial sector	4	5	4	4
Loans to clients	66	69	65	63.2
Investments	8	7	8	10.1
Other assets	8	8	8	8.4
Total	100	100	100	100

Source: CBAR, Annual report (2008-2011)

It is apparent from Table 2.1, that “Loans to clients” hold dominant position for all of observed years. It increases from 66% to 69% between 2008 and 2009. However, Hubner and Jainzik (2009) found that, since January 2009, there has been a substantial decrease in crediting households and companies from seven billion AZN to six billion

⁴ 1\$=0.79 AZN, approximately.

AZN. This is evident from Table 2.1 as well, where share of “Loans to clients” in total assets decreased to 65% in 2010 and to 63.2% in 2011. “Cash” and “Loans and deposits to financial sector” had lowest weight in asset structure of banks and remained approximately stable for all of sample years. Moreover, in 2011 there was increase in share of “Investments” and “Other assets” to 10.1% and 8.4%, respectively.

At the same time, liabilities of banks changed positively by 16.3% and equaled to 11,831.7 mln manat in 2011. In Table 2.2, the structure of bank liabilities indicates that the weight of deposits in liability were approximately half of the total liabilities, from 2008 to 2010.

Table 2.2: Structure of banking sector liabilities, (%)

	2008	2009	2010
Demand of CBA against banks	3	15.2	13.9
Liabilities of banks and other financial institutions	34	30	32.3
Deposits of individuals	22	24.2	27.2
Deposits of legal entities	33	24	21.8
Other liabilities	8	6.6	4.8
Total	100	100	100

Source: CBAR, Annual reports (2008-2010)

In their study Hubner and Jainzik (2009) indicated that at the end of March 2009, the main source of financing in banking sector was corporate and household deposits which were 36.5% of total liabilities and equity. Borrowing from foreign financial sector amounted to 21.6% of total liabilities. Meanwhile, borrowing from local financial

institutions was only 11.6%. Table 2.3 gives us information about the deposits structure and the growth rate in Azerbaijan banking sector during 2008-2011.

Table 2.3: Deposits structure and growth rate

	2008	2009	2010	2011
Savings of households, (mln manat)	1,905.30	2,334.90	3,029.80	4,119.80
Deposits of legal entities, (mln manat)	2,855.50	2,319.30	2,419	2,807.60
Growth rate of savings of households, (%)	29.8	22.5	29.8	36
Growth rate of deposits of legal entities, (%)	47	-18.8	4.3	16.1

Source: CBAR, Annual Reports (2008-2011)

Overall, there is a positive trend in the growth rate of both savings of households and deposits of legal entities. However, there is a decrease by 18.8% in the deposits of legal entities in 2009. In addition, we can observe that the growth rate of savings of households is higher than the deposits of legal entities from 2009.

There is a positive trend in the capital structure of banking sector as well. Hence, aggregate capital of banking system climbed by 12.7% and made 2,138.7 mln manat in 2011. The share of Tier I Capital⁵ was 80.7% in aggregate capital. Increase in paid-in capital by 14.5% (197.5 mln AZN) highly affected the capital structure of banks. Hence, the share of paid-in capital moved from 71.6% to 72.8%. Share of profit and reserves in

⁵ It is the core capital which consists of common stocks and retained earnings.

capital climbed from 25% to 25.1%. However, it was indicated by the CBAR that positive trend in investments to subsidiaries, credit institutions and to intangible assets affected negatively the capital structure of banks. By the end of 2011, the capital adequacy is 16.3%, which is higher than minimum threshold of 12%.

Table 2.4 gives us an idea that the annual growth of main key indicators of banking system remained positive between 2008 and 2011, except for the deposits of legal entities, which decreased by 19% in 2009. Especially, savings of households had stable growth rate in last four years. It reached its highest level in 2011, where growth rate of savings was 36%.

Table 2.4: Annual growth rate of key indicators of banking system (%)

	2008	2009	2010	2011
Assets	53	14	14	7
Loans	54	17	9	8
Deposit of legal entities	47	-19	4	16
Savings of households	30	23	30	36
Total equity	48	18	8	13

Source: CBAR, Annual report (2010)

Table 2.5 shows how the banking system in terms of credit and deposit changes according to macro-economic indicator of GDP between 2007 and 2011.

Table 2.5: Macroindicators of banking system, (%)

Years	Credit/GDP	Deposit/GDP
2007	16	15
2008	17	16
2009	23	18
2010	22	18
2011	19	19

Source: CBAR, Annual report (2010-2011)

Deposit to GDP ratio changed positively from 15% to 19% between 2007 and 2011, as it is given in Table 2.5. Although credit to GDP ratio had positive increasing trend and was higher than deposit to GDP ratio for previous years, it decreased slightly to 19% in 2011. From the annual reports of CBAR, the concentration of top five large banks, according to their assets size, in holding of the highest share of banking sector assets has been declining since 2009. Hence, in 2009, top five banks owned 61% of sector assets, while it was 62.7% for previous year. Share of total deposits decreased from 50% to 49% in 2009. Concentration of assets and share of loan investments by five top banks declined to 60.7% and 61% (65.8% in 2009), respectively in 2010. There was a substantial decrease in assets concentration and share of credit investments by the top 5 largest banks in 2011 as well. Thus, the asset concentration of five banks moved to 57%, where the share of credit investments changed to 56.5%. Furthermore, CBAR used the Herfindahl-Hirschman index⁶ of banks to evaluate the concentration of dominant banks. Table 2.6 shows us negative trend of the index from 2009 to 2011 and that there is medium concentration in the banking sector of Azerbaijan.

⁶ This index equals to the sum of squares of banks' shares in the banking system.

Table 2.6: Dynamics of Herfindahl-Hirschman index, by assets

Years	Index
2009	2033
2010	1892
2011	1442

Source: CBAR, Annual Report (2011)

2.3 Financial performance and efficiency of banking sector

Relying on data provided by CBAR, we can see that there was an increase in net profit after taxes by 17.54% from previous year which equaled to 141.4 mln manat in 2011, as shown in Table 2.7. According to the analysis of CBAR, we can highlight that main factor that affects growth in net income is the revival of lending activity and the stabilization in assets quality of banking sector. Meanwhile, this was reflected positively in the interest income of banks. Hence, it is clear from Table 2.7 that there is an increase in interest income by 4.22% in 2011. While there was increase in interest and non-interest expenses by 6.29% and 19.3%, decrease of expenses on loan loss provisioning by 27.12% resulted in a decline of aggregate expenses in banking sector.

Table 2.7: Structure of profit, in mln. Manat

	2010	2011	Change in %
Interest income	1,055.30	1,099.80	4.22%
Interest expenses	551.6	586.3	6.29%
Non-interest income	271.6	321	18.19%
Non-interest expenses	451.3	538.4	19.30%
Net operational profit	323.9	296	-8.61%
Expenses on loan loss provisioning	184	134.1	-27.12%
Net profit after taxes	120.3	141.4	17.54%

Source: CBAR, Annual report (2011)

Furthermore, we obtain data for analyzing the banking sector efficiency in Azerbaijan, from the IMF country report 2012. IMF used the ratio of net income to average assets and the ratio of net income to total equity which are return on assets (ROA) and return on equity (ROE) respectively. Data provided by IMF is given in Table 2.8.

Table 2.8: Banking sector profitability (%)

	2005	2006	2007	2008	2009	2010	2011
Return on Assets (ROA)	1.9	1.3	1.9	1.8	2.2	0.9	1.1
Return on Equity (ROE)	13.2	9.9	14.3	14.2	16	7	7.9

Source: IMF Country Report 2012, No. 12/5

Table 2.8 shows that ROA is higher than the accepted threshold⁷ from 2005 till 2009. There is a sharp decrease in ROA to 0.9 point in 2010. However, it increased to 1.1 in 2011. The ROA decline in recent years is mainly explained by the decline of net interest margin (CBAR). On the other hand, ROE get its maximum point in 2009, where it is 16. However, it decline to 7 in 2010 and increase again slightly to 7.9 in 2011. CBAR stated that, increase of ROE in 2011 was mainly because of stabilization of assets quality and decrease in the scale of deductions to loan loss provisioning.

2.4 Transparency and disclosure by Azerbaijani banks: Ownership and degree of concentration

Standard & Poor’s research team carried out a study on “Transparency and disclosure by Azerbaijani banks” in 2010. Although it was 47 operating banks, according to CBAR statistics, they analyzed 30 of them. They selected banks with more potential of having transparency and high disclosure. The main criteria of their survey were the disclosure

⁷ It should be at least 1.

of ownership and corporate structure, corporate procedures, financial information, operational information, board and management information. Their results showed that the average score of Azerbaijani Banking Transparency Index equaled to 30% among 30 largest banks. This number is very small relative to the 30 Russian largest banks with 52% score in 2007 and the 30 largest Ukrainian banks with an average score of 43% in 2010. Their analysis indicated that the lowest score of disclosure index in Azerbaijan banks was because of the weak web-site disclosure, the absence of annual reports. The lack of disclosures in English affected negatively the survey. Hence, the highest score among 30 banks gained by five banks: Demirbank, Rabita Bank, Amrah Bank, Muganbank and Access Bank. All of them scored at least 40%. Moreover, according to criteria of Standard & Poor's Access Bank was chosen as the most transparent bank with score of 52%. All of five banks provided information about ownership structure, audited report according to IFRS standards, their policy on risk management strategies and information regarding the board structure. In addition, they classified banks according to foreign and local shareholder. Four banks from the example were foreign owned with average disclosure score of 38%. The rest 23 banks with local investors got average transparency score of 31%. The most transparent three banks of both type of ownership scored 43%.

The highest component of disclosure for Azerbaijani banks was the ownership disclosure. The average score of ownership component was 48%. Banks disclosed valuable information about their shareholders, share capital, par value and amount of shares. Consequently, analysis of Standard & Poor's on ownership structure of Azerbaijani banks asserted that there was high ownership concentration in banks. Hence,

92.9% of banks (26 out of 28) had at least one block holder with the shares more than 25%. Moreover, they observed high foreign investor participation in the Azerbaijan banking system. Thus, seven banks had at least one foreign origin blockholder. Each of foreign entities in bank owned less than 20%. They also concluded that there was higher private shareholding in banks, as well. 67.9% of observed banks had private stakeholders. Banks with private ownership owned 27.4% of the banking assets. Only one bank was state-owned, International Bank of Azerbaijan, which is the largest bank in Azerbaijan with 46.1% of the assets of sample banks.

Chapter 3

LITERATURE REVIEW

There are a lot of studies related to the bank ownership structure and relations of bank ownership structure with the profitability of that bank. Some of the authors state that the ownership of banks is concentrated in some countries. Others reveal that ownership is dispersed. On the other hand, the effect of ownership structure to the profitability of bank differing in every country. There are countries where ownership structure of banks affects either negatively or positively to the profitability of banks. However, it is evident from the studies that in some economies there is no statistically significant relationship between profitability variables and ownership structure of banks. Thus, the following sections describe the results of articles regarding to bank ownership in transition and developing countries. Moreover, there are some findings of relationship of bank ownership and profitability.

3.1 Bank ownership in transition economies

As Azerbaijan is a country with a transitional economy, it is useful to review the articles related to the ownership structure of banks in different transitional economies. Kostyuk (2010) analyzed the ownership structure of banks in Ukraine after the privatization period during 1998-2003. He observed that the ownership had transferred from the State

to the insiders during the privatization period. Hence, the shares of insiders⁸ increased, where the shares of outsiders remained unchanged in the structure of corporate ownership of Ukraine's banks. Moreover, he found that high ownership concentration led to weak transparency and weak responsibility of large shareholders. This is because of the large number of oligarchs who were representing the tremendous number of insider shareholders. Since they did not want to be announced to the society, the trade actions between them and government were not transparent during the privatization process. Thus, he concluded that Ukraine ended up with non-transparent shareholders, entrenched management and passive employees in the banking system.

Moreover, Bonin et al. (2003) investigated the effect of extensive foreign ownership on banking sector for eleven transition countries during 1996-2000. These countries are four northern European countries, the Czech Republic, Hungary, Poland and Slovakia, four southern European countries, Bulgaria, Croatia, Romania and Slovenia, and the three Baltic countries, Estonia, Latvia and Lithuania. They found that banking sector in these countries was going to be similar with their counterparts in developing and emerging countries. However, big and significant difference among them was the unusually high presence of foreign ownership in banking system of transition countries. They classified the ownership concentration as majority domestic private ownership, majority government ownership, strategic foreign ownership and other foreign majority ownership. According to their analysis, they concluded that the strategic foreign owners contain 53% of observation, where the majority foreign owners were in 7% of the whole

⁸ They are employees and management who owns the shares of a company and who have access to the information about the company. Moreover, they are shareholders who own at least ten percent stakes of a company, but who are not employed by a company.

banks. Meanwhile, 30% of banks were owned by majority domestic private owners. Only in 10% of banks government remained the majority shareholder. In addition, they observed presence of international institutional investors in 9% of banks.

Fang et al. (2011) examined profit and cost efficiency of the banking sector in six South Eastern Europe (SEE) countries between 1998 and 2008 years. Moreover, they analyzed the ownership structure of 145 SEE banks for that period. They categorized the owners as foreign, domestic private and government. They concluded that ownership of foreign banks increased sharply. Hence, market share of foreign owners was about 67%, where the domestic private and government had 29% and 4% of market share respectively by the end of 2008.

Fries and Taci (2004) analyzed the cost efficiency of banks in 15 post-communist countries during 1994-2001. The countries were; Bulgaria, Croatia, Czech Republic, Estonia, FYR Macedonia, Hungary, Kazakhstan, Latvia, Lithuania, Poland, Romania, Russia, Slovak Republic, Slovenia and the Ukraine. Their observation included 289 banks, where they observed ownership structure of those banks for the given period as well. They found that 27.4% of banks were newly established private ones with foreign ownership and 26% of the sample banks were newly established private with domestic ownership. Privatized banks with foreign ownership and privatized banks with domestic ownership made up 7.5% and 18% of banks, respectively. The majority stakes of 21.1% of banks were owned by the state.

By analyzing bank efficiency and the role of foreign ownership in Czech Republic and Poland, Weill (2003) observed that by the end of 2001, in Czech Republic banking sector, 70% of equity were owned by foreign investors.

Naaborga and Lensinkb (2008) examined relationship between the foreign ownership and bank performance in 216 banks in transition economies of Central and Eastern Europe, and in Central Asia. They studied banks operating in the following countries; six Central European countries, three Eastern European countries, three Baltic States, six Balkan States, two Caucasian countries and banks from two countries of Central Asia. They concluded that in 22 former Soviet countries in Central, Eastern Europe and Central Asia, foreign owners, especially foreign banks, owned 63% of total banking assets. However, in Euro area, foreign investors owned only 16% of banking assets. Their study showed that in 11 EU accession transition countries, foreign ownership makes up 71% of all banking assets. Meanwhile, in 11 other European transition economies, just 24% of all banking assets are in the hands of foreign investors. On the other hand, Bikker and Wesseling (2003) observed that at the end of 2001 foreigners owned just 16% of banks assets in Euro countries. However, in a study conducted by ECB (2005), it was stated that in eight new EU member states in Central and Eastern Europe region, 73% of total bank assets were owned by foreign investors in 2003.

3.2 Bank ownership in developing countries

Lin and Zhang (2006) assessed the ownership structure of Chinese banks and their affect to the performance of those banks during 1997-2004. They focused on the top ten shareholders in the ownership structure of banks and classified the shareholders as state, private investor and foreign investor. The research concluded that 35.87% of average stakes in the city-level commercial banks and 51.6% of average stakes in the domestic joint-equity banks were owned by the state. Private investors owned 24.37% of average stake in the city-level commercial banks and the same investors had only 4.6% of ownership in domestic joint-equity banks. Unlike to the results of other studies, foreign investors hold only 1.35% of equity stake on average in the city-level commercial banks and 1.12% of equity in domestic joint-equity banks in China during the 1997-2004. As it is obvious, the state was the largest shareholder in China and it had the stakes in 23 city-level commercial banks, out of 29 and in eight domestic joint-equity banks out of 10.

Moreover, Atallah and Le (2006) examined the impact of different elements of economic reforms to the efficiency of Indian banks during 1992-1998. They found that the economic reforms positively affected the efficiency of banking sector. In addition to this, they claimed that the efficiency of three groups of ownership in banks, which are domestic private banks, foreign banks and public sector banks doubled the efficiency of banking sector in India during the Economic reforms era. On the other hand, in a study conducted by Clarke et al. (2001), it was argued that in developing countries foreign banks played significantly important role. Hence, over 50% of total banking sector

assets were owned by foreign controlled banks in Argentina, Chile, Poland, Hungary and the Czech Republic.

Cardenas et al. (2002) observed participation of state, private and foreign banks in terms of assets in each Latin America country's banking sector and participation in terms of capital in Eastern Europe countries. The dominant owners in Argentina were foreign banks with 48.4%, where the state and private banks owned 32.5% and 19.1% respectively. Foreign bank's ownership was higher in Peru as well with 46% of ownership. However, state bank's ownership decreased to 10.8% and private banks owned 43.2% of assets in this country. There was a dramatically sharp increase to 82.3% for the foreign banks ownership in Mexico. Meanwhile, private banks owned 17.7% of assets. The condition for the rest Latin America's country is different. For Brazil, the highest owners are state banks and their ownership is 46%. Private bank's and foreign bank's ownership divided equally in Brazil at a level of 27%. On the other hand, private banks owned the most percentage of assets in Bolivia and Chile. Their ownership was 56.5% and 45.5% respectively. The state bank ownership was 18.2% and 12.9% in Bolivia and Chile with 25.3% and 41.6% of foreign bank ownership respectively.

In addition to the Latin America countries, they analyzed participation of state, private and foreign banks in terms of capital in Romania, Slovakia and Czech Republic. The same situation was observed in these 3 Eastern Europe countries. Foreign banks again were dominant in ownership with 54.9%, 60.5% and 70% of capital in each above mentioned countries. In Romania and Slovakia, the state banks owned 41.8% and 33% of capital. However, this category of owners owned just 4.3% of capital in Czech

Republic. Consequently, the private bank's ownership in Rumania, Slovakia and Czech Republic were 3%, 6.4% and 25.7%. They concluded that, if the single largest foreign country among the foreign banks owners is Austria and Luxemburg for the studied Eastern Europe countries, and Spain for the Latin America countries.

Mian (2003) analyzed the ownership structure of about 1,637 banks in 100 emerging countries, containing data from 1992 to 1999. He classified ownership structure of banks as; foreign, private domestic and government banks. The research asserted that privately domestic owned banks are the major categorization of the classification. However, government owned banks remained on the last level of the classification. To be clearer, there were 859 banks with private domestic ownership, 528 with the foreign ownership and just 250 banks with government ownership among the whole sample. According to the total bank assets, he claimed that all three types of banks played a substantial role in the banking sector of developing countries. Additionally, he examined the structural and organizational differences among private domestic, foreign and government banks according to the cash flow (ownership) rights and control rights. He indicated that private domestic banks are privately owned and managed by domestic shareholders. Meanwhile, foreign banks are also owned and managed privately by foreigners. However, unlike to the private domestic banks, the cash flow and control rights for foreign banks remain with foreign shareholders. On the other hand, the cash flow rights (ownership) of the government banks remain with the tax-payers.

Micco et al. (2004) studied bank ownership and its effect on profitability of banks for 119 countries, examining approximately 50,000 banks during the 1995-2002 years. As a

result of the study, they indicated that 84% of banks were private domestic banks, 12% of the observation was foreign owned banks and just 4% remained for the state-owned banks. It was observed that share of foreign owned banks increased substantially from 10.5% to 14% during the observation period. However, share of state owned banks decreased approximately from 5% to 3.2% for the same period. Additionally, they classified the ownership structure of observed banks according to the region. They stated that South Asia, East Asia and Middle East are the regions where the share of state-owned banks had a significant weight. The share of state-owned banks in those regions was 24%, 17% and 14% respectively. However, foreign ownership of banks was higher in Caribbean, Latin America and Sub-Saharan Africa, which makes up 27%, 37% and 30% of observations respectively. 46% of total bank assets in Sub-Saharan African countries were foreign owned. Moreover, large number of foreign banks was in all other developing regions, except the South Asia. Meanwhile, public ownership of banks was widely dispersed in Asian and Eastern Europe countries. Especially, in South Asia, 40% of banks assets were owned by public sector. Public ownership of banks was lower in the Caribbean, Sub-Saharan Africa and industrial countries.

3.3 Bank ownership and profitability

Bektas and Kaymak (2009) analyzed the relationship of Turkish operating banks' performance with their ownership concentration and ownership type, according to resource-dependency perspective and agency theory. According to their investigation they concluded that ownership concentration and ownership type do not affect the banks' performance. In addition they found that ownership variables revealed negative values and they were not significant. However, they suggested that in case of

significance of tenure and board composition the ownership type is necessary. Moreover, they supported the concentrated ownership structure, because it mitigates the negative consequences of tenure to bank performance.

Antoniadis et al. (2010) studied the effect of ownership on bank performance profitability in the Greek banking sector. Especially, they analyzed the banks listed in the Athens Stock Exchange market during the period 2000-2004. They observed that there is a statistically significant non-linear relationship between ownership and profitability. Moreover, they found that the high level of ownership concentration and diffused ownership in examined banks leads to an increase in bank profitability. At the same time, they observed that the agency problems in banks have a different character compared to other companies. They claimed that the performance and ownership is not a conflict between managers and owners or large shareholders in Greek banks, as the agency theory predicts.

Kosak and Cok (2008) examined the relationship between bank ownership and bank profitability in six South-Eastern European countries (SEE-6); Croatia, Bulgaria, Romania, Serbia, FYR Macedonia and Albania. They categorized the bank ownership as domestic and foreign owned banks, and analyzed the profitability during the 1995- 2004 period. In their analysis, they found very little difference between the performance indicators of foreign-owned banks and domestic banks. However, they observed a difference in their net interest margin indicator of profitability.

Wen (2010) investigated the relationship between bank ownership concentration and profitability for China. He examined 50 Chinese banks in 2003, 2006 and 2008. In his study, he indicated that there is no linear positive or negative relationship between ownership concentration and bank performance for State-Owned commercial banks (SOCBs), Joint-Stock commercial banks (JOCBs) and City commercial banks (CCBs). However, after designing a quadratic model, he found that there is a linear relationship between the highest ownership percentage (S_1) in banks and ROA in 2006, and it is possible to have a quadratic relationship in 2008 as well.

Lin and Zhang (2006) also examined the influence of bank ownership structure on the performance of banks in China. They observed annual data of 60 banks from 1997 to 2004. Unlike to Wen's (2010) result, they found that the state ownership negatively affected the performance of banks during these years. For instance, the big four state-owned banks on average performed poorer than others in the long run. They concluded that domestic banks which had been involved in foreign acquisition showed better performance, unlike the cases in Brazil and Argentina.

Azam and Siddiqui (2012) analyzed and compared the profitability of domestic (public and private) and foreign banks operated in Pakistan. They worked on 36 Pakistan commercial banks using quarterly data from 2004 to 2010. They found that domestic commercial banks are more profitable than foreign controlled banks in Pakistan. At the same time, they concluded that the determinants of profitability for foreign banks are different than those for domestic banks.

By analyzing ownership details of 249 banks in 20 Middle East and North Africa (MENA) countries with a total of 567 observations during the 2000-2002 sample years, Kobeissi (2005) found that there is a high impact of ownership structure on the bank performance. Especially, he observed that private banks, especially foreign owned ones, have higher performance indicators than other banks in the sample. Meanwhile, he stated that government owned banks take the last place in the ranking and performed the worst. Finally, he concluded that banks that are listed in stock exchange markets and have foreign majority ownership have a great significant effect on performance within the MENA region.

Kim et al. (2012) investigated the ownership structure of domestic-owned and the foreign-owned commercial banks in Malaysia. They analyzed the effect of transparency in ownership and governance on bank performance of private-domestically owned banks and foreign-owned banks by employing foreign and domestic commercial bank data from 1995 to 2005 years in Malaysia. Their empirical study showed that good corporate governance practice positively affects bank performance and profitability. Finally, they asserted that privately-owned and domestically-owned banks have a higher performance in Malaysia because of the adaptation of good corporate governance.

Iannotta et al. (2006) compared the performance and risk of 181 large banks from 15 European countries during 1999-2004 years. They examined the impact of alternative ownership models and degree of ownership concentration on profitability, cost efficiency and risk for these banks. According to the results, they found that there was not substantially big difference between the profitability of banks with more dispersed

owners and the banks with more concentrated owners. Additionally, they tested the differences in bank profitability among private, mutual and public sector banks. They concluded that private banks' profitability exceed the level of profitability in mutual and public sector banks. Beside the lower profitability of public sector banks, they argued that these banks are more risky than others. Meanwhile, they explained that lower average size and different kind of asset mix led to lower profitability in mutual banks.

Fernández et al. (2004) analyzed the influence of bank ownership on non-risk and risk-adjusted bank profitability measures during 1990-1997 in 8 OECD countries. The four types of bank ownership structure were used in the study; namely, stock-owned banks, state-owned banks, mutual banks and savings banks organized as foundations. The results of their study indicated the effect of different ownership structure of banks on their profitability and risk. They asserted that the non-risk adjusted profitability of mutual banks exceed the profitability of stock-owned banks. Meanwhile, the results changed when they used the risk adjusted variables. At the same time, the stock-owned banks have less net income and profit before taxes after adjusting for risk than the state-owned banks. However, they did not observe any substantial difference in profitability between the stock-owned banks and banks organized as foundations after adjusting for the risk.

By analyzing eight Ethiopian commercial banks during 2001-2008, Kapur and Gualu (2011) indicated that the ownership structure had an essential impact on the profitability of commercial banks in Ethiopia. Hence, the study showed that the private sector banks had higher profitability than the public sector banks. Meanwhile, the asset quality and

capital adequacy performance was better in private banks than in public sector banks. However, the latter ones were successful in the cost management.

In a study conducted by Demirguc-Kunt and Huizinga (1999) they proved that in developing countries foreign banks show higher profitability and higher interest margins than domestic banks. On the other hand, this is reverse in industrial countries, where performance of domestic banks higher than their counterparts. They explained this as the fact that foreign bank's technological edge is stronger in developing countries relatively to industrial countries. The technological edge prevented informational disadvantage while locally raising or lending funds.

Bilsen (2012) studied the ownership structure of Turkish Republic of North Cyprus banking system and their effects on bank performance. She observed the period of 2001-2009, with twelve private, four foreign and one public bank. She concluded that in overall foreign banks were more profitable than domestic private and public banks. She explained the profitability of foreign banks as the result of their reputation, minimized default risk and tax advantageous. On the other hand, she indicated that most of foreign banks in North Cyprus are the branches of Turkish banks. Thus, the use of the same currency can alleviate the currency risk easily. Consequently it affected positively to the profitability of foreign banks in Turkish Republic of North Cyprus.

Chapter 4

DIRECT OWNERSHIP STRUCTURE ANALYSIS AND PROFITABILITY: AN EMPIRICAL ANALYSIS FOR AZERBAIJAN COMMERCIAL BANKS

In this chapter, we are going to analyze the direct ownership structure of 33 Azerbaijan commercial banks, whose shares are publicly traded in the Baku Stock Exchange (BSE). Subsequently, we will try to establish the relationship between ownership structure and profitability of commercial banks for the year of 2009 by running a cross-sectional regression analysis.

4.1 Direct ownership structure analysis

For the ownership structure analysis, we use ownership data from the prospectuses of 33 commercial banks. We obtain prospectuses from the official web site of Baku Stock Exchange. Additionally, we use “Consolidated Financial Statements and Independent Auditor’s Report” of these banks prepared in accordance with the International Financial Reporting Standards for 2009. We managed to collect full data only for 2009. That is why our analysis covers just that year. We use balance sheet and income statement numbers from these audited reports and we also check the ownership structure of shareholders, as well.

Overall, after investigating the ownership structure of 33 commercial banks listed in the Baku Stock Exchange, we are able to analyze and understand the direct ownership structure of these commercial banks operating in Azerbaijan banking system. As shown

in Table 4.1 and Figure 4.1, it is apparent that "Individuals" is the most frequently observed direct ownership type.

Table 4.1: Classification of direct ownership stakes in 33 commercial banks listed in BSE

	Type of direct owner	Frequency	Average ownership stake (%)	Median ownership stake (%)	Min. (%)	Max. (%)
1	Individuals	24	24.12%	19.61%	0.76%	75.33%
2	Families	15	61.36%	63.26%	18.02%	100.00%
3	Foreign financial companies	12	30.44%	21.25%	10.00%	75%
	Private investment company	5	36.80%	29.00%	10.00%	75%
	Commercial bank	2	49%	48.50%	46%	51%
	Development bank	5	16.86%	16.67%	10.00%	25%
4	Non-financial companies	10	44.01%	40.92%	10.00%	100%
5	Holding companies	4	80.99%	87.60%	48.99%	99.76%
6	Financial companies	3	64.00%	49.00%	46%	97%
	Private investment company	2	73.00%	73.00%	49.00%	97%
	State credit institution	1	46.00%	46.00%	46.00%	46.00%
7	State/State agencies	1	50.20%	50.20%	50.20%	50.20%

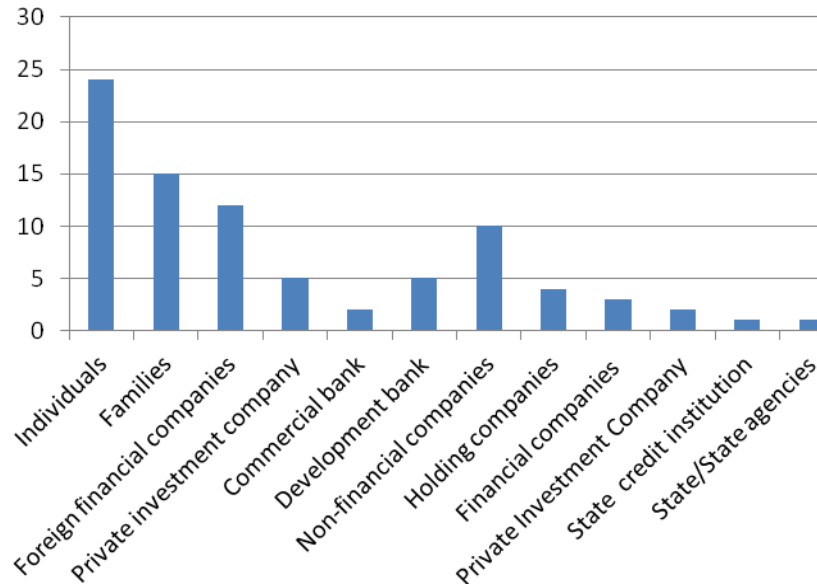


Figure 4.1: Frequency of types of direct owners for commercial banks listed in BSE

Firstly, there are 24 individuals that have direct ownership rights in Azerbaijan banks. However, the average ownership stake is just 24.12%, which is the lowest percentage among other types of direct owners. Meanwhile, the median ownership stake is only 19.61% which is the lowest as well. Although banks are legally required to report the direct ownership stake above 10%⁹, for “Individuals” type of ownership, they also report the ownership stake below 10%. Consequently, the minimum ownership percentage is 0.76% with a maximum percentage of 75.33% for the "Individual" type of ownership. Secondly, there are 15 "Families" in our ranking. The average ownership stake is 61.36%, where the median ownership stake is 63.26%, as shown in Figures 4.2 and 4.3. The minimum and maximum percentage of "Families" ownership are 18.02% and 100%, respectively.

⁹ This is the requirement of Baku Stock Exchange (BSE) for the listed banks, where it is highlighted that banks should indicate in their prospectuses only stakeholders who own 10% or above shares of bank.

In the Ex-Soviet countries having transitional economies, “Foreign financial companies” have had a tremendous effect on the economy, especially during the privatization process. Thus, as we can see from Table 4.1, there is a substantial effect of foreign financial companies in the direct ownership structure of banks in Azerbaijan. In total, twelve “Foreign financial companies” have a direct ownership in the commercial banks of Azerbaijan. Five of them are “Development Bank”, with average and median ownership stake of 16.86% and 16.67% respectively. Five of them are “Private Investment Company” with average ownership stake of 36.8% and median ownership stake of 29.0%. Only two are “Commercial Foreign Banks” with average ownership stake of 49.0% and median ownership stake of 48.5%. In total, the average ownership stake of twelve foreign financial companies is 30.44% with 21.25% median ownership stake.

The next place in the ranking is filled by the "Non-financial companies". There are ten non-financial companies that have a direct ownership stakes in Azerbaijani banks. The average ownership stake for non-financial companies is 44.01% with the 40.92% of median ownership stake. The minimum and maximum percentage ranges from 10.0% to 100.0%.

There are just 3 “Financial Companies” that have direct ownership in banks listed in BSE. Two of them is the “Private investment company” and the last one is the “State credit institution”. There is no commercial bank that has direct ownership in Azerbaijan commercial banks listed in BSE. The average ownership stake of all financial companies

is 64.0%, where the median ownership stake is 49.0%, as it is shown in Figure 4.2 and Figure 4.3.

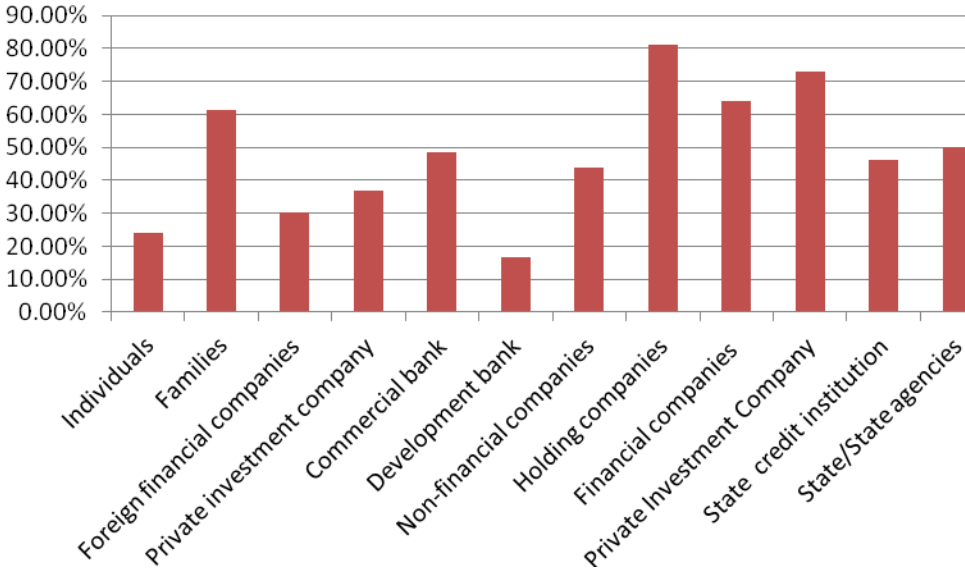


Figure 4.2: Average ownership stake of types of direct owners for commercial banks listed in BSE (%)

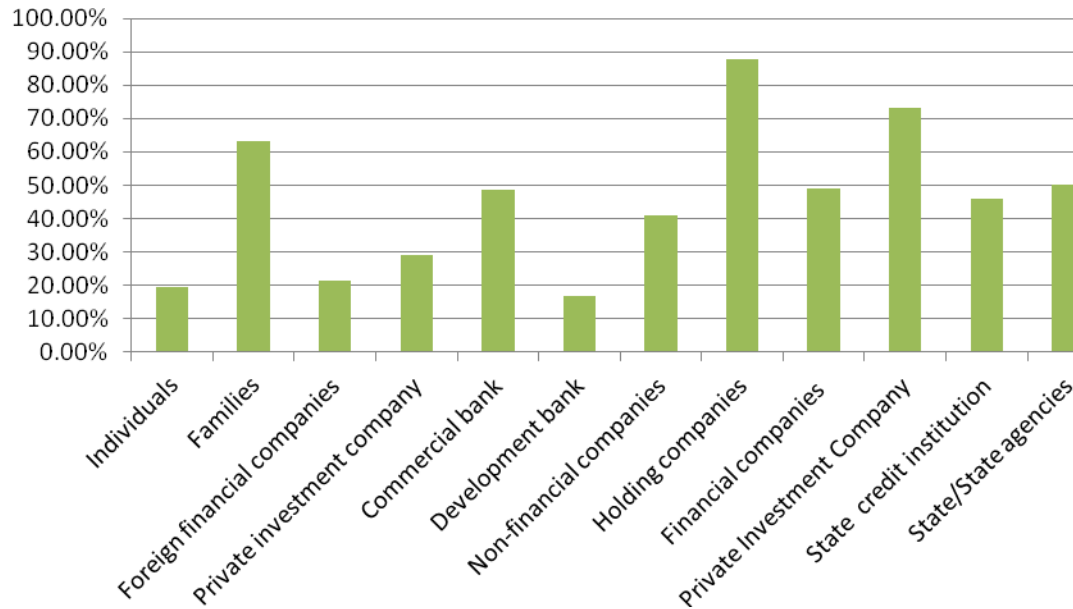


Figure 4.3: Median ownership stake of types of direct owners for commercial banks listed in BSE (%)

Moreover, there are four “Holding companies” that own relatively high ownership percentage of shares on average. We can observe the relatively high average and median ownership stakes for “Holding companies”, in Figures 4.2 and 4.3. The average ownership stake of “Holding companies” in banks is 80.99% with 87.6% of median ownership stake. The last ranking belongs to the “State/State agencies” in Table 4.1. There is just one State agency that has direct ownership in Azerbaijan commercial banks with 50.2% ownership stake. This is the Ministry of Finance of Azerbaijan Republic.

We also analyze the ownership concentration of 33 Azerbaijan commercial banks listed in BSE, where we take the highest ownership percentage (S1) and the total of top five highest ownership percentages (S5). While analyzing the ownership concentration with S1 variable, Table 4.2 and Figure 4.4 show that 33% of the listed banks have ownership

concentration between 50-59.99%. As it is shown in Table 4.2, the majority of shareholders have direct ownership concentration in 50-59.99% range.

Table 4.2: Direct ownership concentration of 33 commercial banks traded in BSE

Range (%)	S1		S5	
	Frequency	%	Frequency	%
00-09.99	1	3%	0	0%
10-19.99	0	0%	0	0%
20-29.99	3	9%	1	3%
30-39.99	0	0%	0	0%
40-49.99	3	9%	1	3%
50-59.99	11	33%	3	9%
60-69.99	0	0%	2	6%
70-79.99	6	18%	2	6%
80-89.99	3	9%	4	12%
90-100	6	18%	20	61%
Total	33	100%	33	100%

As it is known from “Ownership structure” literature, ownership stake higher than 50% is known as “majority ownership”. Consequently, Table 4.2 and Figure 4.4 show that there is a domination of “majority ownership” in the banking sector of Azerbaijan, when we analyze ownership structure according to S1 variable.

The next range is 70-79.99 and 90-100%. 18% of banks have ownership concentrations in 70-79.99 and 90-100% ranges. Furthermore, 9% of the banks have ownership concentration between 20-29.99%, 40-49.99% and 80-89.99%, while the range of ownership concentration between 0-09.99% is observed just in 3% of banks. There is no bank with direct ownership concentration range of 10-19.99%, 30-39.99% and 60-69.99%.

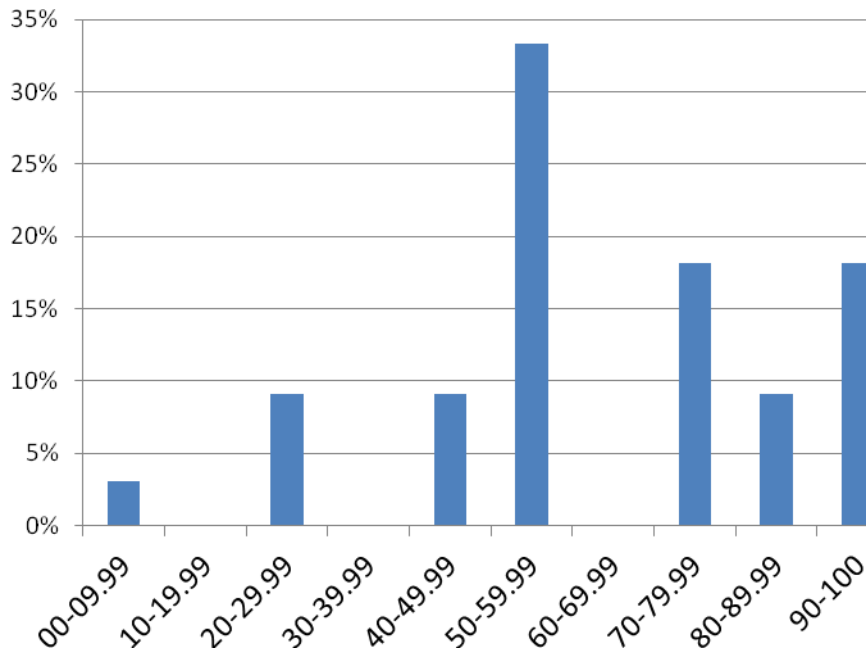


Figure 4.4: Frequency distribution for the highest percentage of ownership of the largest shareholder (S1)

We also investigate the ownership concentration with the S5 method. The results in Table 4.2 and Figure 4.5 show that in 61% of banks, the ownership concentration range is between 90-100%, which is a substantial number. Once again, as we know from ownership structure literature, ownership stake greater than 75% is known as “supermajority” ownership. Consequently, while we analyze frequency distribution for the total of top five highest ownership percentages, we can surely highlight the evidence of supermajority ownership in the ownership structure of Azerbaijan commercial banks. Supermajority stake entitles the owners to take major decisions requiring supermajority percentage legally such as changing the articles of incorporation.

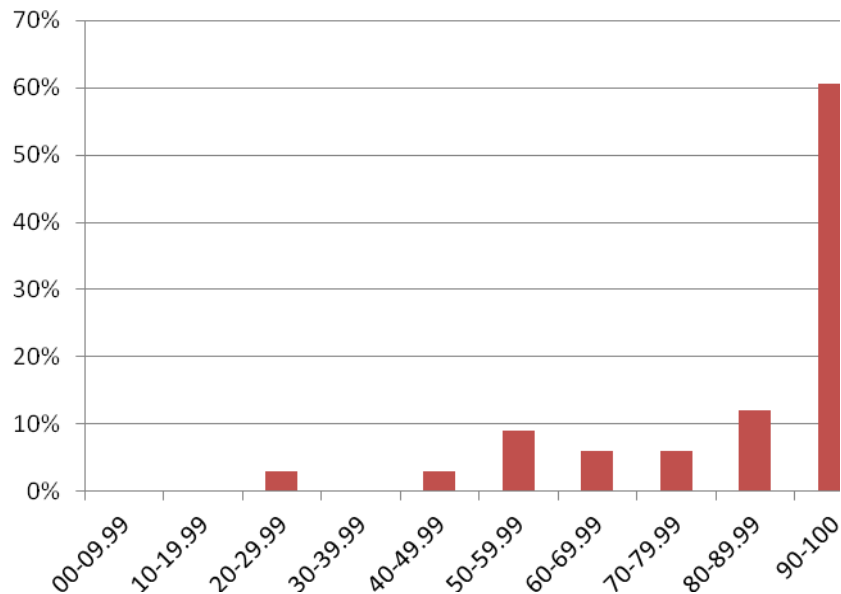


Figure 4.5: Frequency distribution for the total of top five highest ownership percentages (S5)

The next range is between 80-89.99% and 12% of banks has ownership concentration in the range of 80-89.99%. Only in 9% of banks, the ownership concentration, according to S5, is in the 50-59.99% level. In 6% of banks, direct ownership concentration is between 60-69.99% and 70-79.99%. The last range is 20-29.99% and 40-49.99%. In 3% of banks the owners have direct ownership between these ranges.

The average ownership stake for S1 variable is 63.45% with median ownership stake of 56.0%. At the same time, the average ownership stake for S5 variable is 84.64% with median ownership of 91.88%, as it is shown in Table 4.3. The minimum stake for S1 and S5 variable is 9% and 28% respectively. The maximum stake is 100% for both of the variables, S1 and S5.

Table 4.3: Descriptive statistics for direct ownership stakes for the largest shareholder (S1) and the total of top 5 largest shareholders (S5)

Variable	Number of companies	Average ownership stake (%)	Min stake (%)	Max stake (%)	Median ownership stake (%)
S1	33	63.45%	9%	100%	56.00%
S5	33	84.64%	28.00%	100%	91.88%

We also analyze the direct ownership concentration for ranges between 0-24.99%, 25-49.99%, 50-74.99% and 75-100%, for S1 and S5 variables. Table 4.4 and Figures 4.6 and 4.7, for S1 and S5 variable, demonstrate the high level of ownership concentration, that only in 6% of banks, the direct ownership concentration for S1 variable ranges between 0-24.99%, where the same range is 0% for S5 variable.

Table 4.4: Direct ownership concentration of 33 commercial banks traded in BSE

Range (%)	S1		S5	
	Frequency	%	Frequency	%
0-24.99	2	6%	0	0%
25-49.99	5	15%	2	6%
50-74.99	14	42%	7	21%
75-100	12	36%	24	73%
Total	33	100%	33	100%

There is a tremendous increase for the next range of 25-49.99%. 15% of commercial banks in Azerbaijan have direct ownership for S1 and 6% of banks for the S5 variables in the range of 25-49.99%. In addition, we can observe a substantial sharp increase to 42% of banks for the range of 50-74.99% for S1 and to 21% for S5 variables. However, this number decreased slightly to 36% for the range of 75-100% for S1. Meanwhile, there is an enormous positive change for the same range in S5 variable, where the ownership concentration increases to 73%, as it is shown in Table 4.4 and Figure 4.7.

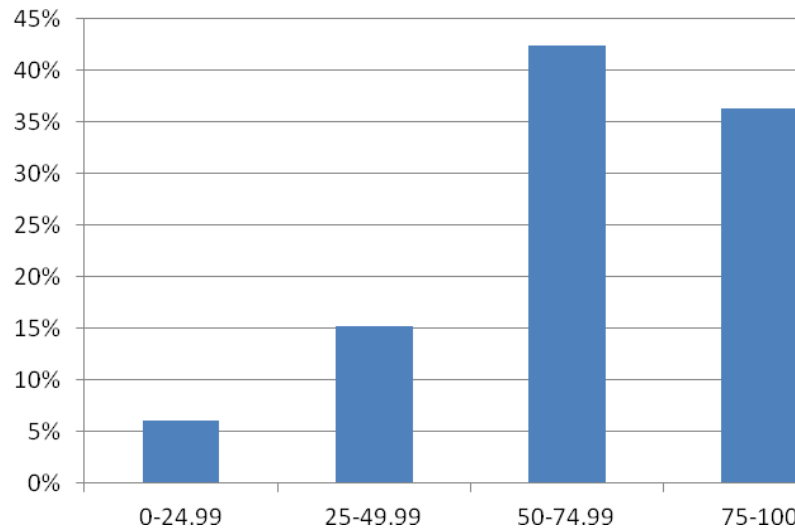


Figure 4.6: Frequency distribution for the highest percentage of ownership of the largest shareholder (S1)

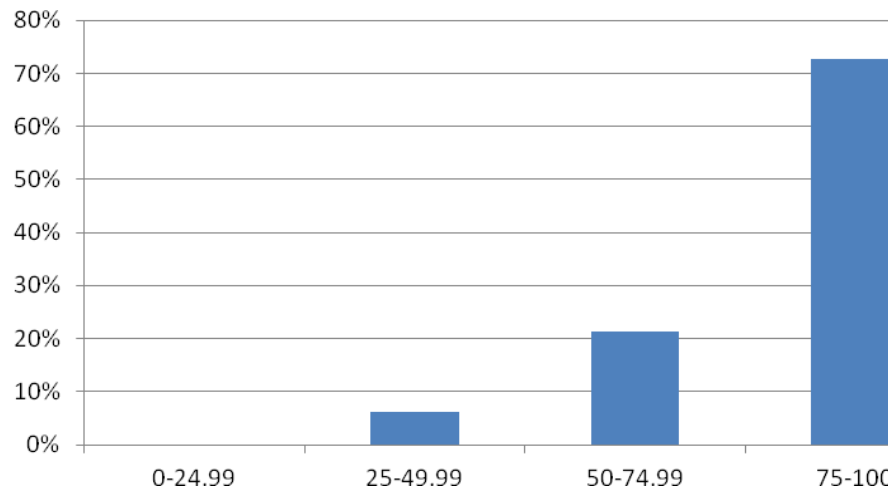


Figure 4.7: Frequency distribution for the total of top five highest ownership percentages (S5)

At the same time, Table 4.5 and Figures 4.8 and 4.9 give us an idea about ownership concentration of banks in the ranges of 0-50% and 51-100% for S1 and S5 variables. 27% of banks have direct ownership concentration in range of 0-50% in S1 variable.

Table 4.5: Direct ownership concentration of 33 commercial banks traded in BSE

Range (%)	S1		S5	
	Frequency	%	Frequency	%
0-50	9	27%	2	6%
51-100	24	73%	31	94%
Total	33	100%	33	100%

The rest 73% of banks have direct ownership concentration in range of 51-100%, which is obvious from Figure 4.8. As a real fact, these numbers are different for S5 variable. Only 6% of banks have direct ownership concentration in range of 0-50%. However, it increased dramatically to 94% for direct ownership concentration between the ranges of 51-100%, as it is shown in Figure 4.9.

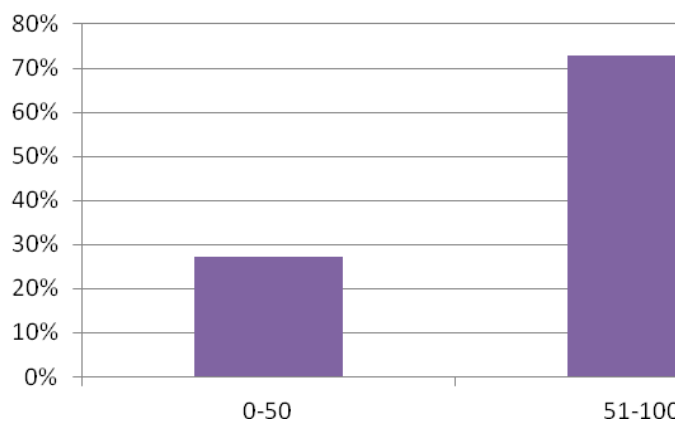


Figure 4.8: Frequency distribution for the highest percentage of ownership of the largest shareholder (S1)

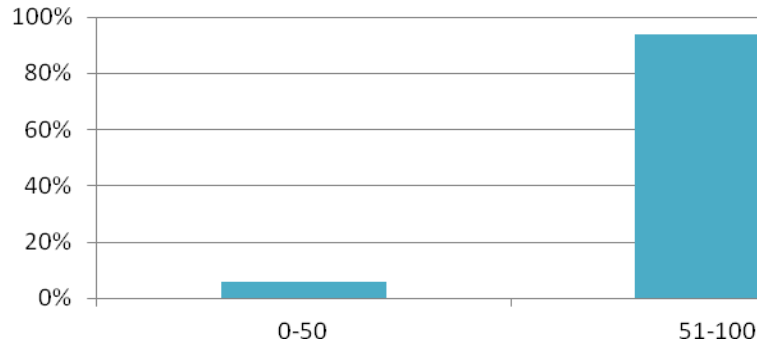


Figure 4.9: Frequency distribution for the total of top five highest ownership percentages (S5)

We analyze the type of direct owner with the highest percentage of shares in each bank listed in BSE according to the S1 variable¹⁰. As it is shown in Table 4.6, "Families" has dominant position in acquiring the highest percentage of stakes in direct ownership of the banks in Azerbaijan.

Table 4.6: Type of direct owners with the highest percentage of stakes in bank

Type of direct owner	Frequency of banks	Percentage of banks
State	1	3%
Holding companies	3	9%
Non-financial companies	5	15%
Individuals	7	21%
Families	11	33%
Foreign financial companies	4	12%
Financial companies	2	6%
Total	33	100%

"Families" own the highest percentage of shares in direct ownership in eleven banks, out of 33. In seven banks "Individuals" are the highest direct owners, which make 21% of total number of banks. Meanwhile, there are five banks where "Non-financial

¹⁰ We are looking for the type of direct owner who has the highest percentage of shares in each bank, which is a criterion according to S1 variable.

companies" own the highest percentage of traded shares. In twelve percent of listed banks or in four banks, "Foreign financial companies" has the highest percentage of direct ownership. However, "Financial companies" of the host country hold the highest percentage of shares only in two banks, which is 6% of listed banks in our example. Moreover, in three listed banks, the main shareholders are "Holding companies". There is just one "State" agency in our classification of direct owners from Table 4.1. In addition, this "State" agency is the highest shareholder among the stakeholders of the bank.

Overall, after analyzing all of the above given tables and figures, we can emphasize that most of direct owners in Azerbaijan commercial banks traded in Baku Stock Exchange own more than half of the shares in banks. This is obvious fact from Table 4.1, classifying the direct ownership stakes of 33 commercial banks. The average and median ownership stake for "Families" and "Financial companies" is rounding around 60-65%. Meanwhile, this indicator is about 80% for "Holding companies". Although there is just one "State agency" that has an ownership stake in bank, the share of state agency is more than the half of the shares, 50.2%. All these observations clearly indicate that the ownership structure in Azerbaijan commercial banks is highly concentrated. While we analyze the highest percentage of ownership of the largest shareholder (S1 variable) we define the fact that in majority of banks, in 33%, the highest ownership of shares is concentrated in 50-59.99% range, Figure 4.4. This is the clear evidence of "majority ownership" in ownership structure of banks. Moreover, further investigations of ownership structure with the total of top five highest ownership percentages of banks (S5 variable) show that there is a presence of "supermajority ownership", because

according to this criterion (S5) in 61% of banks the ownership concentration is in range of 90-100%, Figure 4.5.

How this highly concentrated ownership structure will affect the profitability measurements of banks, especially return on assets (ROA) and return on equity (ROE), will be shown in the following sections.

4.2 Data, Methodology and Hypotheses for Regression Analysis

We use prospectuses of 33 commercial banks, listed in Baku Stock Exchange (BSE), to analyze the direct ownership structure of banks and use data for ownership variables in our regression model. To get data for control variables, for financial ratios, we extract balance sheet and income statement numbers from the banks' "Consolidated Financial Statements and Independent Auditor's Report" prepared in accordance with the International Financial Reporting Standards for 2009, and we obtain these reports from the official web-sites of each bank. Because of the lack of information for two banks for 2009 we analyze 31 banks in our regression model. We use cross-sectional OLS regressions to analyze the relationship between performance, as a dependent variable, and ownership, control and dummy independent variables. The regression model looks like:

$$\mathbf{Performance}_i = \alpha + \beta_1 (\mathbf{ownership\ variables}) + \beta_2 (\mathbf{control\ variables}) + \beta_3 (\mathbf{Dummy\ variable}) + \mathbf{Error\ term\ (}U_i)$$

For the profitability-performance dependent variables, we use Return on Assets (ROA), which is the ratio of Net Income to Total Assets and Return on Equity (ROE), which is calculated as the ratio of Net Income to Total Equity. Both are profitability measures.

Ownership variables in our regression model include: the highest percentage of ownership of the largest shareholder (S1), the total of top five highest ownership percentages (S5) and the squares of S1 (SQS1) and S5 (SQS5) variables. We use squares of ownership variables in order to mitigate the non-linear relationship between ownership and performance, as it was used by Agrawal and Knoeber (1997) and Morck et al. (1989) in their studies.

In Table 4.7 we show the model variables and show the hypothesized relationships between the independent variables and the profitability measures of ROA and ROE. From our direct ownership structure analysis we conclude that the ownership in Azerbaijan banks is highly concentrated, even there is a supermajority ownership in banks. Hence, highly concentrated ownership leads to the issue of agency cost. As we know from agency theory, that up to certain point of ownership, agency cost might not be a problem. However, after that threshold point, highly concentrated ownership structure could lead to possible exploitation of minority shareholders which can lead to decrease in profitability measurements of ROA and ROE. Based on this theory and the high level of ownership concentration for our sample banks, we expect that ownership variables will affect negatively ROA and ROE as shown in Table 4.7.

Table 4.7: Definition of variables used in the regression model and their expected signs

Variables	Definitions	Expected sign
ROE	Return on Equity	Depend. Var.
ROA	Return on Assets	Depend. Var.
S1	The highest percentage of ownership of the largest shareholder (> 10%)	Negative
SQS1	Square of the highest percentage of ownership	Negative
S5	The total of top five highest ownership percentages	Negative
SQS5	Square of the total of top five highest ownership percentages	Negative
FOREIGN	Dummy variable - foreign ownership	Positive
LNASSETS	Total assets' natural logarithm	?
LQ	Liquidity (Loans/Deposits)	Positive
LV	Leverage (Equity/Assets)	Positive
R_ISK	Risk (Loan loss provision/Loans)	Negative

For the control variables in the regression, we use natural logarithm of total assets of banks (LNASSETS), liquidity (LQ), leverage (LV) and risk (R_ISK) as it is given in Table 4.7.

Natural logarithm of total assets of banks (LNASSETS) shows how asset size of bank affects the profitability measurements. In our hypothesis regarding to LNASSETS, we cannot forecast the exact sign of coefficient. Increase in asset size can cause to inefficient management of bank, which can affect negatively to the profitability. On the other hand, asset size increase lead to grow for the loans of the bank and consequently to expand the interest income, which will affect positively to profitability measurements. Liquidity (LQ) is the ratio of total loans to total deposits for each bank. According to Athanasoglu et al. (2006), we use the liquidity ratio to observe the reaction of bank either to increase in demand for funds to meet heightened assets or to decrease in the liability side, deposits. Moreover, Spathis et al. (2002) state that increase in ratio (LQ) lead to decline liquidity of bank. However, this reduction can positively affect

profitability. Because efficient use of deposits for investment in increased loans, result to intensive flow of interest income from loans. Consequently, we are assuming for liquidity coefficient to be positive. Moreover, we use Leverage (LV) as another control variable. We take Leverage as the ratio of Total Equity to Total Assets. It is better if this ratio is higher to the certain point. High leverage ratio gives us an idea that bank finances its assets through equity rather than through borrowing. Hence, this policy of financing should cut interest expenses and increase net income at the same time. This idea prompts us that there is a positive effect of Leverage ratio (LV) to ROA and ROE. We take risk (R_ISK) as the ratio of Loan loss provision (or non-performing loans) to Total loans. If share of non-performing loans is higher in total loans in banks, then there is a high probability of having less interest income and consequently net income at the end of period. That is why we expect the credit risk to have negative impact on the profitability of banks. Finally, there is just one dummy variable in our regression model, which is presence of foreign shareholder (FOREIGN) in ownership structure of banks. We assume that if bank has at least one foreign shareholder within the owners of bank's outstanding shares, this foreign investor will insist on getting higher results for profitability indicator ratios, which are ROA and ROE in our case. He will make pressure on the management to utilize the wealth of the bank in a way that it will come up to higher profitability at the end. Consequently, foreign ownership (FOREIGN) should have positive effect on profitability. We indicate "1" if bank has foreign shareholder in its ownership structure, otherwise we put "0" in regression model.

4.3 Direct Ownership and Profitability Regression Results

Table 4.8 describes the descriptive statistic results for the dependent and independent variables of our model. Mean and median for the Liquidity (LQ) is above 1 and approximately near to each other. For the Leverage (LV), the average and median is 0.23 and 0.15, respectively.

Table 4.8: Descriptive statistics of variables (n=31 observations)

Variable	Mean	Median	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	P-Value
LNASSETS	11.75253	11.74863	1.11925	0.783948	3.82398	4.052279	0.131844
LQ	1.120479	1.053387	0.56335	1.416447	6.58255	26.94408	0.000001
LV	0.231352	0.152716	0.16177	1.365215	3.96304	10.82765	0.004455
R_ISK	0.033699	0.027982	0.02936	1.788536	6.73605	34.55665	0
ROA	0.010076	0.010758	0.03371	-0.95745	7.22328	27.77459	0.000001
ROE	-0.05653	0.060092	0.74042	-5.15971	28.1173	952.4374	0
S1	0.645529	0.5852	0.25414	-0.22316	2.27425	0.937644	0.625739
S5	0.852377	0.92	0.19064	-1.46871	4.32739	13.42099	0.001218
SQS1	0.479212	0.342459	0.32171	0.409177	1.90025	2.427252	0.297118
SQS5	0.761717	0.8464	0.27521	-1.0542	2.93513	5.747307	0.056492

Table 4.8 shows that the lowest average and median number is given for the profitability measurements of ROA and ROE. Even the average of ROE turn out to be negative number, -0.06. However, the lower average and median of risk variable indicate a less riskiness of given banks. The mean and median for the risk variable is 0.034 and 0.027 respectively. Moreover, the mean and median for S1 and S5 variable in Table 4.8 again highlight the high level of ownership concentration in Azerbaijan banks. According to Jarque-Bera test some of the variables are not normally distributed, but due to our small sample size we cannot correct it. LNASSETS, S1 and SQS1 are normally distributed.

For correlation analysis, we use the correlation matrix and use the Pearson test to check for the multicollinearity problem.

Table 4.9: Correlation matrix with dependent variable of ROA

	ROA	LNASSETS	LQ	LV	R_ISK	S1	S5	SQS1	SQS5
ROA	1	-0.05	0.10	0.13	-0.38	-0.15	-0.35	-0.11	-0.36
<i>P-Value</i>		0.77	0.58	0.47	0.03	0.41	0.05	0.57	0.05
LNASSETS		1.00	-0.13	-0.68	0.09	0.05	-0.09	0.05	-0.09
<i>P-Value</i>			0.49	0.00	0.62	0.80	0.61	0.78	0.61
LQ			1.00	0.25	-0.04	-0.27	-0.24	-0.26	-0.24
<i>P-Value</i>				0.18	0.81	0.14	0.20	0.15	0.19
LV				1.00	-0.20	0.01	0.02	0.01	0.03
<i>P-Value</i>					0.28	0.97	0.91	0.96	0.89
R_ISK					1.00	-0.05	0.03	-0.08	0.03
<i>P-Value</i>						0.77	0.86	0.67	0.86
S1						1.00	0.69	0.98	0.69
<i>P-Value</i>							0.00	0.00	0.00
S5							1.00	0.61	0.99
<i>P-Value</i>								0.00	0.00
SQS1								1.00	0.62
<i>P-Value</i>									0.00
SQS5									1.00

Table 4.10: Correlation matrix with dependent variable of ROE

	ROE	LNASSETS	LQ	LV	R_ISK	S1	S5	SQS1	SQS5
ROE	1	0.03	0.08	0.20	-0.64	-0.09	-0.17	-0.06	-0.18
<i>P-Value</i>		0.87	0.66	0.28	0.00	0.61	0.37	0.73	0.33
LNASSETS		1.00	-0.13	-0.68	0.09	0.05	-0.09	0.05	-0.09
<i>P-Value</i>			0.49	0.00	0.62	0.80	0.61	0.78	0.61
LQ			1.00	0.25	-0.04	-0.27	-0.24	-0.26	-0.24
<i>P-Value</i>				0.18	0.81	0.14	0.20	0.15	0.19
LV				1.00	-0.20	0.01	0.02	0.01	0.03
<i>P-Value</i>					0.28	0.97	0.91	0.96	0.89
R_ISK					1.00	-0.05	0.03	-0.08	0.03
<i>P-Value</i>						0.77	0.86	0.67	0.86
S1						1.00	0.69	0.98	0.69
<i>P-Value</i>							0.00	0.00	0.00
S5							1.00	0.61	0.99
<i>P-Value</i>								0.00	0.00
SQS1								1.00	0.62
<i>P-Value</i>									0.00
SQS5									1.00

Table 4.9 and Table 4.10 reveal that there is a statistically significant correlation between leverage (LV) and natural logarithm of total assets (LNASSETS). The degree of correlation is 68%, indicating a multicollinearity problem in our model.

Therefore, in order to avoid the multicollinearity problem, we estimate our equation by not having both LV and LNASSETS together in the equation. Additionally, Table 4.9 shows that there is statistically significant negative correlation between ROA and risk (R_ISK), which is -38%. We get the same result in Table 4.10. It indicates statistically significant negative correlation between ROE and risk (R_ISK), which is -64% in this case.

By checking our regression results for heteroskedasticity, we detected this problem by using Heteroskedasticity-White test and Breusch-Pagan-Godfrey test. Then we solved heteroskedasticity problem using White test. Results of regression models without and with adjustment to Heteroskedasticity problem are given in the Appendix.

In the following sections, we only present the regression results in which the model control variables are jointly not equal to zero, based on the F-test. We run our regression equation including only one ownership variable, which is square of S5 (SqS5), the control variables and dummy variable of foreign ownership (FOREIGN). As we mentioned before, we used leverage (LV) and the size of banks (LNASSETS) in separate equations, because of the statistically significant high correlation between these

two control variables. In Table 4.11, we describe the results of the most statistically significant models among other equations with dependent variables of ROA and ROE.

Coefficient of foreign ownership (FOREIGN), which is dummy variable in our model, affect negatively to ROA, which is given in Table 4.11. However, this variable is not statistically significant for this equation. Only Leverage (LV) has positive sign of coefficient among control variables in the model. Meanwhile, Liquidity (LQ) and Risk (R_ISK) have negative effect to the performance (ROA). All control variables are not statistically significant in our estimated equation, based on the probability results of t-statistic. At the same time, ownership variable, square of S5 (SQS5) has a negative sign and statistically significant at 10% level of significance in Table 4.11. Overall, our model is statistically significant, because as we can see from Table 4.11, F-test in the model with ROA dependent variable is significant at 10% probability level. Adjusted R^2 is 13.13%, and Durbin-Watson test indicate that there is no autocorrelation (serial correlation) problem, typically detected in time series regressions.

Table 4.11: Regression results of the equation with dependent variable ROA

Dependent variable	ROA
Const	0.0551*
	(1.9561)
	[0.0617]
FOREIGN	-0.0056
	(-0.4675)
	[0.6442]
LQ	-0.0001
	(-0.0159)
	[0.9874]
LV	0.0135
	(0.2648)
	[0.7933]
R_ISK	-0.4220
	(-1.3282)
	[0.1961]
SQS5	-0.0426*
	(-1.7034)
	[0.1009]
n	31
Adj Rsq	0.1313
S.E. of Regression	0.0314
Durbin Watson stat.	2.1102
F test	1.9269
Prob (F-statistic)	[0.0990]

*P-Value < 0.1, t-statistics in parentheses, p-values in brackets

The results of regression analysis are approximately the same in the estimated model with dependent variable of ROE. However, presence of foreign ownership (FOREIGN) has positive effect to the performance (ROE), but again is not statistically significant, as it is obvious in Table 4.12.

Table 4.12: Regression results of the equation with dependent variable ROE

Dependent variable	ROE
Const	0.7153
	(1.6438)
	[0.1127]
FOREIGN	0.0804
	(0.6362)
	[0.5305]
LQ	-0.0209
	(-0.1543)
	[0.8786]
LV	0.4103
	(0.7795)
	[0.4430]
R_ISK	-15.444
	(-1.5197)
	[0.1411]
SQS5	-0.4512
	(-1.4002)
	[0.1737]
n	31
Adj Rsq	0.3348
S.E. of Regression	0.6039
Durbin Watson stat.	1.7260
F test	4.0193
Prob(F-statistic)	[0.0082]

T-statistics in parentheses, p-values in brackets

Again, leverage (LV) within the control variables has positive sign of coefficient, where liquidity (LQ) and risk (R_ISK) affected negatively the profitability measure (ROE). Probabilities of t-statistics of control variables in Table 4.12 certify that these variables are not statistically significant for the model. Ownership variable, square of S5 (SQS5), has negative effect to ROE as well, but statistically insignificant at conventional levels.

Nevertheless, our equation with dependent variable ROE is overall statistically significant with 1% level of probability, according to probability (F-statistics) in Table 4.12, which is 0.0082.

Adjusted R² substantially increased to 33.48% in the model with ROE, and there is no autocorrelation issue, which is asserted by Durbin-Watson test (1.726).

In Table 4.13 there is a comparison of expected signs with estimated signs of independent variables, affecting the dependent profitability variables ROA and ROE.

Table 4.13: Comparing of expected signs with estimated signs

Variables	Expected	ROA	ROE
S1	Negative	Negative	Negative
SqS1	Negative	Negative	Negative
S5	Negative	Negative	Negative
SqS5	Negative	Negative*	Negative
FOREIGN	Positive	Negative	Positive
LNASSETS	?	Negative/Positive	Positive
LQ	Positive	Negative	Negative
LV	Positive	Positive	Positive
R_ISK	Negative	Negative	Negative

*P-Value<0.1

For all ownership variables, we were expecting to get negative signs for coefficients. And our ownership coefficient signs turn out to be negative in line with our expectations. In other words, concentrated ownership in banks lead to decrease in performance variables. Hence, as we mentioned before after a certain point of ownership highly concentrated ownership structure results in abusing minority shareholders,

resulting in lower profitability. However, we have only square of S5 (SQS5) in our equation with ROA dependent variable to be statistically significant.

We were expecting that presence of foreign shareholder in ownership structure of banks (FOREIGN) would have positive effect on profitability. This is true for the dependent variable ROE. Nevertheless, the effect of foreign ownership is reverse of our expectation for the dependent variable ROA. Banks with foreign ownership of shares in Azerbaijan cannot utilize their assets in proper way, which results to their low profitability. But again, foreign ownership is not statistically significant in the model.

We were in dilemma about the size effect of banks, the natural logarithm of total assets (LNASSETS). Results of equation in Table 4.13 show that in some cases LNASSETS affect to ROA positively and in some cases negatively. However, the relationship between return on equity and size of the banks (LNASSETS) is positive. Unfortunately, this control variable turned up to be statistically insignificant in our model as well.

Response of both ROA and ROE is negative to changes in Liquidity (LQ) and Risk (R_ISK) in our equation. Estimations of equation proved our expectation for Risk variable. This is logical that as the non-performing loans increase, the profitability of the bank decreases. However, the case for Liquidity (LQ) was different in our Table 4.7, where we expected that enhancement of liquidity position of banks would positively affect to the profitability measurements. On the other hand, Leverage (LV) affected positively to profitability variables, ROA and ROE. In this case we were expecting positive effect as well, because increase in leverage (capital adequacy) leads to an idea

that the weight of equity in financing of assets is higher than debt. Thus, lower debt result to less interest expenses, which can increase the profitability of the bank. There is only one problem, that all the control variables are not statistically significant at all.

Chapter 5

CONCLUSION

In this thesis, we investigated the direct ownership structure of commercial banks operating in Azerbaijan and listed in Baku Stock Exchange (BSE). We analyzed 33 banks for the direct ownership structure and the ownership type analysis for 2009. Moreover, we ran a regression to check the relationship between the highly concentrated ownership structure of Azerbaijan banks and profitability, and to detect effect of some control variables on profitability measures of 31 banks in 2009.

We can divide our findings into two parts. In first part, we present the literature review of bank ownership structure and its effect on profitability in developing and transition countries. However, the results differed from country to country. The domination of foreign ownership was the common characteristic for almost all banking sector of transition countries. The reaction of banks' profitability to the foreign ownership was different in every country. In addition, we reviewed the banking sector of Azerbaijan from 1991 till 2011. Our analyses show that there were a lot of significant changes in the ownership structure, financial performance, efficiency and the degree of ownership concentration. We also discuss the Standard & Poor's research team study on "Transparency and disclosure by Azerbaijani banks" for 2010. The main criteria of their survey were the disclosure of ownership and corporate structure, corporate procedures,

financial information, operational information, board and management information. Their results show that the average score of Azerbaijani Banking Transparency Index equaled to 30% among 30 largest banks. Unfortunately, this index was relatively low relative to the 30 Russian largest banks with 52% score in 2007 and the 30 largest Ukrainian banks with an average score of 43% in 2010.

The second part includes the empirical analysis of direct ownership structure and its effect on the profitability of Azerbaijan commercial banks. Based on the ownership structure literature, in analyzing the ownership structure of banks, we concluded that banks in Azerbaijan had “majority ownership”, according to the highest percentage of ownership of the largest shareholder (S1) and “supermajority ownership” according to the total of top five highest ownership percentages (S5). Direct ownership type analysis showed that "Families" had dominant position in acquiring the highest percentage of stakes in direct ownership of the banks in Azerbaijan. "Families" owned the highest percentage of shares (S1) in direct ownership in eleven banks out of 33. In seven banks, "Individuals" were the highest direct owners, 21% of total number of banks. Meanwhile, there were five banks where "Non-financial companies" owned the highest percentage of traded shares.

Subsequently, we ran a regression analysis to see how the highly concentrated ownership affected the profitability measures of banks, return on assets (ROA) and return on equity (ROE). Moreover, we included control variables (financial ratios) and a dummy variable (foreign ownership) as independent variables in our equation. The results showed that there is statistically insignificant negative relationship between direct

ownership structure variables and profitability measurements in Azerbaijan banks. However, only square of S5 variable (SQS5) for direct ownership structure variables turned out to be statistically significant independent variable for ROA dependent variable, in regression model. Thus, there is a non-linear quadratic relationship between square of S5 variable (SQS5) and profitability measure ROA in our regression model. Nevertheless, it had a negative effect on the ROA of banks in 2009.

Control variables included in regression analysis were: Liquidity (LQ), natural logarithm of total assets of banks (LNASSETS), Leverage (LV) and Risk (R_ISK). The result of regression analysis showed that control variables were not statistically significant at conventional levels. Meanwhile, the dummy variable, for the presence of foreign shareholder was not statistically significant for the model. We believe that the results of our regression analysis would have better if we had investigated bank financial ratios for more than one year. We had restrictions on getting data, due to the lack of information for the banks in recent years.

At the end, we would like to have some suggestions for the policymakers and regulators of financial sector. As we mentioned before, the highly concentrated ownership can increase the agency problem between managers, agents and shareholders (principles), leading to the poor protection of rights of minority shareholders. As La Porta et al. (1999) state that many of the corporations are highly concentrated in countries where there is weak investor protection and weak financial markets. Overall, our suggestion is to build strong financial markets with effective regulations and supervision where it is possible to protect the rights of both minority and majority shareholders.

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APPENDICES

**Appendix A: Regression analysis results with dependent variable ROA.
With and without correction to Heteroskedasticity problem.**

Table 1:

Dependent Variable: ROA
Method: Least Squares
Date: 06/17/12 Time: 13:25
Sample: 1 31
Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.032083	0.069448	0.461976	0.6481
FOREIGN	-0.013693	0.015095	-0.907164	0.3730
LNASSETS	0.001137	0.005621	0.202270	0.8413
LQ	0.003324	0.011215	0.296382	0.7694
R_ISK	-0.481519	0.209785	-2.295294	0.0304
S1	-0.029949	0.026287	-1.139301	0.2654
R-squared	0.204823	Mean dependent var	0.010076	
Adjusted R-squared	0.045788	S.D. dependent var	0.033710	
S.E. of regression	0.032929	Akaike info criterion	-3.816929	
Sum squared resid	0.027108	Schwarz criterion	-3.539383	
Log likelihood	65.16240	Hannan-Quinn criter.	-3.726456	
F-statistic	1.287910	Durbin-Watson stat	2.064986	
Prob(F-statistic)	0.300479			

Heteroskedasticity Test: White

F-statistic	2.734032	Prob. F(19,11)	0.0455
Obs*R-squared	25.58271	Prob. Chi-Square(19)	0.1422
Scaled explained SS	23.11721	Prob. Chi-Square(19)	0.2322

Dependent Variable: ROA
Method: Least Squares
Date: 06/17/12 Time: 13:31
Sample: 1 31
Included observations: 31
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.032083	0.071630	0.447908	0.6581

FOREIGN	-0.013693	0.014032	-0.975871	0.3385
LNASSETS	0.001137	0.005371	0.211680	0.8341
LQ	0.003324	0.007703	0.431516	0.6698
R_ISK	-0.481519	0.337975	-1.424720	0.1666
S1	-0.029949	0.024963	-1.199745	0.2415
R-squared	0.204823	Mean dependent var	0.010076	
Adjusted R-squared	0.045788	S.D. dependent var	0.033710	
S.E. of regression	0.032929	Akaike info criterion	-3.816929	
Sum squared resid	0.027108	Schwarz criterion	-3.539383	
Log likelihood	65.16240	Hannan-Quinn criter.	-3.726456	
F-statistic	1.287910	Durbin-Watson stat	2.064986	
Prob(F-statistic)	0.300479			

Tabele 2:

Dependent Variable: ROA
Method: Least Squares
Date: 06/17/12 Time: 13:43
Sample: 1 31
Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.043801	0.027898	1.570045	0.1290
FOREIGN	-0.012609	0.014731	-0.855915	0.4002
LV	0.006623	0.039560	0.167426	0.8684
LQ	0.002519	0.011524	0.218566	0.8288
R_ISK	-0.468574	0.212701	-2.202965	0.0370
S1	-0.029486	0.026154	-1.127397	0.2703
R-squared	0.204414	Mean dependent var	0.010076	
Adjusted R-squared	0.045297	S.D. dependent var	0.033710	
S.E. of regression	0.032938	Akaike info criterion	-3.816414	
Sum squared resid	0.027122	Schwarz criterion	-3.538869	
Log likelihood	65.15442	Hannan-Quinn criter.	-3.725941	
F-statistic	1.284676	Durbin-Watson stat	2.042377	
Prob(F-statistic)	0.301784			

Heteroskedasticity Test: White

F-statistic	3.930869	Prob. F(19,11)	0.0121
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Obs*R-squared	27.02038	Prob. Chi-Square(19)	0.1042
Scaled explained SS	24.20385	Prob. Chi-Square(19)	0.1884

Dependent Variable: ROA

Method: Least Squares

Date: 06/17/12 Time: 13:46

Sample: 1 31

Included observations: 31

White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.043801	0.026570	1.648516	0.1118
FOREIGN	-0.012609	0.015209	-0.829063	0.4149
LV	0.006623	0.057607	0.114975	0.9094
LQ	0.002519	0.006937	0.363086	0.7196
R_ISK	-0.468574	0.326714	-1.434201	0.1639
S1	-0.029486	0.025361	-1.162640	0.2560
R-squared	0.204414	Mean dependent var	0.010076	
Adjusted R-squared	0.045297	S.D. dependent var	0.033710	
S.E. of regression	0.032938	Akaike info criterion	-3.816414	
Sum squared resid	0.027122	Schwarz criterion	-3.538869	
Log likelihood	65.15442	Hannan-Quinn criter.	-3.725941	
F-statistic	1.284676	Durbin-Watson stat	2.042377	
Prob(F-statistic)	0.301784			

Table 3:

Dependent Variable: ROA

Method: Least Squares

Date: 06/17/12 Time: 13:53

Sample: 1 31

Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.033248	0.023302	1.426834	0.1660
FOREIGN	-0.011997	0.014997	-0.799973	0.4313
LV	0.006097	0.039884	0.152859	0.8797

LQ	0.003196	0.011591	0.275763	0.7850
R_ISK	-0.470296	0.215373	-2.183634	0.0386
SQS1	-0.019237	0.021024	-0.915025	0.3689
R-squared	0.191058	Mean dependent var	0.010076	
Adjusted R-squared	0.029269	S.D. dependent var	0.033710	
S.E. of regression	0.033213	Akaike info criterion	-3.799766	
Sum squared resid	0.027578	Schwarz criterion	-3.522220	
Log likelihood	64.89637	Hannan-Quinn criter.	-3.709293	
F-statistic	1.180912	Durbin-Watson stat	2.045926	
Prob(F-statistic)	0.346450			

Heteroskedasticity Test: White

F-statistic	3.441361	Prob. F(19,11)	0.0201
Obs*R-squared	26.53582	Prob. Chi-Square(19)	0.1159
Scaled explained SS	24.85134	Prob. Chi-Square(19)	0.1655

Dependent Variable: ROA

Method: Least Squares

Date: 06/17/12 Time: 13:55

Sample: 1 31

Included observations: 31

White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.033248	0.021537	1.543786	0.1352
FOREIGN	-0.011997	0.015203	-0.789162	0.4374
LV	0.006097	0.058379	0.104433	0.9177
LQ	0.003196	0.007221	0.442657	0.6618
R_ISK	-0.470296	0.332188	-1.415753	0.1692
SQS1	-0.019237	0.019529	-0.985040	0.3340
R-squared	0.191058	Mean dependent var	0.010076	
Adjusted R-squared	0.029269	S.D. dependent var	0.033710	
S.E. of regression	0.033213	Akaike info criterion	-3.799766	
Sum squared resid	0.027578	Schwarz criterion	-3.522220	
Log likelihood	64.89637	Hannan-Quinn criter.	-3.709293	
F-statistic	1.180912	Durbin-Watson stat	2.045926	
Prob(F-statistic)	0.346450			

Table 4:

Dependent Variable: ROA
 Method: Least Squares
 Date: 06/17/12 Time: 13:56
 Sample: 1 31
 Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.021691	0.068740	0.315552	0.7550
FOREIGN	-0.013072	0.015391	-0.849345	0.4037
LNASSETS	0.001111	0.005679	0.195564	0.8465
LQ	0.003943	0.011282	0.349533	0.7296
R_ISK	-0.482792	0.212580	-2.271107	0.0320
SQS1	-0.019704	0.021175	-0.930524	0.3610
R-squared	0.191539	Mean dependent var	0.010076	
Adjusted R-squared	0.029846	S.D. dependent var	0.033710	
S.E. of regression	0.033203	Akaike info criterion	-3.800360	
Sum squared resid	0.027561	Schwarz criterion	-3.522814	
Log likelihood	64.90559	Hannan-Quinn criter.	-3.709887	
F-statistic	1.184587	Durbin-Watson stat	2.066348	
Prob(F-statistic)	0.344773			

Heteroskedasticity Test: White

F-statistic	2.351445	Prob. F(19,11)	0.0742
Obs*R-squared	24.87544	Prob. Chi-Square(19)	0.1647
Scaled explained SS	23.51601	Prob. Chi-Square(19)	0.2154

Dependent Variable: ROA
 Method: Least Squares
 Date: 06/17/12 Time: 13:57
 Sample: 1 31
 Included observations: 31
 White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.021691	0.069092	0.313944	0.7562
FOREIGN	-0.013072	0.013970	-0.935701	0.3584
LNASSETS	0.001111	0.005378	0.206505	0.8381
LQ	0.003943	0.007956	0.495626	0.6245
R_ISK	-0.482792	0.343697	-1.404702	0.1724
SQS1	-0.019704	0.018850	-1.045321	0.3059
R-squared	0.191539	Mean dependent var	0.010076	
Adjusted R-squared	0.029846	S.D. dependent var	0.033710	
S.E. of regression	0.033203	Akaike info criterion	-3.800360	
Sum squared resid	0.027561	Schwarz criterion	-3.522814	
Log likelihood	64.90559	Hannan-Quinn criter.	-3.709887	
F-statistic	1.184587	Durbin-Watson stat	2.066348	
Prob(F-statistic)	0.344773			

Table 5:

Dependent Variable: ROA
Method: Least Squares
Date: 06/17/12 Time: 13:58
Sample: 1 31
Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.088341	0.075976	1.162744	0.2559
FOREIGN	-0.005184	0.013650	-0.379737	0.7073
LNASSETS	-0.001082	0.005431	-0.199165	0.8437
LQ	0.000784	0.010884	0.072048	0.9431
R_ISK	-0.431822	0.200033	-2.158753	0.0407
S5	-0.059296	0.031619	-1.875297	0.0725
R-squared	0.266692	Mean dependent var	0.010076	
Adjusted R-squared	0.120030	S.D. dependent var	0.033710	
S.E. of regression	0.031622	Akaike info criterion	-3.897927	
Sum squared resid	0.024999	Schwarz criterion	-3.620381	
Log likelihood	66.41787	Hannan-Quinn criter.	-3.807454	
F-statistic	1.818415	Durbin-Watson stat	2.088749	
Prob(F-statistic)	0.145668			

Heteroskedasticity Test: White

F-statistic	8.797764	Prob. F(19,11)	0.0004
Obs*R-squared	29.08596	Prob. Chi-Square(19)	0.0646
Scaled explained SS	21.77257	Prob. Chi-Square(19)	0.2957

Dependent Variable: ROA

Method: Least Squares

Date: 06/17/12 Time: 13:59

Sample: 1 31

Included observations: 31

White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.088341	0.089854	0.983163	0.3349
FOREIGN	-0.005184	0.010483	-0.494487	0.6253
LNASSETS	-0.001082	0.005617	-0.192570	0.8489
LQ	0.000784	0.006430	0.121950	0.9039
R_ISK	-0.431822	0.335362	-1.287631	0.2097
S5	-0.059296	0.038955	-1.522172	0.1405
R-squared	0.266692	Mean dependent var	0.010076	
Adjusted R-squared	0.120030	S.D. dependent var	0.033710	
S.E. of regression	0.031622	Akaike info criterion	-3.897927	
Sum squared resid	0.024999	Schwarz criterion	-3.620381	
Log likelihood	66.41787	Hannan-Quinn criter.	-3.807454	
F-statistic	1.818415	Durbin-Watson stat	2.088749	
Prob(F-statistic)	0.145668			

Table 6:

Dependent Variable: ROA

Method: Least Squares

Date: 06/17/12 Time: 14:00

Sample: 1 31

Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
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C	0.073119	0.032977	2.217287	0.0359
FOREIGN	-0.005157	0.013374	-0.385587	0.7031
LV	0.013039	0.038113	0.342109	0.7351
LQ	0.000135	0.011110	0.012127	0.9904
R_ISK	-0.421801	0.202952	-2.078331	0.0481
S5	-0.059440	0.031370	-1.894786	0.0697
R-squared	0.268951	Mean dependent var	0.010076	
Adjusted R-squared	0.122741	S.D. dependent var	0.033710	
S.E. of regression	0.031573	Akaike info criterion	-3.901012	
Sum squared resid	0.024922	Schwarz criterion	-3.623466	
Log likelihood	66.46569	Hannan-Quinn criter.	-3.810539	
F-statistic	1.839483	Durbin-Watson stat	2.100159	
Prob(F-statistic)	0.141506			

Heteroskedasticity Test: White

F-statistic	10.76805	Prob. F(19,11)	0.0001
Obs*R-squared	29.41831	Prob. Chi-Square(19)	0.0597
Scaled explained SS	21.66210	Prob. Chi-Square(19)	0.3014

Dependent Variable: ROA

Method: Least Squares

Date: 06/17/12 Time: 14:01

Sample: 1 31

Included observations: 31

White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.073119	0.038893	1.880003	0.0718
FOREIGN	-0.005157	0.011936	-0.432031	0.6694
LV	0.013039	0.052165	0.249952	0.8047
LQ	0.000135	0.005325	0.025304	0.9800
R_ISK	-0.421801	0.321206	-1.313179	0.2010
S5	-0.059440	0.037063	-1.603758	0.1213
R-squared	0.268951	Mean dependent var	0.010076	
Adjusted R-squared	0.122741	S.D. dependent var	0.033710	
S.E. of regression	0.031573	Akaike info criterion	-3.901012	
Sum squared resid	0.024922	Schwarz criterion	-3.623466	
Log likelihood	66.46569	Hannan-Quinn criter.	-3.810539	

F-statistic	1.839483	Durbin-Watson stat	2.100159
Prob(F-statistic)	0.141506		

Table 7:

Dependent Variable: ROA
Method: Least Squares
Date: 06/17/12 Time: 14:01
Sample: 1 31
Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.055118	0.024664	2.234738	0.0346
FOREIGN	-0.005576	0.013292	-0.419501	0.6784
LV	0.013541	0.037940	0.356910	0.7242
LQ	-8.75E-05	0.011061	-0.007915	0.9937
R_ISK	-0.421998	0.201936	-2.089763	0.0470
SQS5	-0.042557	0.021628	-1.967703	0.0603
R-squared	0.276082	Mean dependent var	0.010076	
Adjusted R-squared	0.131298	S.D. dependent var	0.033710	
S.E. of regression	0.031419	Akaike info criterion	-3.910815	
Sum squared resid	0.024679	Schwarz criterion	-3.633269	
Log likelihood	66.61763	Hannan-Quinn criter.	-3.820342	
F-statistic	1.926859	Durbin-Watson stat	2.110196	
Prob(F-statistic)	0.098980			

Heteroskedasticity Test: White

F-statistic	9.185860	Prob. F(19,11)	0.0003
Obs*R-squared	29.16204	Prob. Chi-Square(19)	0.0635
Scaled explained SS	20.96939	Prob. Chi-Square(19)	0.3385

Dependent Variable: ROA
Method: Least Squares

Date: 06/17/12 Time: 14:02

Sample: 1 31

Included observations: 31

White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.055118	0.028177	1.956148	0.0617
FOREIGN	-0.005576	0.011928	-0.467462	0.6442
LV	0.013541	0.051138	0.264796	0.7933
LQ	-8.75E-05	0.005508	-0.015894	0.9874
R_ISK	-0.421998	0.317732	-1.328158	0.1961
SQS5	-0.042557	0.024984	-1.703375	0.1009
R-squared	0.276082	Mean dependent var	0.010076	
Adjusted R-squared	0.131298	S.D. dependent var	0.033710	
S.E. of regression	0.031419	Akaike info criterion	-3.910815	
Sum squared resid	0.024679	Schwarz criterion	-3.633269	
Log likelihood	66.61763	Hannan-Quinn criter.	-3.820342	
F-statistic	1.906859	Durbin-Watson stat	2.110196	
Prob(F-statistic)	0.128980			

Table 8:

Dependent Variable: ROA

Method: Least Squares

Date: 06/17/12 Time: 14:03

Sample: 1 31

Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.070556	0.070826	0.996192	0.3287
FOREIGN	-0.005622	0.013562	-0.414532	0.6820
LNASSETS	-0.001092	0.005402	-0.202227	0.8414
LQ	0.000604	0.010833	0.055756	0.9560
R_ISK	-0.432555	0.199057	-2.173019	0.0395
SQS5	-0.042392	0.021783	-1.946076	0.0630
R-squared	0.273582	Mean dependent var	0.010076	
Adjusted R-squared	0.128298	S.D. dependent var	0.033710	
S.E. of regression	0.031473	Akaike info criterion	-3.907367	
Sum squared resid	0.024764	Schwarz criterion	-3.629821	
Log likelihood	66.56419	Hannan-Quinn criter.	-3.816894	
F-statistic	1.883085	Durbin-Watson stat	2.101043	

Prob(F-statistic) 0.133267

Heteroskedasticity Test: White

F-statistic	8.905461	Prob. F(19,11)	0.0003
Obs*R-squared	29.10770	Prob. Chi-Square(19)	0.0643
Scaled explained SS	21.41032	Prob. Chi-Square(19)	0.3146

Dependent Variable: ROA

Method: Least Squares

Date: 06/17/12 Time: 14:04

Sample: 1 31

Included observations: 31

White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.070556	0.081204	0.868883	0.3932
FOREIGN	-0.005622	0.010462	-0.537384	0.5958
LNASSETS	-0.001092	0.005611	-0.194698	0.8472
LQ	0.000604	0.006618	0.091270	0.9280
R_ISK	-0.432555	0.331774	-1.303766	0.2042
SQS5	-0.042392	0.026220	-1.616746	0.1185

R-squared	0.273582	Mean dependent var	0.010076
Adjusted R-squared	0.128298	S.D. dependent var	0.033710
S.E. of regression	0.031473	Akaike info criterion	-3.907367
Sum squared resid	0.024764	Schwarz criterion	-3.629821
Log likelihood	66.56419	Hannan-Quinn criter.	-3.816894
F-statistic	1.883085	Durbin-Watson stat	2.101043
Prob(F-statistic)	0.133267		

**Appendix B: Regression analysis results with dependent variable ROA.
With and without correction to Heteroskedasticity problem.**

Table 1:

Dependent Variable: ROE
Method: Least Squares
Date: 06/17/12 Time: 14:15
Sample: 1 31
Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.131178	1.279751	-0.102503	0.9192
FOREIGN	-0.073578	0.278156	-0.264519	0.7935
LNASSETS	0.074418	0.103577	0.718478	0.4791
LQ	0.044946	0.206667	0.217479	0.8296
R_ISK	-16.74169	3.865794	-4.330726	0.0002
S1	-0.413853	0.484400	-0.854363	0.4010
R-squared	0.440303	Mean dependent var	-0.056538	
Adjusted R-squared	0.328364	S.D. dependent var	0.740419	
S.E. of regression	0.606798	Akaike info criterion	2.010745	
Sum squared resid	9.205104	Schwarz criterion	2.288291	
Log likelihood	-25.16654	Hannan-Quinn criter.	2.101218	
F-statistic	3.933406	Durbin-Watson stat	1.775766	
Prob(F-statistic)	0.009085			

Heteroskedasticity Test: White

F-statistic	83.88014	Prob. F(19,11)	0.0000
Obs*R-squared	30.78750	Prob. Chi-Square(19)	0.0426
Scaled explained SS	88.77215	Prob. Chi-Square(19)	0.0000

Dependent Variable: ROE
Method: Least Squares
Date: 06/17/12 Time: 14:22

Sample: 1 31
 Included observations: 31
 White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.131178	0.873322	-0.150206	0.8818
FOREIGN	-0.073578	0.134646	-0.546454	0.5896
LNASSETS	0.074418	0.068240	1.090533	0.2859
LQ	0.044946	0.144290	0.311496	0.7580
R_ISK	-16.74169	10.86805	-1.540450	0.1360
S1	-0.413853	0.417242	-0.991877	0.3308
R-squared	0.440303	Mean dependent var	-0.056538	
Adjusted R-squared	0.328364	S.D. dependent var	0.740419	
S.E. of regression	0.606798	Akaike info criterion	2.010745	
Sum squared resid	9.205104	Schwarz criterion	2.288291	
Log likelihood	-25.16654	Hannan-Quinn criter.	2.101218	
F-statistic	3.933406	Durbin-Watson stat	1.775766	
Prob(F-statistic)	0.009085			

Table 2:

Dependent Variable: ROE
 Method: Least Squares
 Date: 06/17/12 Time: 14:23
 Sample: 1 31
 Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.653320	0.517016	1.263636	0.2180
FOREIGN	-0.007067	0.273012	-0.025885	0.9796
LV	0.339291	0.733150	0.462785	0.6475
LQ	-0.000563	0.213566	-0.002636	0.9979
R_ISK	-15.99978	3.941920	-4.058879	0.0004
S1	-0.382204	0.484708	-0.788524	0.4378
R-squared	0.433598	Mean dependent var	-0.056538	
Adjusted R-squared	0.320318	S.D. dependent var	0.740419	
S.E. of regression	0.610422	Akaike info criterion	2.022653	
Sum squared resid	9.315372	Schwarz criterion	2.300199	
Log likelihood	-25.35112	Hannan-Quinn criter.	2.113126	
F-statistic	3.827660	Durbin-Watson stat	1.708578	

Prob(F-statistic) 0.010341

Heteroskedasticity Test: White

F-statistic	82.65153	Prob. F(19,11)	0.0000
Obs*R-squared	30.78437	Prob. Chi-Square(19)	0.0426
Scaled explained SS	85.36656	Prob. Chi-Square(19)	0.0000

Dependent Variable: ROE

Method: Least Squares

Date: 06/17/12 Time: 14:23

Sample: 1 31

Included observations: 31

White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.653320	0.459554	1.421639	0.1675
FOREIGN	-0.007067	0.152034	-0.046483	0.9633
LV	0.339291	0.568063	0.597277	0.5557
LQ	-0.000563	0.141562	-0.003977	0.9969
R_ISK	-15.99978	10.33612	-1.547947	0.1342
S1	-0.382204	0.407773	-0.937297	0.3576

R-squared	0.433598	Mean dependent var	-0.056538
Adjusted R-squared	0.320318	S.D. dependent var	0.740419
S.E. of regression	0.610422	Akaike info criterion	2.022653
Sum squared resid	9.315372	Schwarz criterion	2.300199
Log likelihood	-25.35112	Hannan-Quinn criter.	2.113126
F-statistic	3.827660	Durbin-Watson stat	1.708578
Prob(F-statistic)	0.010341		

Table 3:

Dependent Variable: ROE

Method: Least Squares

Date: 06/17/12 Time: 14:24

Sample: 1 31

Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.528754	0.429525	1.231020	0.2298
FOREIGN	-0.003371	0.276446	-0.012195	0.9904
LV	0.332863	0.735188	0.452758	0.6546
LQ	0.006104	0.213661	0.028570	0.9774
R_ISK	-16.04649	3.970006	-4.041930	0.0004
SQS1	-0.266103	0.387534	-0.686659	0.4986
R-squared	0.430257	Mean dependent var	-0.056538	
Adjusted R-squared	0.316308	S.D. dependent var	0.740419	
S.E. of regression	0.612220	Akaike info criterion	2.028535	
Sum squared resid	9.370329	Schwarz criterion	2.306081	
Log likelihood	-25.44229	Hannan-Quinn criter.	2.119008	
F-statistic	3.775886	Durbin-Watson stat	1.710068	
Prob(F-statistic)	0.011022			

Heteroskedasticity Test: White

F-statistic	102.0507	Prob. F(19,11)	0.0000
Obs*R-squared	30.82512	Prob. Chi-Square(19)	0.0422
Scaled explained SS	86.41893	Prob. Chi-Square(19)	0.0000

Dependent Variable: ROE

Method: Least Squares

Date: 06/17/12 Time: 14:25

Sample: 1 31

Included observations: 31

White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.528754	0.360880	1.465180	0.1553
FOREIGN	-0.003371	0.150936	-0.022336	0.9824
LV	0.332863	0.570402	0.583557	0.5647
LQ	0.006104	0.140528	0.043438	0.9657
R_ISK	-16.04649	10.40305	-1.542480	0.1355
SQS1	-0.266103	0.315649	-0.843035	0.4072
R-squared	0.430257	Mean dependent var	-0.056538	
Adjusted R-squared	0.316308	S.D. dependent var	0.740419	
S.E. of regression	0.612220	Akaike info criterion	2.028535	
Sum squared resid	9.370329	Schwarz criterion	2.306081	

Log likelihood	-25.44229	Hannan-Quinn criter.	2.119008
F-statistic	3.775886	Durbin-Watson stat	1.710068
Prob(F-statistic)	0.011022		

Table 4:

Dependent Variable: ROE

Method: Least Squares

Date: 06/17/12 Time: 14:26

Sample: 1 31

Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.265838	1.259675	-0.211037	0.8346
FOREIGN	-0.072038	0.282036	-0.255423	0.8005
LNASSETS	0.074902	0.104067	0.719748	0.4784
LQ	0.050553	0.206744	0.244522	0.8088
R_ISK	-16.80131	3.895563	-4.312934	0.0002
SQS1	-0.298104	0.388040	-0.768231	0.4495
R-squared	0.437246	Mean dependent var	-0.056538	
Adjusted R-squared	0.324696	S.D. dependent var	0.740419	
S.E. of regression	0.608453	Akaike info criterion	2.016191	
Sum squared resid	9.255376	Schwarz criterion	2.293737	
Log likelihood	-25.25096	Hannan-Quinn criter.	2.106664	
F-statistic	3.884883	Durbin-Watson stat	1.778151	
Prob(F-statistic)	0.009640			

Heteroskedasticity Test: White

F-statistic	92.51013	Prob. F(19,11)	0.0000
Obs*R-squared	30.80720	Prob. Chi-Square(19)	0.0424
Scaled explained SS	89.64244	Prob. Chi-Square(19)	0.0000

Dependent Variable: ROE

Method: Least Squares

Date: 06/17/12 Time: 14:27

Sample: 1 31

Included observations: 31

White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.265838	0.821518	-0.323593	0.7489
FOREIGN	-0.072038	0.132002	-0.545736	0.5901
LNASSETS	0.074902	0.068008	1.101365	0.2812
LQ	0.050553	0.144524	0.349792	0.7294
R_ISK	-16.80131	10.93589	-1.536346	0.1370
SQS1	-0.298104	0.314499	-0.947872	0.3523
R-squared	0.437246	Mean dependent var	-0.056538	
Adjusted R-squared	0.324696	S.D. dependent var	0.740419	
S.E. of regression	0.608453	Akaike info criterion	2.016191	
Sum squared resid	9.255376	Schwarz criterion	2.293737	
Log likelihood	-25.25096	Hannan-Quinn criter.	2.106664	
F-statistic	3.884883	Durbin-Watson stat	1.778151	
Prob(F-statistic)	0.009640			

Table 5:

Dependent Variable: ROE
 Method: Least Squares
 Date: 06/17/12 Time: 14:27
 Sample: 1 31
 Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.263520	1.458546	0.180673	0.8581
FOREIGN	0.030948	0.262051	0.118101	0.9069
LNASSETS	0.051808	0.104254	0.496936	0.6236
LQ	0.038037	0.208945	0.182043	0.8570
R_ISK	-16.15335	3.840107	-4.206485	0.0003
S5	-0.510556	0.607007	-0.841105	0.4083
R-squared	0.439814	Mean dependent var	-0.056538	
Adjusted R-squared	0.327776	S.D. dependent var	0.740419	
S.E. of regression	0.607064	Akaike info criterion	2.011619	
Sum squared resid	9.213153	Schwarz criterion	2.289165	
Log likelihood	-25.18009	Hannan-Quinn criter.	2.102092	
F-statistic	3.925602	Durbin-Watson stat	1.743785	
Prob(F-statistic)	0.009172			

Heteroskedasticity Test: White

F-statistic	189.0724	Prob. F(19,11)	0.0000
Obs*R-squared	30.90537	Prob. Chi-Square(19)	0.0413
Scaled explained SS	94.36209	Prob. Chi-Square(19)	0.0000

Dependent Variable: ROE

Method: Least Squares

Date: 06/17/12 Time: 14:28

Sample: 1 31

Included observations: 31

White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.263520	0.856961	0.307506	0.7610
FOREIGN	0.030948	0.093347	0.331542	0.7430
LNASSETS	0.051808	0.065009	0.796930	0.4330
LQ	0.038037	0.131337	0.289613	0.7745
R_ISK	-16.15335	10.83396	-1.490993	0.1485
S5	-0.510556	0.424117	-1.203810	0.2399

R-squared	0.439814	Mean dependent var	-0.056538
Adjusted R-squared	0.327776	S.D. dependent var	0.740419
S.E. of regression	0.607064	Akaike info criterion	2.011619
Sum squared resid	9.213153	Schwarz criterion	2.289165
Log likelihood	-25.18009	Hannan-Quinn criter.	2.102092
F-statistic	3.925602	Durbin-Watson stat	1.743785
Prob(F-statistic)	0.009172		

Table 6:

Dependent Variable: ROE

Method: Least Squares

Date: 06/17/12 Time: 14:29

Sample: 1 31

Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.869735	0.633399	1.373123	0.1819
FOREIGN	0.083512	0.256884	0.325096	0.7478

LV	0.399987	0.732049	0.546394	0.5896
LQ	-0.014790	0.213401	-0.069304	0.9453
R_ISK	-15.45568	3.898169	-3.964855	0.0005
S5	-0.590056	0.602540	-0.979280	0.3368
R-squared	0.440956	Mean dependent var	-0.056538	
Adjusted R-squared	0.329148	S.D. dependent var	0.740419	
S.E. of regression	0.606444	Akaike info criterion	2.009577	
Sum squared resid	9.194361	Schwarz criterion	2.287123	
Log likelihood	-25.14844	Hannan-Quinn criter.	2.100050	
F-statistic	3.943845	Durbin-Watson stat	1.718539	
Prob(F-statistic)	0.008970			

Heteroskedasticity Test: White

F-statistic	108.4405	Prob. F(19,11)	0.0000
Obs*R-squared	30.83537	Prob. Chi-Square(19)	0.0421
Scaled explained SS	88.91412	Prob. Chi-Square(19)	0.0000

Dependent Variable: ROE

Method: Least Squares

Date: 06/17/12 Time: 14:30

Sample: 1 31

Included observations: 31

White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.869735	0.563578	1.543237	0.1353
FOREIGN	0.083512	0.127006	0.657545	0.5168
LV	0.399987	0.537518	0.744137	0.4637
LQ	-0.014790	0.134221	-0.110188	0.9131
R_ISK	-15.45568	10.21920	-1.512415	0.1430
S5	-0.590056	0.457456	-1.289863	0.2089
R-squared	0.440956	Mean dependent var	-0.056538	
Adjusted R-squared	0.329148	S.D. dependent var	0.740419	
S.E. of regression	0.606444	Akaike info criterion	2.009577	
Sum squared resid	9.194361	Schwarz criterion	2.287123	
Log likelihood	-25.14844	Hannan-Quinn criter.	2.100050	
F-statistic	3.943845	Durbin-Watson stat	1.718539	
Prob(F-statistic)	0.008970			

Table 7:

Dependent Variable: ROE
 Method: Least Squares
 Date: 06/17/12 Time: 14:31
 Sample: 1 31
 Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.715273	0.474065	1.508809	0.1439
FOREIGN	0.080407	0.255480	0.314730	0.7556
LV	0.410309	0.729239	0.562653	0.5787
LQ	-0.020855	0.212605	-0.098091	0.9226
R_ISK	-15.44394	3.881379	-3.978984	0.0005
SQS5	-0.451185	0.415702	-1.085358	0.2881
R-squared	0.445633	Mean dependent var	-0.056538	
Adjusted R-squared	0.334760	S.D. dependent var	0.740419	
S.E. of regression	0.603902	Akaike info criterion	2.001176	
Sum squared resid	9.117439	Schwarz criterion	2.278721	
Log likelihood	-25.01822	Hannan-Quinn criter.	2.091649	
F-statistic	4.019303	Durbin-Watson stat	1.726014	
Prob(F-statistic)	0.008184			

Heteroskedasticity Test: White

F-statistic	114.5453	Prob. F(19,11)	0.0000
Obs*R-squared	30.84410	Prob. Chi-Square(19)	0.0420
Scaled explained SS	88.37225	Prob. Chi-Square(19)	0.0000

Dependent Variable: ROE
 Method: Least Squares
 Date: 06/17/12 Time: 14:32
 Sample: 1 31
 Included observations: 31

White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.715273	0.435128	1.643823	0.1127
FOREIGN	0.080407	0.126394	0.636164	0.5305

LV	0.410309	0.526364	0.779516	0.4430
LQ	-0.020855	0.135176	-0.154278	0.8786
R_ISK	-15.44394	10.16282	-1.519651	0.1411
SQS5	-0.451185	0.322230	-1.400194	0.1737
R-squared	0.445633	Mean dependent var	-0.056538	
Adjusted R-squared	0.334760	S.D. dependent var	0.740419	
S.E. of regression	0.603902	Akaike info criterion	2.001176	
Sum squared resid	9.117439	Schwarz criterion	2.278721	
Log likelihood	-25.01822	Hannan-Quinn criter.	2.091649	
F-statistic	4.019303	Durbin-Watson stat	1.726014	
Prob(F-statistic)	0.008184			

Table 8:

Dependent Variable: ROE
Method: Least Squares
Date: 06/17/12 Time: 14:35
Sample: 1 31
Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.151432	1.361128	0.111255	0.9123
FOREIGN	0.028699	0.260641	0.110107	0.9132
LNASSETS	0.050568	0.103815	0.487096	0.6304
LQ	0.032365	0.208189	0.155458	0.8777
R_ISK	-16.14628	3.825455	-4.220748	0.0003
SQS5	-0.396247	0.418625	-0.946545	0.3529
R-squared	0.443891	Mean dependent var	-0.056538	
Adjusted R-squared	0.332669	S.D. dependent var	0.740419	
S.E. of regression	0.604850	Akaike info criterion	2.004313	
Sum squared resid	9.146093	Schwarz criterion	2.281859	
Log likelihood	-25.06686	Hannan-Quinn criter.	2.094786	
F-statistic	3.991045	Durbin-Watson stat	1.751853	
Prob(F-statistic)	0.008469			

Heteroskedasticity Test: White

F-statistic	216.3167	Prob. F(19,11)	0.0000
Obs*R-squared	30.91725	Prob. Chi-Square(19)	0.0412
Scaled explained SS	94.02325	Prob. Chi-Square(19)	0.0000

Dependent Variable: ROE

Method: Least Squares

Date: 06/17/12 Time: 14:36

Sample: 1 31

Included observations: 31

White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.151432	0.791359	0.191356	0.8498
FOREIGN	0.028699	0.093973	0.305392	0.7626
LNASSETS	0.050568	0.064141	0.788392	0.4379
LQ	0.032365	0.130382	0.248230	0.8060
R_ISK	-16.14628	10.78385	-1.497266	0.1468
SQS5	-0.396247	0.296115	-1.338154	0.1929
R-squared	0.443891	Mean dependent var	-0.056538	
Adjusted R-squared	0.332669	S.D. dependent var	0.740419	
S.E. of regression	0.604850	Akaike info criterion	2.004313	
Sum squared resid	9.146093	Schwarz criterion	2.281859	
Log likelihood	-25.06686	Hannan-Quinn criter.	2.094786	
F-statistic	3.991045	Durbin-Watson stat	1.751853	
Prob(F-statistic)	0.008469			
