

The Determinant of Profitability of Commercial Banks in Azerbaijan

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ABSTRACT

In this study, we analyzed the relationship between the profitability of banks and macroeconomic factors in Azerbaijan banking sector considering 24 banks within the period of 4 years from 2008 until 2011. In this case, we used a panel data to investigate that relationship. We found out that bank specific factors have more impact on the profitability of banks in Azerbaijan when compared to the macroeconomic factors. With respect to the results, inflation and GDP growth rate turned out to be insignificant. We concluded by recommending some possible solutions to the problems that we came across in this study.

Keywords: Bank profitability, panel data, Azerbaijan

ÖZ

Bu çalışmanın amacı, 2008-2011 yıllarını içeren dört yıllık süreçte Azerbaycan bankalarının banka kârlılığının gerek banka içsel faktörler gerekse makroekonomik faktörler baz alınarak incelenmesini içermektedir. Bu ilişkileri ampirik olarak test etmek için panel regresyon analizi uygulanmıştır. Analiz sonuçlarına göre banka karlılığına makroekonomik faktörlerin etkisinden çok içsel faktörlerin etki ettiği görülmektedir. Bunun yanında, enflasyon ve GSMH'nin oranının banka karlılığına istatistiksel olarak anlamlı bir etkisi bulunmamaktadır. Çalışmada, analiz sonucuna göre olası uygulanabilir sonuçlara da yer verilmiştir.

Anahtar Kelimeler: Banka karlılığı, panel veri, Azerbaycan.

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LIST OF ABBREVIATIONS

ASQ	Asset Quality Ratio
ATM	Automated Teller Machine
AZN	Azerbaijan New Manat
CAR	Capital Adequacy Ratio
CBA	Central Bank of Azerbaijan
EA	Earning Ability
EFF	Management Efficiency Ratio
E-VIEWS	Econometric Views
GDP	Gross Domestic Product
IBAR	International Bank of Azerbaijan Republic
IMF	International Monetary Fund
INF	Inflation
IPS	Im, Pesaran and Shin method
LLC	Levin, Lin and Chu method
LQR	Liquidity Ratio
LSIZE	Logarithmic Value of the Total Assets
M-W	Maddala and Wu method
NIM	Net Interest Margin
ROA	Return on Asset
ROE	Return on Equity
USSR	Union of Soviet Socialist Republics
POS	Point of Sale

Chapter 1

INTRODUCTION

Banks have a very significant function to play in the economic activity of any country as financial intermediary. Supplying the funds to the economy makes their performance valuable and objective of any country. Therefore, a look into the factors that influence their profitability is crucial and imperative to the power of the economy (Bashir, 2000). The monetary organization is contemplated a source of evolution and growth in all countries. This occurs as a result of their capacity to prescribe the financial system in that economy (Mendes and Abreu, 2002). In Azerbaijan Republic the banking sector has undergone a period of transformation and should be able successful to fulfill the part of a main arbitrator of resources in the economy. The solidity of the banking sector is chartered upon the macro-economic conditions as well as individual bank's management. These components are mutually close to each other. A further detailed feature is that the result of a bank also relies on its capacity to foresee and keep away from risks, perhaps deal with losses brought about by risks surface. In connection with a bank's management, there are again and again applied terms, such as the risk management, profitability management and balance-sheet structure management. These facts together are the causes that lead this article to pay attention to the currently topical issues of bank profitability. The thesis will identify the problem areas that negatively affect banks' effectiveness in controlling their assets and liabilities achieve a profit as an aim and highlight the areas where it might be possible to obtain room for pushing up banks' profitability. In the 21st century,

faced with enlarged challenges of globalization, Azerbaijan has entered a stage of tireless revision in all spheres of social life marked by making strong political stability, ongoing development of the national economy, advances in living standards, and the country's consistent integration into the world economy. An effectual point of view of sustainable economic growth is the survival of a proper, combative, sound and stable banking system in which the genesis is between the strategic duties of the Azerbaijan state. The socioeconomic and legal environment, and the investment and business conditions widespread emerging in Azerbaijan. Good opportunities are provided for ensuring the qualitative increase in size in the banking sector based on the supportive macroeconomic indicators and practical acquired by domestic banks operating in market conditions to speed up its consolidation into the world banking system in according with prevalent globalization necessities. Efficient financial intermediation is vital to sustain Azerbaijan's goal of diversification of the economy towards non-oil, private sector-led growth. By 2005, as oil revenues begun to flow into the country, the banking sector has had a skillful credit boom, because the central bank's arranged exchange-rate policy mirrored in expanding the monetary base and overall ascended in 'animal spirits' on the part of economic agents as it often occurs in oil-exporting countries in the face of enlarge oil prices. In spite of the pre-crisis credit boom of 2005-2008, the banking sector is far from perceiving its financial intermediation potential. The area is set a parted by low deposit and credit in proportion to the size of the economy, lagging behind the comparator countries (IMF 2011). The banking area of Azerbaijan has ride out the global financial disaster relatively well. This was due to very little integration to global financial system, yet part of the credit should go to the Central Bank of Azerbaijan (CBA) both for proactive and reactive policy work out in regard to the banking sector. In rejoinder to the disaster,

CBA strengthened the financial announcing and bank supervision, push up the deposit indemnity coverage as noted lower than in more detail, and declared a three-year tax exemption to shore up the capitalization of banks. Even prior to the disaster, in cooperation with the international financial institutions, CBA has presided over several institutional improvements. The acts and the regulatory structure of the banking sector were brought up to international standards and the corporate governance was stiffened. Azerbaijan's banking sector was also among the first in the region to cuddle the International Financial Reporting Standards. With the impressive increase in size in the economy and regulatory reforms over recent years, Azerbaijan banking sector endured a small in link to the economy. Oil sector is taking part as the main gauge for country's development and government resolved to improve the non-oil sector. To lessen the economy's oil dependency, banking sector should play a paramount position. At the end of attaining the independence, banking sector had look out on plenty of alters. Nowadays, banking sector in Azerbaijan is composed of 44 banks. 43 of them are private banks and 1 of them is the government bank. The largest 10 commercial banks of Azerbaijan embrace 80% of total market share of assets, deposits and credit portfolios. Central Bank of Azerbaijan (CBA) works on subsidizing the half of the banks. Corresponding to the area and expanse of population, 44 banks are too many for Azerbaijan and on 1st of January 2010, as the sequel of changes in law on banks, CBA prerequisite requirements 10 million manat. The banking sector is immobile in operating the beneath monopoly.

1.1 Aim of the Study

The main purpose of this work is to find the determinant of profitability of the commercial banks in Azerbaijan which can be done by an analysis of bank-specific and macroeconomic indicators for the period of 2008-2011. In addition to this, by run-

ning a regression analysis, the researcher will try to calculate the profitability of the banking sector in Azerbaijan. Research used 24 banks for the analysis.

1.2 Research to Find out

The research used 24 banks for the analysis based on the profitability of commercial banks in Azerbaijan. The researcher will try to look into their profitability and see how these internal and external factors have an impact on these banks in the period of 2008-2011 (4 years). The idea is to empirically investigate the factors and study how they affect the profitability of these commercial banks in Azerbaijan within that period.

1.3 Structure of the Thesis

In the first chapter, a brief foreword was given on the banking sector. The second chapter will present a literature review of the material related to the Azerbaijan banking and financial sector. Chapter 3 overviews the historical background of Azerbaijan banking system. Chapter 4 gives an overview of the methodology and the data analysis. Chapter 5 will present the results which are related to data analysis. Chapter 6 gives conclusion and recommendations.

Chapter 2

AN OVERVIEW OF THE AZERBAIJAN BANKING SECTOR

2.1 Literature Review

The effort of Demirgür-Kunt and Huizinga (2000) found that capital ratio, PLL or loan loss provision and managing expenses serve as key notable features in succession bank profitability. Molyneux and Thornton (1992) searched out the determinants of profitability in Europe and used Bourke model (1989). Molyneux and Thornton utilized unvarying accounting truth made and found that there is an affirmative correlation between the efficiency and profitability. Kosmidou, Tanna, and Pasiouras (2005) concentrated on the profitability of domestic U.K. commercial Banks. The result shows a strong positive relationship of all factors. Vong and Chan (2009) analyzed the panel data of five large banks of Macao. Linear model showed the huge effect of the inflation on return on asset (ROA), GDP and interest rate showed no effect. Al-Tamimi (2010) concentrated on the banks of UAE functioning between 1996 and 2008. He found a positive relationship among the GDP and revenue. Saksonova and Solovjova (2011) studied the comparative analysis of five largest Latvian commercial banks during the period of economic and financial crises. GDP growth had positive contribution to profits and inflation negatively affected ROA. Ali, Akhtar, and Ahmed (2011) utilized the data of 22 banks for years 2006 to 2009 and pointed out significant positive relationship of growth rate and CPI with assets and equity return ratios, suggesting that credit risks push up the profits.

Table 1. Literary on bank profitability

Author	Topics	DEPENDENT VARIABLES	INDEPENDENT VARIABLES
Angela Roman and Adina Elena Danuletun (2013)	Determinants of Bank Profitability in ROMANIA	ROA (NI/TA) ROE (NI/TE)	LIQ (LIQUID ASSETS / TOTAL ASSETS) GDP (ANNUAL GROWTH) INF (INFLATION RATE) BANK SIZE(NATUTAL LOG OF ASSETS)
Vincent Okoth Ongore (2011)	Determinants of Financial Performance of Commercial Banks in Kenya	NIM (NET INTEREST INCOME/TOTAL ASSET) ROE(NET INCOME AFTER TAX/TOTAL EQUITY CAPITAL) ROA(TOTAL INCOME/TOTAL ASSET)	CAR (TOTAL CAPITAL / TOTAL ASSETS) ASQ (TOTAL LOANS/TOTAL ASSETS) LIQ(LIQUID ASSETS/ TOTAL ASSETS)
Daiva Jureviciene and Dovile Dofartaite (2013)	Determinants of Financial Performance of Commercial Banks in Lithuania	ROE (NI/TE) ROA (NI/TA) NIM (NET INTEREST INCOME / TOTAL ASSET)	GDP(GROWTH) INF(INFLATION RATE) UNEMPLOYEMENT RATE
Klimentina Poposka (2013)	Determinants of Financial Performance of Commercial Banks in Macedonian Bank	ROA (NI/TA) ROE (NI/TE)	GDP (GROWTH RATE) CAR (TOTAL CAPITAL / RISK WEIGHTED ASSET)
Kundid Ana (2011)	Determinants of Bank Profitability in CROATIA	ROA(NI/TA)	LIQ(LIQUID ASSETS/ AVERAGE ASSETS)
JOAO PEDRO SILVA QUERREIRO (2013)	Determinants of Banks Profitability PORTUGUESE CASE	ROAA(NI/AVERAGE ASSET) ROAE(NI/AVERAGE EQUITY)	GDP(GROWTH RATE)
Sara Kanwal and Muhammad Nadeem (2013)	The profitability of Listed Commercial Banks in PAKISTAN	ROA(NI/TA) ROE(NI/TE)	INF(INFLATION RATE) GDP(GROWTH RATE)

Table 1. Literary on bank profitability (continued)

Author	Topics	DEPENDENT VARIABLES	INDEPENDENT VARIABLES
Tomola Marshal Obamuyi (2013)	Determinants of Banks Profitability in NIGERIA	ROA(NI/TA)	CAR(TOTAL CAPITAL /TOTAL ASSET) BANK SIZE (NATURAL LOG OF ASSETS) GDP(GROWTG RATE)
Antonina Davydenko (2011)	Determinants of Bank Profitability in Ukraine	ROA(NI/TA) ROE(NI/TE)	GDP(GROWTH RATE) INF(INFLATION RATE)
Sufian,G (2009)	Profitability of the Korean banking	ROE(NI/TE) ROA(NI/TA)	INF(INFLATION RATE) LNTA(LOG OF TOTAL ASSETS) LNGDP(THE NATURAL LOG OF GDP)
Paolo Saona Hoffman (2011)	Determinants of the profitability of the US banking Industry		CAP(TOTAL CAPITAL/ ASSET) SIZE(NATUTAL LOG OF ASSET)
Sami Ben Naceur (2003)	The determinant of the Tunisian banking industry profitability	NIM(NET INTEREST INCOME/TOTAL ASSET) ROA (NI/TA)	CAP(TOTAL CAPITAL/TOTAL ASSET) GROWTH (ANNUAL GROWTH) INF (INFLATION RATE)
Sailesh Tanna, Fotios Pasiouras (2005)	Determinants of profitability of domestic UK commercial banks: panel evidence from the period 1995-2002	ROAA(NI/AVERAGE ASSETS) NIM(NET INTEREST INCOME/TOTAL ASSETS)	LIQ (LIQUID ASSETS/ TOTAL ASSETS)

Roman and Danuleton (2013) found that dependent variables are positive. EA as an independent variable is positively showing a straight relationship with bank profitability. Liquidity is an independent variable and a coefficient of liquidity, which is negative and displays that increasing the bank's liquidity lessens the profitability. The coefficient of bank size shows a positive effect upon the profitability. Ongore (2011) found that bank specific factors are positive and notably affect the financial performance of the commercial banks in Kenya. He found that capital ratio is positively linked with ROA and NIM, but negatively with ROE. Asset Quality is negatively linked with all the three bank performance measures. Liquidity management is also positively linked with ROA, ROE and NIM. Jureviciene and Dofartaite (2013) noticed that the decline in Lithuania foreign trade balance and government debt pushes up the NIM of Lithuania banks. Poposka (2013) found that the key measures ROA and ROE are resolved by the same independent variables. Capital Adequacy Ratio has a negative effect while the capital and reserves share in total assets have positive effect on ROA and ROE. She found that also a quick ratio has a positive effect with ROA and ROE. Ana (2011) found that enlarged liquidity theoretically lessens the opportunity income and suggests its positive effects on bank ROA. Querreiro (2013) found that between 2002-2011 equity over total assets had a negative and statistically notable effect at 5 percent level on ROAA and positive effect at 10 percent level on NIM. During 2008-2011 periods, this ratio had a positive effect at 10 percent level for both NIM and ROAE. Cost-Income ratio has only a notable negative effect on ROAA. Kanwal and Nadeem (2013) found that the push up in inflation rate and GDP growth of Pakistan has verified the decline in EM of the banks. They found that there is notably a positive relationship of interest rate with ROA and

ROE. Obamuyi (2013) found that there is a positive correlation that occurs between the profitability and each of the independent variables. Bank size has a negative impact but a notable effect on banks profitability. Expenses management has a negative but a notable impact on bank's profitability. GDP has a positive effect on banks profitability. Davydenko (2011) utilized the fixed effects estimation technique and proved that both GDP and Inflation have a positive relationship with the ROA of the Ukrainian banks. Sufian (2011) found that Korean bank's credit risk has been lowered during the pre-crisis time and better capitalized during the pre-crisis interval. He found that the relationship among LNTA and bank's profitability is positive. Bank liquidity has a negative relationship with bank profitability. EQASS is positively related to the bank's profitability. Hoffman (2011) found that profitability displays virtually persistent growth rate from 1995 to 2006 and 2007, there is a decline of two percentage points. Naceur (2003) obtained that there is a positive and notable coefficient on the overhead to assets ratio variable in the interest margin and ROA equations. Also, the coefficient on bank loans is positive and notable. This significance indicates that bank loans are interest-paying and opposite to the cash that is why pushing up the NIM. Tanna and Pasiouras (2005) obtained that LIQ has a positive influence on ROAA and negative influence on NIM. Loans Loss reserves had a positive influence on NIM. EQASS had positive ROAA and NIM and negative relationship among the Bank Size and profitability.

2.2 The Economic Indicators in Azerbaijan Economy

The Development of banking systems and markets has also push up the crucial macro prudential concerns and monetary policy issues. As a part of global community, these changes inevitably affect the financial system of Azerbaijan (Greuning and Bratanovic, 2003). Kosak and Cok (2008) focused on stupendous changes in banking

sector of changeover economies since the beginning of transition, starting from 1990s. In 1991 Azerbaijan attained its independence and at the end of obtaining its autonomy, the country had looked out on extreme difficulties in political, fiscal and communal spheres. From 199 to 1995, governmental instability gave with slump high price index, redundant increasing and huge budget debt. At the end of 1996 the country reached an improvement in economy spheres. Large oil and gas stocks portrayed crucial part in economy. In 1994 the agreement of century played a crucial role to increase oil and gas division in Azerbaijan economy. Overseas investment played a crucial role for investing and improving the wealth and petrol and gas division. In Azerbaijan, economic growth and increasing household income affected the positive drifts in the banking sector. Statistical results showed that banking sector has made sustain progress in the basic statistic parameters. The credit institutions were made strong and the supply of new banking operations has risen. So, in 2008 bank equity capital was \$1.297.6 million manta, which rose to 87.4 percent balanced with the same interval of the last year. Capitalization and liabilities increased, which reflected total bank assets rise in that interval by 83.3 percent \$7.949 mln AZN. These factors caused a rise of 26.3 percent of GDP contrasted to 14.6 percent in 2003, and special results for loans were 18 percent and 8.1 percent and for enticed moneys were 22.1percent and 8.4 percent. The total deposits amounts have risen automatically with a shift in longer-term deposits. Loan volumes have risen notably, lending rates have decreased and loans have been more effective. At the same period, banks' branches have extended from 305 branches in 2003 to 485 in 2007, and branches decided to support credit for the improvement of the local areas and small and medium size markets. Commercial banks loans to the real sector was \$5,381 million AZN, which is 8.7 point times bigger than in 2003, and the total banking sector as-

sets extended to 67.5 percent (contrasted to 55 percent at the starting of 2004). New laws that have been assumed in the last 4 years are related with banks, the National Bank of Azerbaijan, and bank deposit insurance mortgage. The Currency Regulation order liberalized the foreign currency and controls the currency export. More domestic banks accessed to the worldwide standards of corporate governance and accounting format. The banking system structure has gained rapidly and some new services opened in Azerbaijan banking sector, for example, a public Card Processing Center, Central Credit Register National Payment System, a National Depository Center, Mortgage Fund, Deposit Insurance Fund, and also stock and currency exchanges. Banking system firstly attempted to use the improvement technologies and created the latest management information systems.

Table 2. Economic indicators (2008-2011)

Year	2008	2009	2010	2011
GDP (US \$ billions)	77.649	85.648	89.292	94.318
Growth of GDP (%)	10.8	9.3	5.0	2.8
Inflation(CPI)	20.8	1.4	5.7	8.1
Unemployment rate (%)	6.0	6.0	6.0	6.0

Source: Central Bank of Azerbaijan, Annual Reports (2008-2011)

Until the strike crisis, deposits that offer rates beneath 1.8 times of refinancing rate were insured; forcing banks to reconsider their deposit rates when the central bank alters the interest rates. As part of the anti-crisis policy package, the CBA pushed up the maximum amount of insured deposits from 6000 manat to 30000 manat in June 2009.

2.3 Current Condition of the Azerbaijan Banking System

The national banking system is playing more crucial role in Azerbaijan's market economy. At present, the republic has a two-tier market-based banking system, which is portrayed in the first place, by the National Bank of Azerbaijan and a set of credit institutions. Nowadays, banking sector in Azerbaijan consist, of 44 banks; 43 private banks and 1 government bank. Sabi (1997) finalized the consultations of the NBA with international financial institutions starting from that period, which would lead to set up a supportive banking system in Azerbaijan. The National Bank of Azerbaijan (NBA) has the obligatory independence for discharging the functions of a central bank. Its chief task is to achieve the price stability within the range of its authority. The National Bank of Azerbaijan (NBA) has the obligatory independence for discharging the functions of a central bank. Its main task is to achieve the price stability within the range of its authority. Another prime charge is to achieve the solidity and evolution of the banking and payment systems. The NBA licenses, regulates and controls the movements of commercial banks. Central bank of Azerbaijan, which is on the top, is the central bank of the state and its activities are regulated by the Constitution of the Azerbaijan republic, Law on Azerbaijan Republic Central bank and other legal acts. According to the analysis 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 4 were the joint-venture banks, 156 were private domestic banks and only one was foreign owned bank. In 2001, there were 59 operating banks in the sector and three banks were state-owned. The data of Central bank shows that the number of operating banks plummeted to 46 in 2009 with only one state controlled bank and also the International Bank of Azerbaijan. In addition, the number of banks decreased to 45 and 44 in 2010 and 2011.

Table 3. Total Assets by Azerbaijan Banks-Ranking (as 31 December of, 2011)

N	Banks	Assets	Credit Portfolio	Aggregate Capital
1	Azerbaycan Beynəlxalq Banki ASC	5,013,835.98	3,308,454.98	512,737.79
2	Kapital Bank ASC	1,320,904.80	963,551.40	85,085.02
3	Xalq Bank	715,214.28	452,343.39	173,253.97
4	Bank Standard QSC	689,379.11	461,828.77	47,686.91
5	Texnika Bank ASC	629,333.18	440,141.94	99,113.61
6	Pasha Bank ASC	573,386.23	252,682.01	145,403.75
7	Unibank ASC	441,356.09	329,680.71	60,600.80
8	Access Bank ASC	390,378.68	297,355.00	90,294.88
9	Demir Bank	357,592.04	265,503.02	49,974.68
10	Bank of Baku	315,226.80	262,122.47	53,301.59
11	AGBank	314,510.50	213,012.38	35,561.79
12	Bank Respublika	312,992.50	173,828.85	57,493.30
13	Zamin Bank	270,059.14	173,884.29	27,261.21
14	Mugan Bank	243,381.24	175,358.29	31,648.33
15	Yapi kredi Bank Azerbaijan	238,920.57	125,299.96	57,259.13
16	Atabank	234,047.31	141,530.91	29,057.20
17	Bank of Azerbaijan	186,156.14	152,221.34	24,292.15
18	Bank Nikoil	179,697.49	160,581.05	31,597.78
19	Express Bank	172,309.82	81,440.54	79,513.77
20	Turan Bank	171,263.52	122,569.94	25,963.98
21	Azerbaycan Senaye Bank	155,009.93	133,375.21	28,553.92
22	AFB Bank	149,251.81	95,620.37	43,582.35
23	Rabite Bank	131,229.91	95,285.74	16,680.81
24	Parabank	104,781.84	76,662.85	12,639.85
25	Amrahbank	85,058.89	54,331.80	21,080.45
26	Kredo Bank	85,504.18	78,804.12	22,549.93
27	Silkway Bank	79,306.97	26,929.29	40,853.32
28	Bank Avrasiya	70,091.84	36,216.30	19,926.94
29	Azer-Turk Bank	64,929.71	41,715.85	12,633.12
30	NBS Bank	63,404.19	52,519.66	17,915.69
31	Atra Bank	62,509.12	45,84.10	11,255.03
32	TDB Bank	60,738.37	53,159.59	12,089.29
33	United Credit Bank	56,523.88	49,130.87	13,289.43
34	VTB Azerbaijan	50,485.50	46,024.54	15,607.34
35	Gence Bank	48,184.05	39,351.80	15,594.69
36	BTB Bank	44,085.51	35,829.95	14,103.41
37	Gunay Bank	37,545.10	41,920.88	12,063.73
38	GafkazInkisaf Bank	33,514	28,780.00	10,047.00
39	Royal Bank	33,028	27,099.00	13,024.00
40	Deka Bank	26,79	15,271.00	23,815.00
41	Melli Iran Bank Baki	24,885	NA	12,239.03
42	Pakistan Milli Bank Baki	11,131	NA	9,042.090
43	Azerbaijan Kredir Bank	NA	NA	NA
44	Evro Bank	NA	NA	NA

Source: FINEKO Analytical and Information agency

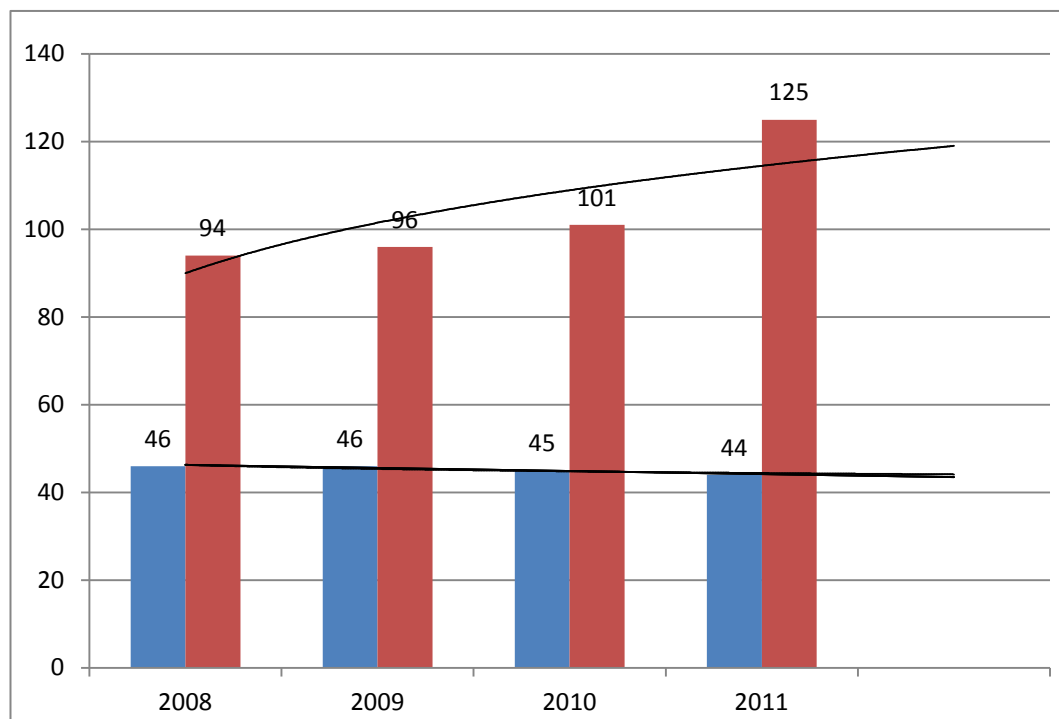


Figure 1. Banks and Non-banks credit organizations

2.4 Banking System Assets

The banking system's assets portrayed only 21% of GDP in 2006; consequently it was beneath the ratios for the Russian Federation (53%) and Kazakhstan (91%). The capacity of system pushed up by almost 60% and totaled 4.344 million \$ at the beginning of 2007. The main crucial components in framework of the bank assets are loans related to customers, which totaled 2.537\$ million. It is equal to 52% of total assets. State-owned International Bank of Azerbaijan (IBA) claps half of the assets of the banking system. Bank Standard 2% and Capital Bank 2%, Unibank 2%, Texnika bank 3%, Azerigazbank 3%, Bank Respublika 3%, Bank of Baku 3%, Kochbank 4%, Azerdemiryolbank 4%, other banks 22%. Sabi (1997) stated that at the beginning of the transition period, four state-owned banks had controlled purchasing a percentage of total banking assets in Azerbaijan. In 1993, 72% of total banking assets were held by state banks. Bayulgen (1999) referred to that and emphasized that, in 1996, state-

owned banks owned 83% of total banking assets, 82% of total deposits and 83% of total outstanding loans.

Table 4. Indicators of Assets

	01.01.2008		01.01.2009		01.01.2010		01.01.2011	
	Million manats	Share in total, %	Million manats	Share in total, %	Million manats	Share in total, %	Million manats	Share in total, %
Cash	285.90	4.25	460.58	4.48	466.2	4	488	3.7
Correspondent accounts	693.12	10.31	959.52	9.34	844.6	7.2	1508	11.3
Credits to and deposits from financial sector	287.26	4.27	414.82	4.04	599.5	5.1	524.7	3.9
Credits to customer	4393.94	65.33	6816.85	66.35	7963.6	68.3	8574.3	64.5
Investments	472.30	7.02	795.77	7.75	836.1	7.2	1070	8.1
Other assets	593.19	8.82	825.92	8.04	955.2	8.2	1125.9	8.5
Total assets	6725.72	100	10273.46	100	11665.2	100	13290.8	100

Source: CBA, Annual report (2008-2011)

The table above shows that total banks assets pushed up by 3547.9 million AZN or 52.7% in 2008 and reached to 10273.5 million AZN as of January 1, 2009, and in 2011 reached to 13290.8 million AZN.

2.4.1 Asset, Liability and Capital Structures of the Banking Sector

Table 5. Structure of bank 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: CBA, Annual report (2008-2011)

Loans to clients clapped the ruling situation for all of the following years. It expanded from 66% to 69% between 2008 and 2009. In 2010, loans to clients decreased to 65%, and in 2011 it was 63.2%. During 2008-2011 loans, cash and deposits percentage level were not massed in banks' asset framework. Share of investments was expanded to 10.1 percent in 2011 and other assets were 8.4 percent. Other result was that 50% of total loans were state-owned by International Bank of Azerbaijan (IBA) claps of banking system; Bank standard 2%, Capital bank 2%, Unibank 2%, Texnika bank 3%, Azerigazbank 3%, Bank Respublika 3%, Bank of Baku 3%, Kochbank 3%, Azeridemiryolbank 4%, others banks 25 %.

Table 6. Sectoral structure and dynamics of the loan portfolio of banks

	01.01.2008		01.01.2009		01.01.2010		01.01.2011	
	AZN mln	% share, in	AZN mln	share, in %	AZN mln	share, in %	AZN mln	% share, in
Trade and services	1193.6	26.2	1910.3	27.3	1833.5	22.3	2201	24.5
Households	1545.7	33.9	2175.8	31.1	2171.6	26.4	2531.3	28.2
Energy, chemistry and natural resources	302.0	6.6	855.7	12.2	1522	18.5	984	11
Agriculture and processing	191.1	4.2	255.4	3.7	389.3	4.7	435.4	4.9
Construction and property	312.2	6.9	461.3	6.6	576.4	7	660.6	7.4
Industry and production	307.9	6.8	427.3	6.1	536.7	6.5	682.3	7.6
Transport and communication	469.6	10.3	669.1	9.6	520.4	6.3	454.4	5.1

Source: NBA. (2008-2011). Annual Report

Table 7. Annual growth rate of key indicators of banking system (%)

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

Source: CBA, Annual report (2010)

Between 2008 and 2011, the focal key indicators of banking system continued affirmatively excluding the deposits of legal entities which were lessened by 19% in 2009. Savings of households had solid growth rate in the last four years. In 2011, it extended its highest level to 36%.

Table 8. Macro indicators of banking system (%)

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

Source: CBA, Annual report (2008-2011)

Credit to GDP ratio had affirmative enlarging trend and was higher than Deposit to GDP ratio for previous years, it lessened slightly to 19% in 2011.

Table 9. Banking Sector Financial Soundness Indicators (2008–2011)

	2008	2009	2010	2011
Regulatory Capital to Risk-Weighted Assets	19.6	17.7	16.9	16.1
Liquidity Assets to Total Assets	13.8	11.2	15	12.6
Nonperforming Loans to Total Loans	3.3	3.5	4.7	5.1
Nonperforming Loans Net of Provisions to Total Loans	1.1	0.8	1	1.1
Bank Return on Assets	1.8	2.2	0.9	1.1
Bank Return on Equity	14.2	16	7	7.9

Source: CBA, Annual report (2008-2011)

Table 10. Banking sector profitability (%)

	2008	2009	2010	2011
Return on Assets (ROA)	1.8	2.2	0.9	1.1
Return on Equity (ROE)	14.2	16	7	7.9

Source : IMF Country Report 2011

There is a sharp decrease in ROA to 0.9 point in 2010. In 2011, it enlarged to 1.1 point. ROE reached its maximum point in 2009, where it is 16. It refused to 7 in 2010 and enlarged again slightly to 7.9 in 2011. CBAR stated that the growth of ROE in 2011 was mainly because of the stabilization of assets quality and decrease in the scale of deductions to loan loss provisioning.

2.4.2 The Capital of the Banking Sector

State-owned International Bank of Azerbaijan (IBA) holds the capital of the banking system with 23% of the total capital; Bank standard 5%, Kapital 3%, Unibank 3%, Texnika bank 3%, Azerigazbank 3%, Bank Respublika 3%, Bank of Baku 3%, Kochbank 2%, Azeridemiryolbank 2%, others 50%.

Chapter 3

THE HISTORICAL BACKGROUND OF AZERBAIJAN BANKING SYSTEM

3.1 Azerbaijan Modern Banking System

The Republic of Azerbaijan is the largest country in the Caucasus area situated at the crossroads of Western Asia and Eastern Europe. It is delimited by the Caspian Sea to the east, Russia to the north, Georgia to the northwest, Armenia to the west, Iran to the south and Turkey to the northwest. The Republic of Azerbaijan announced its autonomy in 1991. Before the autonomy, Azerbaijan was one of the fifteen Soviet Socialist Republics of the USSR. By early January 1990, nationalist manifestation and boycotts menaced to overthrow the Soviet control in Azerbaijan. On 19 January 1990, in response to the displays, Soviet armies came into Baku, the capital of Azerbaijan, and at least 120 protesters were killed by the Soviet armies. The collapse of the coup d'état in Moscow, in August 1991, resulted in restarted the calls for autonomy. In December 1991, the Parliament of Azerbaijan declared its autonomy and the country came to be a Member of the United Nations in March 1992.

3.2 The Banking System at the End of the Disintegration of the Soviet Union

Azerbaijan was a piece of the Soviet Union (SU) until October 1991. At the end of the collapse of Soviet Union banking structure in each SU, member countries were dissimilar in the Soviet period, as well as in Azerbaijan. Azerbaijan Banks were the

local sections of Soviet banks and there were five banks in the financial organization during the Soviet time. These banks were; Central Bank (Gosbank), Industrial Construction Bank (Promstroybank), Agriculture Bank (Agroprombank), Saving Bank (Sberbank, which locally named Emanate Bank) and Foreign Trade Bank (Vneshtorgbank), (Sabi, 1997). Saving Bank's (Emanate Bank) purpose was to gather funds, encompass the household deposits, and to dispatch to Russia. All fund allotment rules were made centrally from Soviet Union in line with the evolution plans of the Soviet Union economy and industry. It was clearly dissimilar among centrally organized economy and present-day market economy. As Sabi (1997) and Bayulgen (1999) displayed, the purpose of the banks in Azerbaijan during the SU era was only to accumulate, circulate and manage the funds and retain the public savings. They operated as a manager of accounts and credits to attain the central plan. Thus, the sections of those banks did not have any charge to do supplying or purchasing conclusions, appraising the creditworthiness of purchases or making any examination corresponding to the liquidity.

3.3 Modern Banking Systems and the History of Azerbaijan Banks

Just in 2007, 2 new banks were opened in Azerbaijan. Representatives of powerful financial organizations of Commerzbank and City Bank opened in the banking system which will convey to request the latest banking technologies in Azerbaijan. Finally 45 banks and 530 bank sections started functioning in Azerbaijan. Banks were established with contribution of state capital and 23 of foreign capital. There were 96 non-bank credit arrangements taking activity in the republic along with the banks; 77 were credit allies on January 1, 2008. The Azerbaijani banking sector consists of 43 banks with 22.5 billion USD in total assets, 13.6 billion USD in total loans, and 9.8 billion USD in total deposits. Total assets pushed up by 26.5% in 2012, while total

loans and deposits rose by 20.7 percent and 15.5 percent. Total banking assets increased to 33 percent of GDP in 2012 (28% in 2011), the total loan portfolio of Azerbaijan banks extended 20% of GDP (18% in 2011), and deposits pushed up to the level of 14% of GDP (13% in 2011). The expanse of banking system assets of Azerbaijan pushed up from 865 million manat in 2000 to 13.3 billion manat in 2010-15.4 times. At this time, the nominal GDP raised 8.8 times. The ratio of the bank sector assets to GDP in 2000 was 18.3 percent and it extended 32 percent in 2010. During 2000-2010 periods, the growth rate of the banking system assets surpassed that of GDP. The total bank credits was 486.2 million manat in 2001 and in 2005 it reached to 1441 million manat, and then 9163.4 million manat in 2010. Bank deposits of public were 1468 million manat. Thirty three percent (33%) of them were long-term deposits for January 1, 2008. Along with public, bank deposits of corporate clients pushed up vigorously. Bank deposits of corporate customers were 2 billion AZN for January 1, 2008. The growth of credence of public and economic concerns in bank system enabled the refinement of cashless money gross revenue. The number of payments comprehended by dint of banks is 1473 thousand AZN, and amount of payments is 41 billion AZN. Forceful evolution of book of unusual and required funds of the banks has generated effectual orders for expanding of energetic operations. Book of bank assets is 6727 million AZN for first of January, 2008. Crediting takes part in unusual role in the system of bank assets. Banks credits to the customers are 4664 million AZN which makes 69% of bank assets for January 1, 2008. Unusual mass of independent area in the system of credit investments is higher than 86%. The Central Bank of Azerbaijan resolved to raise the minimum capital requirement for banks operating in Azerbaijan from AZN; 10 million AZN to 50

million AZN. This gauge was required to start a merge process in the banking sector in 2012.

The Unibank was started with the National Bank of Azerbaijan license on 27 July 1992. The regard financial journal 'The Banker' made public 'Unibank' The Bank of the Year 2008 in Azerbaijan. Unibank came to be the first bank in Azerbaijan to pick up the e-Commerce License from Visa Worldwide. Unibank came to be a MasterCard purchaser and started to publish the Visa Worldwide perceptible cards. Unibank was prized its first worldwide rating and Moody's Investor Service donated the Bank the B2 rating with the 'supportive' outlook. The Euro money Journal announced Unibank as 'the Best Bank in Azerbaijan-2007.' Unibank came to be the first purchaser of a subordinated loan in the golden days of the Azerbaijan banking industry.

The Micro Finance Bank of Azerbaijan started its operations in Baku on October 29, 2002, and was re-trading name in September 2008 as Access Bank. The Banker announced Access Bank as 'The Bank of the Year in Azerbaijan (2012). Fitch Ratings pronounced Access Bank's BB+ rating.

AGB Open Joint-Stock Company (OJSC) was started in 1992 and has come to be one of Azerbaijan's chief banks over that time. The Bank's shareholders encompass 2 largest firms: US Investment Fund "Kazimir Investment LTD" and International Finance Corporation (IFC).

Kapital Bank, former name was the United Universal Joint-Stock Bank, was started as a result of the merging of three major state banks in Azerbaijan (Agro-Investment

Bank, Industrial-Investment Bank and Savings Bank in 2000). The bank was re-called to Kapital Bank in January, 2005.

Pasha Holding with 99.84% is the shareholder of the Capital Bank, and it is displayed as hugely trustworthy in worldwide arena. The Bank combines with such huge worldwide financial organizations as Citibank N.A, BCP Bank, Commerzbank AG, KBC Bank and others. Bank gets the prime association and the filled package from International and VISA International. In 2012, Fitch ratings were as follows: Long-term Issuer default and Support Rating Floor B+. The International Bank of Azerbaijan (IBAR) is the state-controlled bank operating in the Republic of Azerbaijan by 1992, January 10.

The Texnikabank is one of Azerbaijan's non-state commercial banks which started in 1992. Texnikabank is the first bank in Azerbaijan to obtain a purchasing right from Visa International in 2007. The bank is improving its relationship with large firms such as Citigroup and Morgan Stanley.

PASHA Bank Open Joint-Stock Company (OJSC), which is component of PASHA group of companies, was arranged in June 2007 and started functioning by 28 November 2007. In February 2013, Fitch Ratings worldwide Ratings Agency has declared PASHA Bank's long-term foreign currency Issuer Default Ratings at 'B+' with a Stable Outlook.

Xalq Bank is entered at National Bank of Azerbaijan on Dec 27, 2004. In 2011, the bank endorsed an agreement with Lithuanian firm Forbis for instruments of the new banking system of Forpost. Xalq Bank has come first in worldwide prizes of the

“Bank of the year 2010: CIS, Baltic, Georgia” and “Best banks of GUAM-2010 in 2011. The bank started to publish the Internet cards in 2011.

Muganbank OJSC was started in 1992 and the most important overseas communications of the bank are: Commerzbank (Germany), Raiffeisen Zentralbank Ag (Vienna, Austria), Citadelebanka (Latvia), and Alfa Bank (Russia) Bank Turanalem (Kazakhstan) and Credit Dnepr Bank (Ukraine)

Bank of Baku Open Joint Stock Company (OJSC) started in 1994 and retained to a few basic ideas of its activities. Triumph of Bank of Baku is known as by the position of worldwide rating agency Moody's, which the bank attained the high ranking in a few years with new prizes. In 2012, Moody's pushed up the rating of 'Bank of Baku' B2 from stable to positive. In 2013, Moody's pushed up the predict on long-term ratings of Bank of Baku from B2 to B1 with stable long-term predict.

Bank of Azerbaijan was started on first of December, 1993 on the basis of the license of the Central Bank of Azerbaijan. The Bank became different in its legal status to Open Joint Stock Company in 2004. One of the clue articles of "Bank of Azerbaijan" is the enhancement of sector network. The Bank decided to maximize the branch network in terms of pushing up the quality of public operations. 'Bank of Azerbaijan' has 16 branches, 3 operation points, 29 ATMs and 500 POS-terminals.

In Azerbaijan, NIKOIL has started since 1994 when NIKOIL CJSC Azerbaijan Investment Company (NIKOIL AIC) was established. Since 1998, NIKOIL AIC has been a shareholder of Ulpar CB. NIKOIL Investment Commercial Bank was estab-

lished and the Article was registered in the Ministry of Justice of the Azerbaijan Republic on April 25, 2002, State Registration.

Kocbank Azerbaijan LTD CJSC Bank was launched in partnership of Kocbank Inc. (80%), managed by Koch Holding-one of the dependable trade groups of Turkey, and International Finance Corporation of the World Bank (20%). On October 21, 1998, the bank requested to the National Bank for getting the working license for its bustle.

Zaminbank Open Joint Stock Company (OJSC) was started on November 16, 1992 based on the license N15, broadcasted by Central Bank of Azerbaijan Republic and the bank was allowed to conduct all types of banking affair, and 38 branches and 17 bank branches sheltered almost the whole region.

Parabank Open Joint Stock Company (OJSC) is one of the oldest banks in Azerbaijan which was established in 1991. Parabank is the general bank servicing spread range of operations and services to public. The bank is mostly the centre of attention on Micro, Small and Medium Enterprises financing, and for extra hold up of its functioning it has pushed up the number of its branches, and currently has 18 branches. In 2008, Parabank was attested with an International ISO 9001-2008 certificate, which verifies its high-quality public offers. In 2011, it affluently audited works which was supplied by Moody's International.

Table 11. General information on financial corporation's (end of period)

	2008	2009	2010	2011
Number of banks	46	46	45	44
State banks	1	1	1	1
<i>Private banks</i>	45	45	44	43
Number of banks with foreign capital	23	23	22	23
Banks with foreign capital from 50% to 100%	7	7	7	7
Share of foreign capital less than 50%	14	14	13	14
Number of banks having obtained a license from the beginning of the year	2	0	1	0
Number of banks having a license canceled from the beginning of the year	2	0	1	0
Number of banks branches	567	626	644	666
State banks	37	38	38	37
Private banks	530	588	606	629
Number of banks with local branches	38	40	40	40
Number of bank divisions	99	109	120	161

Source: CBA (2008-2011) Annual reports.

Table 12. General information on about ATMs and POS-terminals

Years	The number of ATMs, pieces			The number of POS- terminals pieces		
	Total	Including		Total	Including	
		in Baku	in regions		in Ba- ku	in regions
2008	1515	867	648	8124	7397	727
2009	1694	959	735	8657	7871	786
2010	1892	1053	839	7872	7069	803
2011	1888	1047	841	7830	7021	809

Source: CBA (2008-2011) Annual reports.

Chapter 4

METHODOLOGY

4.1 The Data

In this study, the panel data is used to build an empirical analysis on resolving the commercial bank's profitability in the Azerbaijan Republic. There are 24 commercial banks chosen by basing on bank obtainable of statistics which are listed below, and the analysis concentrated on commercial bank's annual data announces for 4 years during the period of 2008-2011. All the statistics were determined from individual website of banks.

Table 13. List of selected commercial banks

№	Commercial banks' names
11	<i>AGBank</i> Open Joint-Stock Company (OJSC)
18	<i>Amrah Bank</i> Open Joint-Stock Company (OJSC)
17	<i>AVRASIYA Bank</i> Open Joint-Stock Company (OJSC)
8	<i>Azer-Kredit Bank</i> Open Joint-Stock Company (OJSC)
3	<i>Azer-Turk Bank</i> Open Joint-Stock Company (OJSC)
20	<i>Bank Nikoil</i> Open Joint-Stock Company (OJSC)
13	<i>Bank of Azerbaijan</i> Open Joint-Stock Company (OJSC)
10	<i>Bank of Baku</i> Open Joint-Stock Company (OJSC)
12	<i>Bank Respublika</i> Open Joint-Stock Company (OJSC)
4	<i>Bank Standard</i> Close Joint-Stock Company (CJSC)
2	<i>Capital Bank</i> Open Joint-Stock Company (OJSC)
21	<i>Deka Bank</i> Open Joint-Stock Company (OJSC)
1	<i>Demirbank</i> Open Joint-Stock Company (OJSC)
9	<i>Express Bank</i> Open Joint-Stock Company (OJSC)
22	<i>Gence Bank</i> Open Joint-Stock Company (OJSC)
19	<i>Mugan Bank</i> Open Joint-Stock Company (OJSC)
16	<i>NBS Bank</i> Open Joint-Stock Company (OJSC)
6	<i>Pasha Bank</i> Open Joint-Stock Company (OJSC)
24	<i>Qafqaz Bank</i> Open Joint-Stock Company (OJSC)
23	<i>Rabite Bank</i> Open Joint-Stock Company (OJSC)
7	<i>Unibank</i> Open Joint-Stock Company (OJSC)
14	<i>VTB Azerbaijan</i> Open Joint-Stock Company (OJSC)
15	<i>Yapi kredi Bank Azerbaijan</i> Open Joint-Stock Company (OJSC)
5	<i>Zamin Bank</i> Open Joint-Stock Company (OJSC)

The ratios comprised in the empirical analysis were evaluated by the Microsoft Excel and E-view software. The E-views software is accustomed to construct resolution for econometric analysis and it enables the researcher easily comprehend and forecast by

using all the ratios in a panel data. The panel data is composed of time series and cross-sectional information that can be used for the instrumentation of empirical analysis and partially it can play a role to find out Azerbaijan banks' profitability.

4.2 The Variables

The researcher will investigate the profitability of above listed commercial banks in Azerbaijan Republic by utilizing 3 dependent variables and also 8 independent variables.

Table 14. The Variables Notation and their Assess:

	Variables	Measures	Notation
Dependent Variables	Profitability	Return on Assets (ROA) = Net Income / Total Assets	ROA
		Return on Equity (ROE) = Net Income / Total Equity	ROE
		NIM=Net interest income/Total Assets	NIM
Bank-Specific Independent Variables	Capital Adequacy	Equity / Total Assets	CAR
	Asset Quality	Total Loan / Total Assets	ASQ
	Efficiency	Operating Expense / Operating Income	EFF
	Earnings	Operating Expenses + Interest Expenses/Net non-interest income +Interest income	ER
	Liquidity	Liquid Assets / Total Assets	LQR
	SIZE	Total Assets	Size of bank
Macroeconomic determinants	Inflation		INF
	Growth Rate		GR

4.2.1 The Dependent Variables

The most notable evaluations of bank profitability are Return on Assets (ROA) and Return on Equity (ROE) and Net Interest Margin (NIM), which it is inclined above as depended variables and they are evaluated in percentage. Here, each variable is explained below:

ROA

Return on Assets is computed as cutting up the net income of the bank by the total asset. This ratio is the most notable gauge of profitability for contrasting the efficiency and operating bank's performance. It shows how a bank builds earnings from its assets and also it can display its profitability. Many researchers used this ratio that is connected with the evaluation of the bank performance. ROA shows the profit earned per dollar of assets and most significantly it indicates the management's capacity to deploy the bank's financial and real investment enterprises to provoke profits related to the tuition of Hassan and Basher (2003).

ROE

Return on Equity (ROE) is also one of the most valuable ratios of profitability which is evaluated by cutting up total amount of income by total equity of shareholders. It assesses profitability of companies or banks by testifying how much earnings a company or a bank builds with the capital that shareholders have put in. As Sufian (2009) clarified, ROE indicates how effectively a bank management is exploiting the shareholder's funds. Moreover, the higher ROE can display the valuables of the bank that it can obtain more capital.

NIM

The NIM variable is evaluated by the net interest income cut up by total assets and pinpoint the profit earned on interest activities. An obvious metric inspects how successful a firm's investment conclusions are compared to its debt positions. A negative value displays that the firm did not make an optimal conclusion, because interest expenses were greater than the amount of returns created by investments.

As we entered on top of we adopted use eight independent variables to stick to this approach

4.2.2 The Independent Variables

Four independent variables are adapted to stick to this study, such as, Capital Adequacy, Asset Quality, Management Efficiency, Earnings, Liquidity, Bank Size, GDP and INF.

Capital Adequacy

Capital Adequacy Ratio is evaluated by cutting up the total capital to total asset of the bank. It is an assessment of the capital of banks which is employed to protect the depositors and donate the solidity and efficiency of a company's financial structure. It is conveyed as a percentage of a bank's risk weighted credit frostbites.

Asset Quality

The equation of Asset Quality is the Total loans over the Total Assets, which is related to the left verge of the bank balance sheet and it is utilized as the evaluation of the financial valuable of a bank or any financial organization. It is used to explain the related loan performance of the bank, and the high loan will generate the high risk of the bank for that this ratio is useful to evaluate the quality of the asset.

Management Efficiency

The Management Efficiency is evaluated by Operating Expense divided by Operating Income which is utilized to measure how well a bank or any financial organization can utilize its assets and liabilities, and also it can be possible to calculate the turnover of receivable, the quantity of equity and ability of the bank to repay the liability. Banks make an effort to have a higher productivity ratio which permits to be aware that the bank provokes more vital operating earnings than operating expenses. The management efficiency ratios are very important for the manager because it translates the improvement of the bank profitability.

Earnings

This indicator calculated earnings before the interest and taxes are evaluated by Operating Expenses plus Interest Expenses /Net non-interest income plus Interest Income, and permits investors to contrast the profitability of dissimilar companies regardless of their financing structures.

Liquidity

These ratios have included variety ratios such as the current ratio, quick ratio and operating cash flow ratio. Also it is used to measure the ability of the banks' liquidity to cover short-term debts. The liquidity ratio is utilized to measure the liquidity quality of the bank. It is evaluated as bank's Liquid Assets over its total assets. The high ratio gives information about the survival of liquid assets which denotes the bank is immensely liquid. Even so, low ratio makes clear that bank is close to inadequacy and the bank is not liquid.

Bank Size

The bank size is computed by specific bank total assets and its important element that affects bank's profitability. The size of the bank asset may have a negative and positive impact to performance. If the bank's assets are calculated, a positive or negative result on the bank profitability by this evaluation can be obtained. The positive result is the larger size of assets which denotes that the bank is capable of getting more return. In many studies total assets are thrown back by the bank size. An extreme size of assets stands for negative results on bank's profitability.

Inflation

Inflation is a persistent rise in prices over the interval of time. Central banks try to keep the goods' prices down and services at a positive level in arrangement to escape the inflation.

Gross Domestic Product (GDP)

The ratio is the most significant evaluations which displays the country's financial health and standard livelihood. This ratio of valuation is provided below:

$$GDP = \frac{GDP2 - GDP1}{GDP1}$$

4.3 The Methodology

For studying the profitability of commercial banks of Azerbaijan the regression model is run by the E-views software with the panel data. The panel data helps to examine the different year with the different banks, because it computes the cross sectional data and time series data when the regression is used. The data is explored for stationary or non-stationary by utilizing the unit root test. In this study, it is found that all the variables are verified stationary except the GDP GROWTH.

The econometric form of the panel regression analysis is displayed as:

$$Y_{i,t} = \beta_0 + \beta X_{i,t} + \epsilon_t$$

Where;

$Y_{i,t}$ stands for the dependent variable of the function

β_0 is the intercept of the model

$X_{i,t}$ shows the independent variables in the corresponding time (i)

ϵ_t stands for error term

In this analysis, following models are employed:

Equation can be displayed as:

$$ROA = \alpha_1 + \beta_1 CA + \beta_2 AQ + \beta_3 MQ + \beta_4 EA + \beta_5 LQD + \beta_6 LTA + \beta_7 GGDP + \beta_8 INF + \epsilon_t$$

$$ROE = \alpha_2 + \beta_1 CA + \beta_2 AQ + \beta_3 MQ + \beta_4 EA + \beta_5 LQD + \beta_6 LTA + \beta_7 GGDP + \beta_8 INF + \epsilon_t$$

$$NIM = \alpha_3 + \beta_1 CA + \beta_2 AQ + \beta_3 MQ + \beta_4 EA + \beta_5 LQD + \beta_6 LTA + \beta_7 GGDP + \beta_8 INF + \epsilon_t$$

Chapter 5

EMPIRICAL ANALYSIS AND RESULTS

In this part of the study stata program is utilized for the regression analysis. In the previous checking of the regression study, panel unit root test is utilized. It helps to inspect the stationary of variables relying on Levin, Lei and Chu (LLC). According to results, alternative hypothesis is accepted (H_1) if series are stationary, and the null hypothesis (H_0) is rejected if series are not stationary. The methods of Im, Pesaran and Shin (IPS) and Maddala and Wu (M-W) do not exist for this model because of the insufficient number of observations encountered Panel Unit Root Testing.

5.1 The Correlation Analysis

Correlation analysis is utilized to check the force of linear connection among the variables. This analysis would also help to diagnose any multicollinearity problems (i.e. high correlation between independent variables), which can be easily detected. According to the table of correlation analysis it can be seen that there is no perfect correlation among the variables. Correlation analysis results show that there is no multicollinearity problem among the variables. There are no any possible multicollinearity problems between the explanatory variables, because the variables are not highly correlated with each other. The table shows that there are three strong correlations among the variables. Two of them are positive and one of them is negative: Management Quality and ROA whose coefficient is 0.71, and Management Quality and NIM whose coefficient is 0.58. Another correlation coefficient is negative among the Liquidity and Asset Quality whose coefficient is -0.76.

Capital Adequacy indicator has a positive correlation with the profitability indicators. Asset Quality is negatively correlated with ROA and ROE, but positively correlated with NIM. Management Quality indicator is positively correlated with profitability measures. Earning Ability indicator has inverse correlation with profitability indicators. LSIZE is positively correlated with ROA and ROE, but negatively correlated with NIM. Liquidity indicator has positive correlation with ROA and ROE, but negatively correlated with NIM. GDP is positively related with ROA and NIM, but negatively correlated with ROE. INF has a positive correlation with profitability measures.

Table 15. Correlation matrix

	ROA	ROE	NIM	CAP	ASQ	MNG	ERN	L SIZE	LIQ	GDP GR	INF
ROA	1.00										
ROE	0.56	1.00									
NIM	0.61	0.16	1.00								
CAP	0.08	0.14	0.07	1.00							
ASQ	-0.20	0.15	0.05	0.18	1.00						
MNG	0.71	0.23	0.58	0.19	0.35	1.00					
ERN	-0.33	0.08	0.29	0.05	0.14	0.43	1.00				
LSIZE	0.04	0.08	0.11	0.21	0.18	0.08	0.05	1.00			
LIQ	0.15	0.12	0.14	0.17	0.76	0.13	0.05	0.19	1.00		
GDP	0.08	0.02	0.12	0.15	0.08	0.08	0.01	0.01	0.09	1.00	
INF	0.11	0.14	0.14	0.04	0.01	0.17	0.17	0.02	0.08	0.34	1.00

5.2 Regression Analysis Results

Regression analysis is managed by using E-views software program to evaluate the equation. The normally accepted way of choosing among fixed and random effects is running a Hausman test. The Hausman test examines a more efficient model opposed to a less efficient even so consistent model to make certain that the more efficient model also gives consistent results. If they are (insignificant P-value, Prob>chi2 larger than .05), then it is safe to use the random effects. If a significant P-value is get, however, fixed effects should be used. As a result, P-value is equal to 0.99 (insignificant) that is why Hausman test suggests using random effects.

Accordingly, the null and alternative for Hausman test are as follows:

H_0 : Random effects are consistent

H_1 : Random effects are inconsistent

5.2.1 Regression Analysis for ROA (Macro Model)

The regression analysis has been done via stata software and the results of all the variables dependent and independent are obtained. Here, each variables are interpreted separately as follows:

Asset Quality (ASQ)

This ratio is very important to evaluate the capacity of total asset to cover the credit risk that can be created from the total loan. According to the equation that is utilized in the model, the asset quality is equal to total loans over the total assets. The return on asset (ROA) model of the asset quality has Z-statistics with 2.51 and P-value with 0.012. This value tells that the null hypothesis expresses the significant effect of the asset quality for the return on asset (ROA). As a result, increase in asset quality by 5 % will impact to enlarge and raise the return on asset by 5.57 %. Assuming that total

assets are decreased and total loans are fixed, this will push up the ratio of TL/TA, hence, there will be less of interest income on loans and it will lead to decrease of net income. Then it will push up the ratio of profitability determinant. For the moment, any analysis of asset quality requires to take into account the measures of the likelihood of borrowers to compensate their loans. It is especially significant to monitor whether the increase in indebtedness in the economy is focused on sectors that are vulnerable to shifts in economic action.

Management Efficiency (EFF)

For the management efficiency, a higher ratio means that the management has been successful in managing their asset and a lower ratio will mean the opposite. In this case, the study obtained that the management quality has positive effect to profitability of Azerbaijan banks. The return on asset (ROA) model of the management efficiency has Z-statistics with 4.00 and P-value with 0.000. This value tells that the null hypothesis is rejected at alpha (α) level 1% with confidence interval 99 %, and also accepted the alternative hypothesis which expresses that the management efficiency has a statistically significant effect for the return on the asset (ROA). This makes the researcher to reject the null hypothesis and accept alternative hypothesis as well. If the management efficiency ratio increases by 1% then ROA will increase 3.05. EFF describes how well a bank can deploy its asset and liabilities internally to make more profit. In the Azerbaijan case, it means that banks have been successful in managing their asset and liabilities in an effective way that directs the assets in a positive way and thus making a significant positive impact on ROA. This is in line with the work of Demircuc-Kunt and Huizinga (2000) who noticed that expense management is one of the major determinants of bank profitability.

Liquidity Ratio (LQR)

According to the results, liquidity ratio has a positive impact on the profitability ratio. In the return on asset (ROA) macro model, the liquidity has Z-statistics with 3.31 and P-value with 0.001. This number says that the liquidity has a statistically significant impact for the return on the asset (ROA). This means that if LIQ of Azerbaijan banking sector raise by 1 percent, the return on asset will increase by 7.1 % for the ROA. The table represents that Capital Adequacy (CAR), Operating Efficiency, LSIZE, GDP and INF are not significant because P-value has to be lower than 5 percent or alpha of 10 percent that means ROA is not affected by CAR, OE, LSIZE, GDP and INF. R Square founded from the above table concludes that almost about 0.56 or 56% of the changes in ROA can be explained by the independent variables.

Table 16. Regression Results for ROA (Macro model)

VARIABLES	COEFFICIENT	Z-STATISTICS
C	-0.1070	-3.97
CAR	-0.0235	-0.70
ASQ	0.0557	2.51
EFF	0.030569	4.00
ERN	-0.00039	-0.12
LSIZE	0.00191	1.42
LIQ	0.07170	3.31
GDP(GR)	0.02126	0.27
INF	0.00146	0.04
R-SQAURED	0.5651	

5.2.2 The Regression Analysis for ROE (Macro model)

Management Efficiency (EFF)

For the management efficiency, a higher ratio means that the management has been successful in managing their asset and liabilities and a lower ratio will mean the opposite. In this study's case, it is found that the management quality has positively affected the profitability of Azerbaijan banks. In the return on asset (ROE) model, the management efficiency has Z-statistics with 2.62 and P-value with 0.009. This value tells that the null hypothesis is rejected at alpha (α) level 5% with confidence interval 95%, and also accepted the alternative hypothesis which expresses that the management efficiency has a statistically significant effect for the return on the equity (ROE), and this makes the researcher to reject the null hypothesis and accept the alternative hypothesis as well. If the management efficiency ratio increases by 1%, then ROE will increase 10.2 %.

Liquidity Ratio (LQR)

According to the results, the researcher obtained that the liquidity ratio has a positive impact on the profitability ratio, which means if the liquidity of Azerbaijan banking sector increase by 1% the return on equity will increase by 50 % for the ROE. Besides, liquidity ratio (LQR) is significant at 10% level. Its impact is on return on equity. As Golin (2001) mentioned, it is critical that a bank guards carefully against the liquidity risk – the risk that it will not have sufficient current assets such as cash and quickly saleable securities to satisfy the current obligations, especially during the times of economic stress. Without the required liquidity and funding to meet the short term obligations, a bank may fail. Therefore, the higher value of this ratio makes the bank more liquid and less vulnerable to failure. Simple regression analysis for ROE (macro model) displays that Capital Adequacy (CAR), Operating Efficien-

cy, LSIZE, GDP and INF are not significant, that means ROE is not affected by CAR, OE, LSIZE, GDP and INF. R Square found from the below table concludes that almost about 0.103 or 10.3% of the changes in ROE can be explained by the independent variables.

Table 17. Regression Results for ROE (Macro model)

VARIABLES	COEFFICIENT	Z-STATISTICS
C	-0.8298	-1.69
CAR	0.352	0.63
ASQ	0.0669	0.26
EFF	0.102	2.62
ERN	0.0272	0.75
LSIZE	0.029	1.05
LIQ	0.50	1.75
GDP(GR)	-1.456	-0.78
INF	1.033	1.02
R-SQAURED	0.1038	

5.2.3 Regression Analysis for NIM (Macro model)

Management Efficiency (EFF)

For the management efficiency, a higher ratio means the management has been successful in managing their asset and liabilities and a lower ratio will mean the opposite. In this study's case, it is found that the management quality has positively affected the profitability of Azerbaijan banks. In the Net Interest Margin macro model, the management efficiency has Z-statistics with 2.50 and P-value with 0.012. This value tells that the null hypothesis expresses that the management efficiency has a statistically significant effect for the Net Interest Margin. This makes the researcher

to reject the null hypothesis and accept the alternative hypothesis as well. If the management efficiency ratio increases by 1% then NIM will increase 2.4 %. Regression analysis for NIM (macro model) displays that Capital Adequacy (CAR), Asset Quality (ASQ), Operating Efficiency, LSIZE, GDP and INF are not significant. It means that NIM is not affected by CAR, ASQ, OE, LSIZE, GDP and INF. The R-Squared value 0.4477 that 44.770 % of the profitability is displayed. In other words, the other 55.23% can be interpreted from other variables not included in this study.

Table 18. Regression Results for NIM (Macro model)

VARIABLES	COEFFICIENT	Z-STATISTICS
C	0.0155	0.41
CAR	-0.00021	-0.01
ASQ	0.0446	1.58
EFF	0.02451	2.50
ERN	-0.00146	-0.50
LSIZE	-0.00169	-1.24
LIQ	-0.02629	-1.22
GDP(GR)	0.0790	1.42
INF	-0.0084	-0.047
R-SQAURED	0.4477	

5.2.4 Regression Analysis for NIM (Bank specific model)

There are no big differences among the Regression for dependent variables (macro model) and Regression for dependent variables bank specific model results except liquidity. If the liquidity of Azerbaijan banking sector increases by 1% the return on equity will increase by 34% the ROE. R Square found from the below table concludes that almost about 7% of the changes in ROE can be explained by the independent variables.

Table 19. Regression Results for NIM (Bank specific model)

VARIABLES	COEFFICIENT	Z-STATISTICS
C	-0.75	-1.67
CAR	0.26	0.58
ASQ	0.034	0.12
EFF	0.11	2.71
ERN	0.0044	0.28
LSIZE	0.030	1.01
LIQ	0.34	2.31
GDP(GR)	-1.456	-0.78
INF	1.033	1.02
R-SQAURED	0.078	

Chapter 6

CONCLUSION AND RECOMMENDATION

The aim of this research is to investigate the profitability of 24 commercial banks and the main objective of this study was to find the statistical difference of profitability determinants of conventional banks in Azerbaijan. This research inspects the bank specific and macroeconomic variables impact on the profitability of Azerbaijan banks during the period 2008 –2011. Capital Adequacy has insignificant influence on the profitability ratio. This is why CBA must recognize the debt percentage to remove or decrease the rise in credit risk to preserve the Capital Adequacy normally. This may occur because of the growth of the financial firms. As the banks grow, they obtain more market share which raises their profits from giving services to new customers. The study displays that the ASQ has a significant influence on Azerbaijan banking sector. The study shows that LIQ has positive impacts in Azerbaijan banking area. It means that banks hold less liquidity and banks are more profitable than to hold more available liquid asset. EFF has a positive influence for banks in Azerbaijan. It displays high level of managing efficiency in the Azerbaijan. Banks have been leading to excessive profitability in these banks. The research displays that inflation does not have any significant influences on the return on assets, return on equity and net interest margin. Some recommendations for the problems that are inspired in the research, for the Azerbaijan banks macroeconomic factors GDP and INF, are negatively related to the bank profitability. Also, the decrease of the Gross Domestic Product enlarges the bank profitability. As for Azerbaijan's banks should be attentive

in terms of assessing customers' creditworthiness, since as number of defaults pushes up that will induce a growth in provision loans, that will lessen the profitability determinants of banks in Azerbaijan. And finally, the Central bank of Azerbaijan should confirm that loans are obtainable to borrowers at affordable rates, which in the long-would have a GDP growth rate that would have import in line with the profitability of the Azerbaijan banks. In this study, the accessibility of data was limited and that is why there might be an unreasonable connection among variables. Full entrance is required to databases such "Bank Scope Database so that the researchers will be able to embrace the empirical estimation of profitability determinants.

REFERENCES

Ali, K., Akhtar, M. F., & Ahmed, H. Z. (2011). Bank-Specific and Macroeconomic Indicators of Profitability - Empirical Evidence from the Commercial Banks of Pakistan. "*International Journal of Business and Social Science*", 2(6), 235-242

Al-Tamimi, H. A. (2005). The Determinants of the UAE Commercial Banks' Performance: A Comparison of the National and Foreign Banks. *Journal of Transnational Management*, 10(4), 35- 47.

Abreu, M., & Mendes, V., (2002). Commercial Bank Interest Margins and Profitability Evidence from E.U. Countries. Working Paper Series, Porto.

Annual Report of CBA (2008-2011).

Angela, R., & Adina, E. D. (2013). The Determinants of Bank Profitability in Romania. *Annales Universitatis Apulensis Series Oeconomica*, 15(2), 2013, 580-593

Azerbaijan Statistical Committee, (2009). *Macroeconomic Indicators*.

Azerbaijan Republic Ministry of Economic Development. (2007). *Country Profile – Azerbaijan*.

Bayulgen, O. (1999). External Capital and Political Structures: the case of Azerbaijan. Special Issue: Reassessing Peripheries in Post-Communist Studies, Vol. 17, No.

Bashir, A. (2000). Determinants of Profitability and Rates of Return Margins In Islamic Banks: Some Evidence from the Middle East Grambling State University Mimeo.

Davydenko, A.(2011). Determinants of Bank Profitability in Ukraine.Undergraduate Economic Review, Vol. 7:Iss. 1, Article 2.

Daiva, J., & Dovile, D. (2013).The Determinants of Financial Performance of Commercial Banks in Lithuania. European Scientific Journal November 2013 Edition vol.9, No.31

Demirguc-Kunt, A. & Huizinga, H. (2000). Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence. *The World Bank Economic Review*, Vol. 13, NO. 2: 379-408.

Economical Reviews BBC. (2002). Country Profile – Azerbaijan, *Azerbaijan Trade and Trade Facilitation Review*.

En.wikipedia.org/wiki/list_of_banks_in_Azerbaijan.(2011).

FINEKO. Analytical and Information Agency.(2011).

Golin J, (2001). The Bank Credit Analysis Handbook: A Guide for Analysts, Bankers and Investors. Wiley Finance Series book

Greuning H.V., & Bratanovic S. B., (2003) “Analyzing and Managing Banking Risk: A framework for Assessing Corporate Governance and Financial Risk”, The

World Bank. Journal of Finance & Banking Studies

Hassan, M.K. & Bashir A-H.M. (2003), “Determinants of Islamic Banking Profitability”, Paper presented at the Economic Research Forum (ERF) 10th Annual Conference, Marrakesh, Morocco, 16-18 December

Joao, P. Q. (2013) . The Determinants of Banks Profitability Portuguese Case. Research Unit of Business Science

Kosak, M., Cok, M. (2008). Ownership Structure and Profitability of the Banking Sector: The Evidence from the SEE Region. *Preliminary Communication*, UDC: 336.71(497)

Kosmidou, K., Tanna, S., & Pasiouras, F. (2005). Determinants of Profitability of Domestic UK Commercial Banks: Panel Evidence from the period 1995-2002. *Economics, Finance and Accounting. Applied Research Working Paper Series*

Klimentina,P. (2013). The Determinants of Financial Performance of Commercial Banks in Macedonian Bank. *Research Journal of Finance and Accounting*

Kundid, A. (2011).The Determinants of Bank Profitability in Croatia. *Croatian Operational Research Review* pp. 168–182

Molyneux, P., & Thornton, J., (1992). Determinants of European Bank Profitability: A Note. *Journal of Banking and Finance* 16 (6), 1173-1178.

NBA, 2008-2011.

Paolo, S. H.(2011). The Determinants of the Profitability of the US Banking Industry. *International Journal of Business and Social Science*

Sabi, M. (1997). Banking in transition: Development and Current Problems In Azerbaijan. *Journal of Comparative Economics*

Saksonova, S., & Solovjova, I. (2011). Analysis Of The Quality And Profitability Of Assets In The Banking System And The Impact Of Macroeconomic Factors On Its Stability-Case Of Latvia. *International Conference On Applied Economics*, (pp. 537-548).

Sara, K.& Muhammad, N. (2013). The Profitability of Listed Commercial Banks in Pakistan. *European Journal of Business and Social Sciences*, Vol. 2, No.9 ,pp 186-201

Sailesh, T., & Fotios, P., (2005). The Determinants of Profitability of Domestic UK Commercial Banks: Panel Evidence from the period 1995-2002. *Applied Research Working Paper Series*

Sami, B. N. (2003). The Determinants of the Tunisian Banking Industry Profitability. *University Tunis Working Papers*

Standard & Poor's Governance Services (2010).

Sufian, G. (2009). The Profitability of Korean Banking Sector, *Journal of Economic and Management*, Vol. 7, No. 1, PP. 43-72.

Tomola, M. O. (2013). The Determinants of Banks Profitability in Nigeria. *Organizations and Markets in Emerging Economies*, 2013, Vol 4, No. 2(8)

Vincent, O. (2011). The Determinants of Financial Performance of Commercial Banks in Kenya. *Journal of Economics and Financial*

Vong, A. P., & Chan, H. S. (2009). The Determinants of Bank Profitability in Macao. *Macau Monetary Research Bulletin*, 12, 93-113.

World Bank, (2008).

APPENDIX

Appendix A: Panel Unit Root Tests for Azerbaijan Banks

Table 1. Panel Unit Root Test for ROA

Null Hypothesis: Unit root (common unit root process)		
Series: ROA		
Date: 07/25/14 Time: 14:50		
Sample: 2008 2011		
Exogenous variables: Individual effects		
Automatic selection of maximum lags		
Automatic selection of lags based on SIC: 0		
Newey-West bandwidth selection using Bartlett kernel		
Total (balanced) observations: 72		
Cross-sections included: 24		
	Statis-	Prob.*
Method	tic	*
	-	
	12.231	0.000
Levin, Lin & Chu t*	7	0

Table 2. Panel Unit Root Test for ROE

Null Hypothesis: Unit root (common unit root process)		
Series: ROE		
Date: 07/25/14 Time: 14:51		
Sample: 2008 2011		
Exogenous variables: Individual effects		
Automatic selection of maximum lags		
Automatic selection of lags based on SIC: 0		
Newey-West bandwidth selection using Bartlett kernel		
Total (balanced) observations: 72		
Cross-sections included: 24		
	Statis-	Prob.*
Method	tic	*
	-	
	25.122	0.000
Levin, Lin & Chu t*	5	0

Table 3. Panel Unit Root Test for NIM

Null Hypothesis: Unit root (common unit root process)		
Series: NIM		
Date: 07/25/14 Time: 14:51		
Sample: 2008 2011		
Exogenous variables: Individual effects		
Automatic selection of maximum lags		
Automatic selection of lags based on SIC: 0		
Newey-West bandwidth selection using Bartlett kernel		
Total (balanced) observations: 72		
Cross-sections included: 24		
	Statis-	Prob.*
Method	tic	*
	-	
	25.122	0.000
Levin, Lin & Chu t*	5	0

Table 4. Panel Unit Root Tests for Independent Variables

Null Hypothesis: Unit root (common unit root process)		
Series: CAP		
Date: 07/25/14 Time: 14:54		
Sample: 2008 2011		
Exogenous variables: Individual effects		
Automatic selection of maximum lags		
Automatic selection of lags based on SIC: 0		
Newey-West bandwidth selection using Bartlett kernel		
Total (balanced) observations: 72		
Cross-sections included: 24		
		Prob.*
Method	Statistic	*
		0.000
Levin, Lin & Chu t*	-57.9661	0

Table 4. Panel Unit Root Tests for Independent Variables (continued)

Null Hypothesis: Unit root (common unit root process)		
Series: ASQ		
Date: 07/25/14 Time: 14:55		
Sample: 2008 2011		
Exogenous variables: Individual effects		
Automatic selection of maximum lags		
Automatic selection of lags based on SIC: 0		
Newey-West bandwidth selection using Bartlett kernel		
Total (balanced) observations: 72		
Cross-sections included: 24		
	Statis-	Prob.*
Method	tic	*
	-	
	1.4388	0.075
Levin, Lin & Chu t*	5	1

Table 4. Panel Unit Root Tests for Independent Variables (continued)

Null Hypothesis: Unit root (common unit root process)		
Series: MNG		
Date: 07/25/14 Time: 14:56		
Sample: 2008 2011		
Exogenous variables: Individual effects		
Automatic selection of maximum lags		
Automatic selection of lags based on SIC: 0		
Newey-West bandwidth selection using Bartlett kernel		
Total (balanced) observations: 72		
Cross-sections included: 24		
	Statis-	Prob.*
Method	tic	*
	-	
	39.282	0.000
Levin, Lin & Chu t*	1	0

Table 4. Panel Unit Root Tests for Independent Variables (continued)

Null Hypothesis: Unit root (common unit root process)		
Series: EQ		
Date: 07/25/14 Time: 14:56		
Sample: 2008 2011		
Exogenous variables: Individual effects		
Automatic selection of maximum lags		
Automatic selection of lags based on SIC: 0		
Newey-West bandwidth selection using Bartlett kernel		
Total (balanced) observations: 72		
Cross-sections included: 24		
	Statis-	Prob.*
Method	tic	*
	-	
	13.099	0.000
Levin, Lin & Chu t*	7	0

Table 4. Panel Unit Root Tests for Independent Variables (continued)

Null Hypothesis: Unit root (common unit root process)		
Series: LSIZE		
Date: 07/25/14 Time: 14:57		
Sample: 2008 2011		
Exogenous variables: Individual effects		
Automatic selection of maximum lags		
Automatic selection of lags based on SIC: 0		
Newey-West bandwidth selection using Bartlett kernel		
Total (balanced) observations: 72		
Cross-sections included: 24		
	Statis-	Prob.*
Method	tic	*
	-	
	49.062	0.000
Levin, Lin & Chu t*	6	0

Table 4. Panel Unit Root Tests for Independent Variables (continued)

Null Hypothesis: Unit root (common unit root process)		
Series: LIQ		
Date: 07/29/14 Time: 16:13		
Sample: 2008 2011		
Exogenous variables: Individual effects		
Automatic selection of maximum lags		
Automatic selection of lags based on SIC: 0		
Newey-West bandwidth selection using Bartlett kernel		
Total (balanced) observations: 72		
Cross-sections included: 24		
	Statis-	Prob.*
Method	tic	*
	-	
	14.148	0.000
Levin, Lin & Chu t*	3	0

Table 4. Panel Unit Root Tests for Independent Variables (continued)

Null Hypothesis: Unit root (common unit root process)		
Series: GDPGROWTH		
Date: 07/25/14 Time: 15:06		
Sample: 2008 2011		
Exogenous variables: Individual effects		
Automatic selection of maximum lags		
Automatic selection of lags based on SIC: 0		
Newey-West bandwidth selection using Bartlett kernel		
Total (balanced) observations: 72		
Cross-sections included: 24		
	Statis-	Prob.*
Method	tic	*
	15.76	1.000
Levin, Lin & Chu t*	44	0

Table 4. Panel Unit Root Tests for Independent Variables (continued)

Null Hypothesis: Unit root (common unit root process)		
Series: INF		
Date: 07/25/14 Time: 14:42		
Sample: 2008 2011		
Exogenous variables: Individual effects		
Automatic selection of maximum lags		
Automatic selection of lags based on SIC: 0		
Newey-West bandwidth selection using Bartlett kernel		
Total (balanced) observations: 72		
Cross-sections included: 24		
	Statis-	Prob.*
Method	tic	*
	-	
	63.944	0.000
Levin, Lin & Chu t*	6	0