Impact of Four Major Macroeconomic Factors on Non-Performing Loans of Commercial Banks in Pakistan: A Case from 2004 - 2014

BY

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Letter of Acknowledgement

I’d like to genuinely utter my thankfulness to The Almighty Allah for the Blessings He has bestowed upon me to fix this purposeful work.

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Abstract

Purpose- The study makes Non-performing loans dependent variable and Discount Rate, CPI, Exchange Rate and GDP growth its independent variables. The motivation to study NPLs came from the brainstorming sessions during the topic selection process and various other researches that were referred to during the topic selection process.

Methodology/sample- The research aims to establish a relationship between these variables for the time period of 2004-2013 through using quarterly data and applying multi-variable regression via SPSS for NPL, discount rate, CPI, exchange rate and GDP growth. The correlation between the dependent and independent variables is 0.971, which shows the variables are highly correlated to each other collectively. State Bank of Pakistan issues the number of non-performing loans, which includes NPLs of DFIs and banking sector. However, in the research, non-performing loans of the banking sector have been taken into consideration.

Table of Contents

Chapter I - Introduction

1.1 Background

In accordance with the State Bank of Pakistan's policies, the Non- Performing loans (NPLs) are loans, which have overdue markup or principal by 90 days or more from its due date. Banks have an inclination to take a very vigilant tactic before proceeding to giving loans because the increase in NPLs would affect the lucrativeness of those banks.

As Alton and Hazeen (2001) state, accruing interest for 90 or more days post to the due date are called Non-performing loans. Henie (2003) suggests that all those loans, which are not out coming into any revenue are Non- Performing loans (NPLs).

These loans result in a large amount of total assets of any bank. These assets produce significant interest income for the banking sector and these earnings are the indicators of the financial performance of the banks. However, some of these advances become non-performing loans and leave a negative impact on these banks. Banks have a significant part in any nation's economy. Grening and Bratanouvic (2003), discuss that commercial banks have a very crucial role in developing markets where most debtors have no admittance to investment markets. According to Barth and Senhadji (2001), successful commercial banks speed up the economic growth while under-performing banks are hurdles in the way of a progressive economy of a country. Thus it has significant importance in identifying the difficulties, which affects the performance of this sector. As Krosner (2002) in Waweru and Kelami (2009) described, NPLs are very much allied with banking crises. Greenidg and Grosvenor (2010) claim that the scale of NPLs is a critical division in the beginning of financial and banking issues.

Guy (2011) disputes that NPLs are an important tool to measure asset quality among loaning organizations and are often linked to the letdowns and financial crises in both; the developed and developing countries.

Brown bridge (1998) found that study conducted in other countries revealed that most of the bank failures have been caused by NPLs. Ahmed (2002) examined Malaysian financial system. He found a strong link between credit vulnerability, NPLs and financial crunches and concluded that credit was piling up before the Asian Financial crisis (1997) and got to be more severe as NPLs surged.

Boudrega (2009) reminded that NPLs are still a main reason of concern for global and domestic officials in spite of current efforts to regulate advancing policies of bank.

In modern times, the banks have had a relaxed approach by investing in a very large portion of risk-free government securities. Private loans have been insignificant for the past couple of years. The effect on any county's economy is a proof because of such an approach. Consumer financing, after remaining low for few years, picked up in FY14. Consumer financing decreased to Rs.10.7 billion in July-Dec 2014 from 13.8 billion in July-Dec 2013.

It will be an important task to get an insight on NPLs. We wish to study the relation of NPLs with economic growth, inflation, exchange rates and interest rates. Data of the past 10 years (2004-2014) will be incorporated in the research. Further I will conduct qualitative study to find more micro level factors affecting Non-Performing Loans. I will conduct industry-based interviews including credit analysts, relationship managers, loan officers and recoveries officers.

1.2 Problem Statement

Impact assessment of real GDP growth, inflation, exchange rates and interest rates on Non-Performing Loans.

1.3 Research Objectives

1. To know the relationship between real GDP growth and non-performing loans
2. To know the relationship between inflation and NPLs
3. To know the relationship between Discount rate and NPLs
4. To know the relationship between exchange rate and NPLs
5. To know the framework for calculating and assessing the credit risk.

1.4 Research Questions

Following are the research questions of my study

- What is the relationship between Discount rate and NPL?
- What is the relationship between CPI and NPL?
- What is the relationship between real GDP growth and NPL?
- What is the relationship between Exchange rate and NPL?

1.5 Research Methodology

This research will have a quantitative approach. To test the economic indicators' impact on NPLs, the total non-performing loans of commercial banks will be used. Total NPLs will be compared with economic growth, inflation, exchange rate and interest rates using regression.

Multi-variable regression will be applied to find the relationship between the determinants and NPL. On Y-axis, dependent variable; NPL will be mentioned and on X-axis; independent variable will be written.

Further we will conduct interviews from industry personnel that include credit analysts, relationship managers, recoveries officers and other personnel involved in risk management. This process will add credence to our quantitative analysis and result in better insights on NPLs.

1.5.1 Data Collection Process

Data will be acquired through the official websites of SBP and Pakistan Bureau of Statistics (PBS) as well as State Bank's library. Microsoft Excel or SPSS will be used to analyze the data.

Interviews with industry personnel will serve as a source of primary data to back our research done with the help of secondary sources.

1.5.2 Population of the Study

There are 56 banks registered with Pakistan Banking Association and State bank of Pakistan.

Besides the banking system, SBP website categorizes NPL in different sector, those are: Small and Medium Enterprise Sector, Corporate Sector, Consumer sector, Agriculture Sector, Commodity financing, Staff Loans and Others. They all will be my total population.

1.5.3 Sample Size and Sample Methodology

We will be taking aggregated NPL of all the sectors from 2004 to 2014. Data of all variables will be taken on quarterly basis. NPLs of commercial banks will be studied only.

1.5.4 Research Tools

- Secondary data from State bank of Pakistan
- Interviews with the industry personnel in banking sector

1.6 Hypothesis

H1: Real GDP growth affects NPLs

H0: There is no relation between real GDP growth and NPL

H2: There is a relationship between inflation and NPL

H0: Inflation and NPL has no relation with each other.

H3: Discount rate and NPL has relation with each other

H0: Discount rate and NPL has no relation

H4: Exchange rate does affect non-performing loans

H0: There is no effect of exchange rate on non-performing loans

1.7 Purpose of Study

This study will be able to serve as a tool to bore the macroeconomic determinants of NPLs. It will also provide insight into the other determinants of NPLs. The study will help construct relationship between macro-economic indicators and NPLs. It will help bore the future trend of NPLs by forecasting the movement of economic indicators.

Significance of the Study

- Firstly, this study will help the researchers to fulfill the requirement of their MBA that is to do a thesis course of 6 credit hours. The researchers will apply the knowledge of what they have studied in their research, finance, economics and banking courses.
- The study serves as an opportunity to researchers to enhance their financial and banking which they have gained in their bachelors program. And also be exposed into the practical working field of finance and banking sector.
- This study will be used as the source of information for other students, for other future researches on banking and finance sector
- This study will help banks to recognize the main reasons of NPLs and how to solve this issue with the help of different polices.
- The study would also help to get insight on what is required to enhance the quality of loans and ensuring asset quality.
- The findings of this study could be taken into account to define the framework for calculating and assessing the credit risk.
- This study would serve as a tool to gauge the macro-economic factors of NPLs.

It would also provide insight into the micro level determinants of non-performing loans.

Chapter II - Literature Review

Since the Economic Crisis and Loan Losses after the Credit crunch '08, the topic of Non-performing loans has become increasingly interesting to Financiers and Economists. However, models proving relationships between credit risk and economic movement aren't new in the literature. The classical literature analyzing and studying the relations between macroeconomic situation and financial nuts and bolts lead to the models designed by Plosser and King (1984), Bernenke and Gertler (1989), Kiyotaki and Moore (1997) and Bernanke, Gartler and Gilchrist (1998). Authors including Boss (2002) and Virolainen (2004) also analyzed the impact of macro-fundamentals on the credit quality of banks' debtors using Wilson's (1997) framework. In our literature review, we will be analyzing a bunch of such published researches proving linkages between macroeconomic environment and financial basics.

One of the most popular and earliest works on Non-performing loans dates back to 1987 done by Keeton and Morris. According to them, the local economic circumstances along with the unfavorable performance of some segments results in higher NPLs by the banks. The study conducted by Williamson (1987) suggests a strong relationship between many economic variables and NPLs. These factors include real prime rate, the yearly GDP growth and inflation rate, loans growth, the real conversion rate, the unemployment numbers and Money Supply (M2).

Senkey and Greenwalt (1991) found a considerable direct relationship between the loan-loss rate and other factors such as high discount rates, disproportionate landing, and unstable funds. Loan-loss rate is defined as net advances charge offs plus NPLs divided by aggregate loans plus net charge-offs. Moreover, they also propose that bad economic conditions also add to the loan-loss rate of the commercial banks. Lawrence (1995) suggests that borrowers with lower incomes have higher rates of default. Sergio (1996) researched on Non-performing loans in Italy and interestingly proved that business cycle cannot be the key determinant of banks' Non-Performing Loans. Kaminseky and Reinhart (1999) also suggest that a large increase in Non-Preforming Loans can be utilized to check the start of an emergency. The relationship between the macroeconomic circumstance and the nature of loans has been considered in the periods of the business cycle with saving money soundness. The monetary development stage is checked by generally less awful loans, as people and organizations have adequate earnings to cover their obligations on time of loan. Moreover Richard (1999) found a solid negative relationship between genuine interest rates ascertained by ostensible interest rate on 3-year treasury notes less CPI rate.

Gizycki likewise looked into on the same subject for the period 1990 and 1999 and included GDP development, genuine interest rates and loan development as variables. A critical impact of cushioned offer of interest installments was found by the creator in the family units' pay and partnerships on the nature of loans. Different creators who considered resource cost substantiation additionally settled a relationship between expansion in credit hazard and poor macroeconomic circumstances (Meuller, 2000; Anderson and Sundaresan, 2000; Collin-Dufresne and Goldstein, 2001). Kent and D'arcy (2000), in an investigation of Australian banks recommended that in spite of the fact that dangers had a tendency to be acknowledged amid the contractionary period of the business cycle, they really topped at the highest point of the cycle.

By, Martinez and Saurina (2000), the low nature of loans just get to be obvious amid downturns with an expected crevice of roughly three years on account of Spain.

Resti and Sironi (2001) conducted a research on corporate bond recovery rate inculcating bond default rate, amount of outstanding bonds, macroeconomic factors such as GDP and growth rate, default amount, return on default bonds, and return on stock. He concluded that default rate, amount of bonds, default bonds, and economic downturn, negatively affect the NPLs whereas GDP growth, and return on stock positively impact corporate recovery rate. Bloem and Gorter (2001) concluded in their study that Non-Performing Loans might also be caused by wrong economic decisions or they might just be a matter of bad luck. Lis, et.al. (2002) researched that bank size, GDP growth, and Capital negatively impact Non-performing loans while increase in Loans, debt-equity ratio, net interest margins, collateral, market strength and official bank guidelines influence Non-Performing Loans positively. He also enlightened Spain's bank loan losses employing a range of indicators including GDP growth, firms' debt-equity ratios, regulation regime, growth in loans, growth rate of banks' branches, and size of bank, collateral loans, net interest margins, capital-asset ratio and market strength of default companies. Kalirai and Scheicher (2002) studied Austrian banks for the period 1990-2001 and prove that short-term nominal interest rate, industrial production, stock market return and a business confidence index as determinants of loan quality in Austria. Shu (2002) states that NPLs is negatively affected by CPI rate, GDP growth, and increase in property prices while positively affected by nominal interest rates. Another study conducted by Bercoff et al (2002) examines the instability of Baking system of Argentina from 1993 to 1996. As per their study, NPLs are affected by both macroeconomic elements and bank specific factors. They elaborated that the money multiplier, growth in advances and reserve sufficiency

affect NPLs. A study conducted by Salas and Saurina (2002) also shows that real growth in GDP, rapid credit expansion, bank size, capital ratio and market power cause variation in NPLs. Boss' (2002) research concludes that industrial production, CPI, stock market's index, nominal short-term interest rate, and oil prices were the major determinants of corporate defaults.

Das and Ghosh (2003) built a relationship between non-performing loans of India's public sector banks in terms of various indicators such as asset size, credit growth and macroeconomic condition and operating efficiency indicators. On the other hand, Rajan and Dhal (2003) deployed panel regression analysis and reached to the conclusion that favorable economic environment (calculated by GDP growth) and financial factors including cost and terms of credit, size of bank, credit orientation, and maturity considerably affects Non-Performing Loans of commercial banks in India. Fuentes and Maquieira (2003) conducted a research on Chilean Banks and found that interest rates had a greater effect on Non-Performing Loans than the economic cycle. Koch and McDonald (2003) suggest that in good economic times, lender and borrower both are assured about investment project and their capability to pay off their credits. Virolainen (2004) suggests a significant relationship between corporate sector default rates and key macroeconomic variables including GDP, interest rates and corporate indebtedness.

Marcucci J. and Quagliariello M (2005) examined the cyclical behavior of the default rates of Italian bank borrowers for the period 1990 to 2004. They tested the impact of business cycle conditions on bank customers' default rates. Their results conclude that the default rates follow a cyclical pattern tending to fall in times of economic boom and increase during economic slump. Also Saurina and Jimenez (2005) studied the Spanish banking sector from 1984 to 2003 where they ascertained that NPLs are determined by high prime rates, GDP growth and kind credit terms. This study also links these determinants to disaster myopia, agency problems and herd behavior that may lure bank management to advance extensively in the times of booming economy. Fofack (2005), employed a pseudo panel-based model for Sub-Saharan African countries and concluded that an increase in GDP, a rise in real exchange rate, the real interest rate, net interest margins, and inter-bank loans are the most important elements impacting NPLs in these countries. Fofack also connects the macroeconomic factors and loan losses to the monotonous nature of some African nations. Hu et al (2006) analyzed the relationship between loan losses and commercial banks' ownership structure in Taiwan. He concluded that banks, which are run by state, recorded lower NPLs. He also suggests that size of bank is indirectly related to loan losses while diversification may not be an influence. Other macroeconomic indicators including the conversion

rate, unemployment numbers, and asset and house prices can also be important (study on Spain by the IMF, 2006). A recent research printed by Schuermann, Pesaran, Weiner and Treutle (2006) relates the value variations of a loan assortment to a dynamic universal macroeconomic model and proves that the relationship between corporations and the business cycle is a major factor of default probabilities. Segoviano M. (2006) conducted research on Norwegian and Mexican economies showing that an increase in credit to GDP and asset prices has a significant impact on the probability of default in countries. This study also observes that when periods of aggregate strong increases in credit and real asset prices take place, there is an increased likelihood of stress taking place in the financial system in terms of increased default probabilities, two or four years ahead. Rinaldi and Sanchis-Arellano (2006) suggests that the probability of default depends on current income, the unemployment rate and the lending rate. Arpa, Giulini, and Pauer studied the risk provisions of banks associated with operating income by using data from Austrian banks and they concluded that risk provisions share in total banking sector loans is negatively related to real interest rate and real GDP growth whereas its positively related to real estate price, inflation and CPI. Zemanand Jurea conducted a study on Slovakian banks by using variables: real GDP, exports, the output gap, oil prices, industrial production, M1, CPI, nominal exchange rates and nominal interest rates. They concluded that real GDP, the nominal interest rate and exchange rate are the most important variables influencing the dynamics of NPLs. They also suggested that a fall in GDP growth is not expected to have a considerable impact on banking performance. Mannasoo and Mayes found that a decline in GDP growth and fluctuations in the internal and external environment of banks cause a downfall in the performance of banking sector and its stability. Festic et al. also analyzed the influence of macroeconomic and bank specific factors as the determinants of vulnerability towards Non-Performing Loans of 5 newly member European Union States. They included deposit to loan ratio, foreign direct investment (FDI), loan to assets ratio, exports, net foreign assets to net assets ratio, gross fixed capital to GDP and compensation of employees relative to household demand. The results showed that loan to assets ratio sparked an increase in NPLs because of the soft loans given by the banks. The gross fixed capital contributed in the GDP growth and ultimately decreased the NPLs. Growth in the exports and industrial production also improves Non-Performing Loans' repercussions on Greek and Romanian Banking.

Berge and Boye (2007) stated that there is a positive relationship between unemployment in the economy and non- performing loans.

Other researches also suggest the non-linear connection between macroeconomic shocks and credit risk (Drehmann, 2005; Jakubik, 2007). Quagliariello (2007) study about the banking system of Italy and examines banks behavior over the business cycle. The research shows that development of the business cycle affects banks' riskiness and profitability. Simons and Rolwes (2008) also found a convincing negative relationship between the default rate and GDP growth in the Netherlands. In their research, they also included the oil price, the interest rates and exchange rate as variables for the loans default, proving a significant relation in several sectors. Bhattacharya and Roy (2008) suggest that while the economy is on the rise, the economic activities are generally increasing and the volume of cash held for either businesses or households is increasing. These conditions enable the borrowers to repay their loans, which ultimately reduce the credit risk of banks.

NPLs, recently, have occupied the attention of numerous authors specifically in understanding the variables liable to the financial vulnerability (Khemraj and Pasha, 2009). This vulnerability is a result of bad debt as exposed by the strong relationship between NPL and banking crises. According to Inekwe (2010), non-performing loans arise from the extension of credit facilities to customer. In a study of Greek banking sector, Louzis et al. (2010), used dynamic panel data to investigate the elements of NPL for each category of loan. Macroeconomic indicators including the real GDP growth, the unemployment number and the real interest rate for each loan category were studied. They studied the data for the period 2003-2009. The results prove that impaired loans is related to the macroeconomic variable including the real GDP growth, rate of unemployment and real interest rate whereas the NPL on mortgages are less sensitive to macroeconomic conditions. Similarly, Espinosa and Prasad (2010) conducted a study on 80 banks in GCC countries. They studied the data for the period 1995 to 2008. They found that the NPL ratio arise when growth in economy becomes poorer and the interest rate and risk aversion increase. The same paper also advises that the aggregate effect of macroeconomic shocks over a timeframe of three years is very crucial. Adela and Lulia (2010) studied how these banking basics average interest rate is linked with NPLs in Romanian banking system from the period of 2006 to 2010. As per their results, they also advise that there are indirect channels affecting the NPLs as well. Ali and Daly (2010) found no significant relationship between short-term interest rate and credit risk in Australia.

Louzis, Vouldis and Metaxas (2010) found a direct relationship between NPL and real lending rates.

Out of three parts of his literature, Nkusu (2011) analyzes the relationship between NPL and macro financial conditions proving the positive impact of NPL on the probability of crisis and subsequently the key role played by NPL in predicting banking crunches.

Bofondi and Ropele (2011) suggest that the effect of interest rates ought to be positive, which causes an increase in the debt due to increased interest payments. Hence, non-performing loans rise. Thiagarajan, Auuapan et al. (2011) conducted a study analyzing the relationship between current CPI and one year lag CPI with credit risk and found a positive relationship between current CPI and credit risk.

Glene and Mondragon-Velez (2011) conducted a research on 22 developed economies from 1996-2008 and reached to the conclusion that an increase in loan losses are caused mainly by private segment leverage, real Gross Domestic Product growth, and an absence of capitalization within the banking arrangement. Dimitrios Angelos and Vasilios (2011) conducted a study on nine largest Greek banks for the period 2003 to 2009 to inspect the determinants of NPLs in Greek banking system for every credit category separately. In their opinion macroeconomic variables including unemployment, real GDP growth rate, and lending rate have the ability to affect the level of NPLs and are also responsible for variations in NPLs. Sofolis and Eftychia (2011) analyzed the impact on NPLs in Romanian banking system and demonstrated that unemployment rate, external debt to GDP, inflation, money supply and investment with construction spending along with country's crises specific variables influences the credit risk of banking structure. Solarin, Sulaiman and Jauhari (2011) studied the Islamic banks in Malaysia and suggested that discount rate has a considerable impact on Non-Performing Loans in the long run while efficiency has an insignificant positive relationship with Non-Performing Loans, which also decreases the sturdier belief of Islamic banks working on profit and loss instrument because productivity has minimal impact than discount rate. Asari et al. (2011) also wrote on the Malaysian banks for the period 2006 to 2010 to test the relationship of discount rate and inflation on NPLs. They found a sturdy long run relationship between NPLs and interest rate while the relationship between inflation and interest rate is insignificant in long run. According to their study, inflation and interest rate couldn't impact NPLs in short run. Vogiazas and Nikolaidou (2011) researched on the factors causing non-performing loans in the Romanian banking sector during the European debt crisis. They studied the data for the timeframe 2001 to 2010. According to them, construction and investment expenditure, rates of unemployment and inflation and Romania's external debt to GDP and M2 (Narrow money and Intermediate money) impact the credit risk of country's banking system. Adebola, Wan Yusoff and Dahalan (2011) studied the determinants of non-performing

loans in the Islamic banking sector of Malaysia for the period of 2007 to 2009. According to them, discount rate has a significant positive relationship with the NPLs and producer price index has a negative and significant relationship with the NPLs in the Islamic banking sector of Malaysia.

Vighneswara Swamy (2012) in his research suggests that Macroeconomic factors do matter. He highlighted factors such as economic downturns, slumps, and low rate of savings, fragile markets, and decline in per capita income levels, inflation and depressions in industrial production. He also highlighted that there is a strong correlation between the elements such as GDP growth increasing the bank credit. According to Olaya Carlos (2012), recent evidence suggests that the debt crisis of the European economies has a direct effect on macroeconomic indicators including unemployment, GDP and inflation. Saba I. and Kouser R. (2012) studied the relationship between macroeconomic variables and the default loans. Their results prove that macroeconomic factors including interest rate has a negative relationship with NPLs while real GDP per capita has a positive relationship with NPLs. Pain studied about the aspects influencing charges to loan loss supplies in key banks of England from 1978 to 2000. The variables he included were GDP growth of the world (negative), the level of prime rate and average loan portfolio concentration, share of credits extended to 11 commercial real estate divisions and the cost to income ratio. Kearns developed a model including rate of unemployment, GDP growth rate, loan growth rate, and income before tax and LLP in net income from banking activity and share of loans in assets as variables (last variable is taken as a measure of income smoothing comportment of banks). Gerlach, Peng, and Shu also found a considerable influence of nominal interest rates, CPI, economic growth, and changes in prices of real estate. The conclusion they made was that real estate prices can be construed as a business cycle measure that would produce the expected effect assuming that real estate credit quality is less sensitive to business cycle than other credits. Whitley, Windram and Cox conducted a study and concluded that interest burden of households has a very strong affect on credit quality. Hoggarth, Logan and Zicchino present alike finding related to corporate credit quality and corporate bankruptcy rates. Gambera built a set of simple VAR models elaborating credit quality of the banks cracked down by bank size and loan type. Credit quality in these models is connected with business cycle indicators, borrower incomes, and unemployment rates. Baboucek and Jancar embrace credit quality in a simple macroeconomic VAR model for the Czechs economy, which deals with the interactions between the money supply, advances, exchange rate, terms of trade, CPI, and short-term interest rates and rate of unemployment. In their study, weakening in credit quality contributes to a reduction in unemployment and an increase in inflationary pressure. A model developed by Glogowski and

Zochowski includes the export growth, nominal exchange rate, and GDP growth. The model indicates that stagnation in economic growth and an appreciating exchange rate depressingly affects credit quality. Saad and Kamran (2012) suggested that interest rate instability significantly but not solely impact rising NPLs and some other macroeconomic aspects, political aspects and banks' credit policy needs to researched in detail to find the reason of NPLs. Siddiqui, Malik and Shah (2012) also conducted a study on Pakistani banks for the period 1996 to 2011 and suggested that NPLs are affected by volatility on interest rates.

A growing economy is favorable to an increase in revenues and a decrease in financial distress because of which GDP growth and Unemployment are negatively related to NPL whereas unemployment is positively related to NPL (Messai and Jouini, 2013). The authors further suggest whenever there is a downturn in the economy, the level of bad debts will increase. In case of floating interest rate, interest rates also affect the amount of bad debts.

Chapter III - Theoretical Framework

3.1 Diagrammatic Presentation

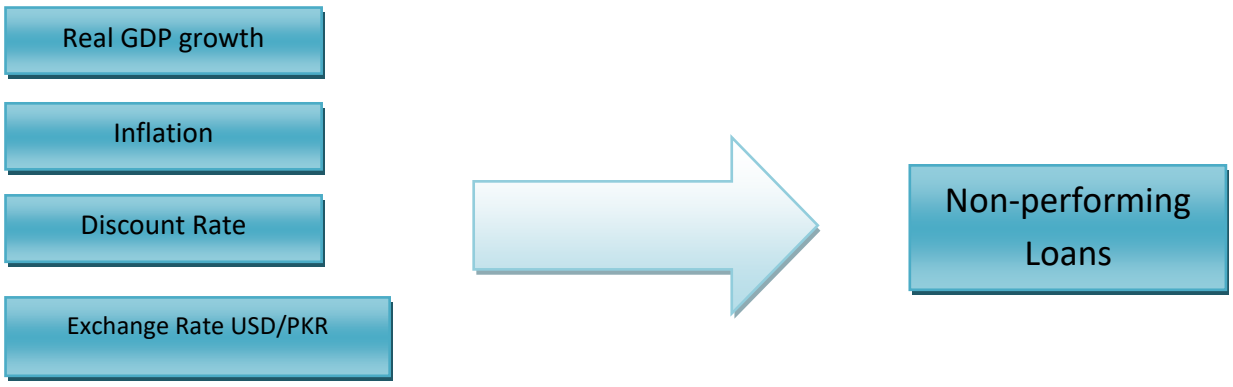


Figure3.1: Theoretical Framework

Badar, M. and Javid, A.Y. (2013) – "Impact of Macroeconomic Forces on Non-performing Loans: An Empirical Study of Commercial Banks in Pakistan"

3.2 Explanation of Framework

I will find out the relationships of the above-mentioned variables with NPLS. Real GDP growth, inflation, exchange rate and discount rate are the independent variables, whereas NPLs is the dependent variable. Multivariable regression will be used to analyze the relationships between the above-mentioned dependent and independent variables.

Literature review suggests that real GDP growth has inverse relationship on NPLs. Impact of inflation and exchange rate on NPLs is ambiguous i.e. it can be positive in some cases. However, negative relation has also been found in some cases. Direct relationship exists between discount rate and NPLs.

3.3 Definition of Variable of Framework

3.3.1 Real GDP Growth

It measures the percentage of change that a country's gross domestic product (GDP) experiences in a fiscal year.

There is negative correlation between NPLs and GDP growth according to various researches (Khamraj and Pasha, 2009; Rajan and Dhal, 2003; Fofack, 2005). This negative correlation exists because growth in GDP increases the income, which results in enhanced loan payment capacity of borrower contributing to lower NPLs.

3.3.2 Inflation

It is the rate at which general price levels of goods and services are increasing, ultimately reducing the purchasing power of money.

The relationship between inflation and NPLs could be positive (Khamraj and Pasha, 2009; Fofack, 2005) or negative (Nkusu, 2011). Higher inflation enhances the ability of borrowers to repay the loan by diminishing the real value of debt. The rise in inflation can increase the ability of debtor to repay the loan by diminishing the real income of borrowers if wages remain sticky. The effect of

inflation can be encouraging or discouraging, dependent on the relative effect on real incomes and real value of debt.

3.3.3 Discount Rate

Percentage at which SBP offers repo option to banks, serving as the lender of last resort. Positive relation exists between interest rates in the economy and NPLs. Increase in interest rates decreases the loan payment capacity of borrower resulting in increasing number of bad loans (Nkusu, 2011). According to Hoque and Hossain (2011), interest rate policy play an important role in determining the trend of NPLs. According to them interest rates are highly correlated with NPLs.

3.3.4 Exchange Rate USD/PKR

It is the value of one currency (USD) in terms of another currency (PKR). Increase in real effective exchange rate will accelerate the NPLs. Appreciation in exchange rate can decrease the loan payment capacity of export-oriented firms and increase the loan payment capacity of firms who borrow in foreign currency (Fofack, 2005).

3.3.5 Non-Performing Loans

NPLs are advances whose markup/interest or principal is over due by 90 days or more from due date.

3.3.6 Regression

It is the relation between an independent variable (e.g. real GDP Growth) with dependent variable (e.g. Non-Performing Loans).

Chapter IV – Analysis

The study uses Multi-variable Regression to derive analysis of the selected variables. The snapshot of the test conducted via SPSS and the data collected from various sources are mentioned below.

Correlations

Correlations

		Non Performing Loans	Discount Rate	Inflation	Real GDP	Exchange Rate
Non Performing Loans	Pearson Correlation	1	.486**	.098	-.590**	.956**
	Sig. (2-tailed)		.001	.547	.000	.000
	N	40	40	40	40	40
Discount Rate	Pearson Correlation	.486**	1	.761**	-.734**	.485**
	Sig. (2-tailed)	.001		.000	.000	.002
	N	40	40	40	40	40
Inflation	Pearson Correlation	.098	.761**	1	-.568**	.186
	Sig. (2-tailed)	.547	.000		.000	.252
	N	40	40	40	40	40
Real GDP	Pearson Correlation	-.590**	-.734**	-.568**	1	-.659**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	40	40	40	40	40
Exchange Rate	Pearson Correlation	.956**	.485**	.186	-.659**	1
	Sig. (2-tailed)	.000	.002	.252	.000	
	N	40	40	40	40	40

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4.1: Correlation

The dependent variable is Non-performing loans. Whereas there are 4 independent variables i.e. discount rate, consumer price index, real GDP growth and exchange rate. The correlation between the chosen dependent and independent variables for the study is 0.971. This indicates high correlation between the variables collectively. The sign of correlation is +ve. This indicates that the 4 variables collectively affect the non-performing loans to a very high extent as represented by the value of correlation.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.971[a]	.943	.937	45.37511

a. Predictors: (Constant), Exchange Rate, Consumer Price Index, Real Gdp Growth, Discount Rate

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1201808.458	4	300452.115	145.928	.000[a]
	Residual	72061.517	35	2058.900		
	Total	1273869.975	39			

a. Predictors: (Constant), Exchange Rate, Consumer Price Index, Real Gdp Growth, Discount Rate

b. Dependent Variable: Non performing Loans in Billion

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-611.943	90.194		-6.785	.000
	Discount Rate	23.230	6.187	.291	3.755	.001
	Consumer Price Index	-9.499	2.660	-.240	-3.571	.001
	Real Gdp Growth	7.142	5.320	.095	1.342	.188
	Exchange Rate	10.576	.666	.922	15.887	.000

a. Dependent Variable: Non performing Loans in Billion

Table 4.2: Model Summary, ANOVA, and Coefficients

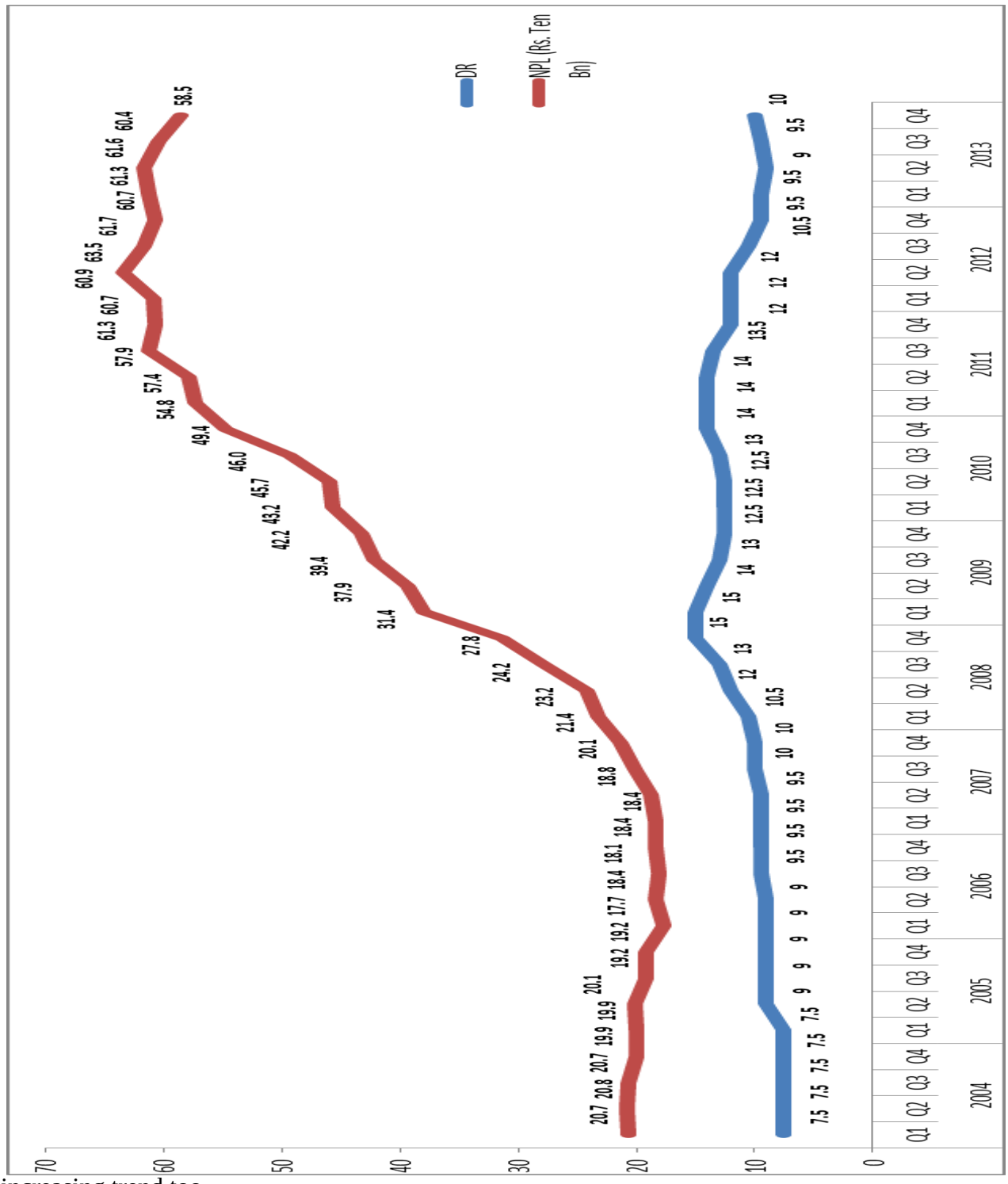
The data is further validated by the significance that the 4 variables collectively affect the non-performing loans to a very high extent as represented by the value of correlation. The data is further validated by the significance level of 0.0000001which translates into almost 100% surety that similar results are accurate and would occur consistently.

In order to dig deep into the individual effects on non-performing loans, the relative impact is gauged.

4.1 Discount Rate

Figure 4.3: Discount Rate

In the past decade, we have observed a significant change in discount rates. The rates moved from 7.5% to 15% from 2004 to 2009. As the discount rates doubled in 5 years, the NPLs showed an



increasing trend too.

Discount rate has a positive correlation with NPLs with coefficient of 0.486. The result is noteworthy with significance level of 0.000001. This upshot is according to principals of economics in general and the Pakistani economy in specific. The discount rate serves as the benchmark rate for

the economy. Increase or decrease in the discount rate results in a similar directional flow of KIBOR. As most of the loans are of variable nature, direct affect is transferred on the loan liability. Increase in KIBOR results in increase in lending rates as most loans are tied with KIBOR. This results in increase in the interest liability of various corporations and discourages them to pay off the liabilities on time. Opposite would hold true in case of decrease in discount rate, which would decrease the interest liability of the borrower. The beta coefficient is 0.291, which represents that the change in the discount rate can have impact on non-performing loans. The results are accurate enough to drive conclusion as the significance level is of 0.000001.

In December 2008, NPLs increased by Rs.37 billion and reached to Rs.290 billion in just three months. At that time the banks said it was due to the failure of consumer financing and the policy of high interest rates, which might also escalate the problem further in the future. During the same year, due to higher inflationary pressure and higher return on deposits, the banks' expenses rose sharply resulting into decline of profits, thus minimizing their ability to bear the additional heavy load of NPLs. The banks said under the circumstances the 15 per cent interest rate will further add to the total loan default figures of the banks and the real impact would be felt next year. Banking personnel and analysts at that time warned that the continued tight monetary policy with rising interest rate could be counterproductive for the economy. Higher lending rates already attach high risk with the credits but the government is now bound to increase interest rate instead of reducing it.

It is observed from the data that NPLs have surged by 150 percent, from Rs.208 billion in 2008 to Rs.517 in 2011. Textile sector is the prime borrower in Pakistan. Commenting on a report of SBP, Mohsen Aziz, Chairman All Pakistan Textile Mills Association (APTMA), explained the reasons for such an abnormal surge. He said higher interest rates were the major reason of an increasing trend in NPLs. The other fold of NPLs was the sever energy crisis in the country which increased the cost of doing business. Due to these reasons, the textile industry was not performing, which resulted in abnormal increase in NPLs. Although the interest rate decreased from 15% in H1Fy09 to 12.5% in H1Fy10 but was significantly insufficient for the textile and other manufacturing sectors as the increased cost of raw materials were also the additional burden on the industries while other sectors were struggling for their survival in the most unfavorable atmosphere prevailing in the country.

Agriculture sector was also affected by the interest rates. Year on Year (YoY) basis, the sector witnessed a 14% growth in NPLs by the end of Q3CY11. Interest rates, floods in the country, and unstable law and order situations were the major reasons for the rise in NPLs and default in

payments. ZTBL is the leading lender of agriculture sector, which reported a 20% increase in its NPL in Fy11.

From Q2CY12 onwards, interest rates showed a declining trend, which enabled commercial banks to receive interest and principal payments on time. Rates decreased by 350 bps between Q2CY12 - Q4CY13 and average NPLs were Rs.600 billion. During the same period NPLs reached all-time high of Rs.653 billion on the back of high interest rate and stagnant economic activities in the country. All types of banks including national banks, private banks, specialized banks, and foreign banks contributed in the growth of NPLs. This surge was mainly due to floods that devastated the agriculture sector twice, in 2010 and then in 2012, rupee depreciation and high cost of raw material. High interest rate followed by tight monetary policy increased the cost of doing business. Inflationary pressure, volatile law and order situation, and sever energy crisis were responsible for the highest NPLs in Pakistan.

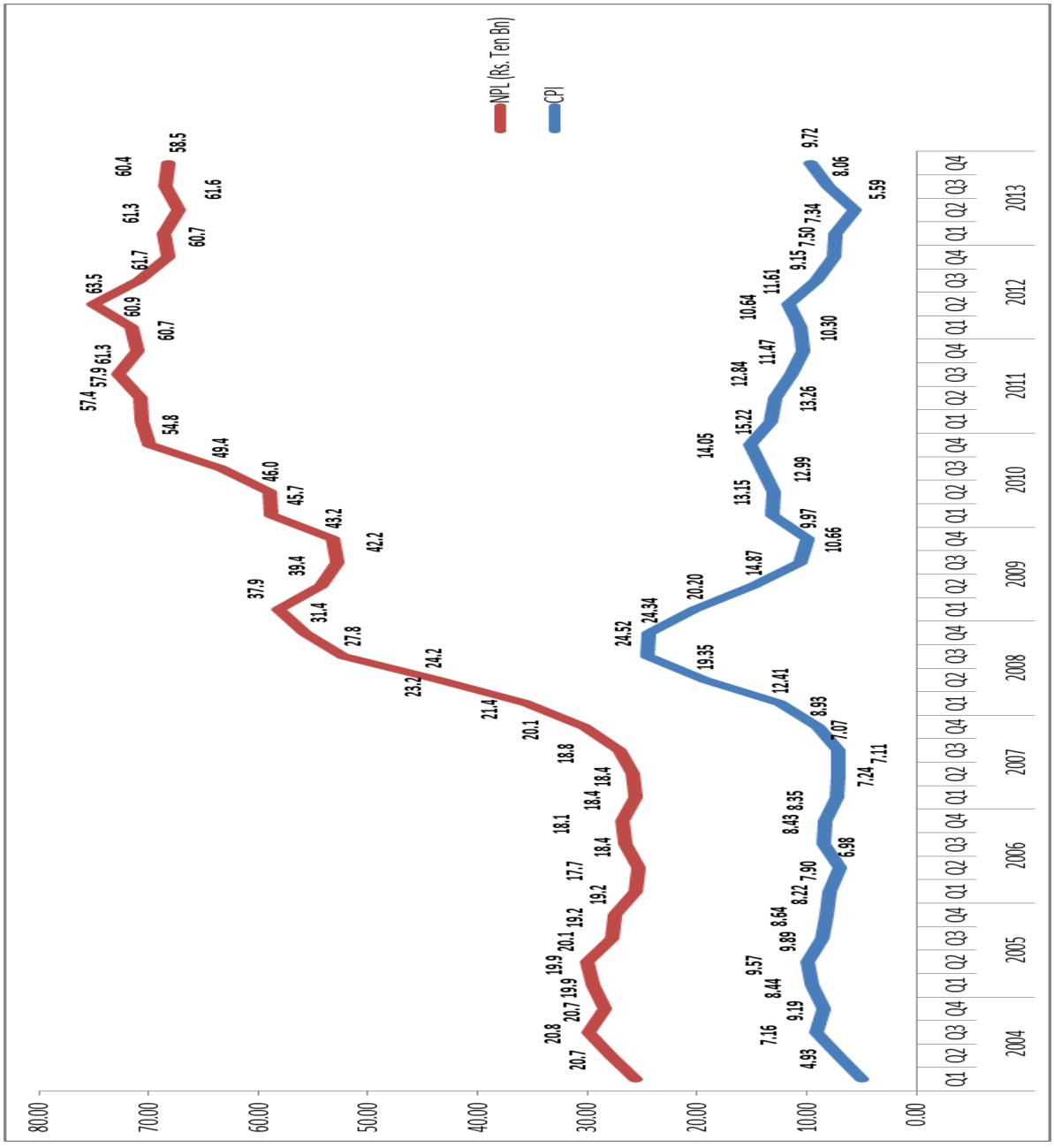
In the then-next monetary policy, SBP curtailed the discount rate by 1.5 per cent that showed a decline of 3% QoQ. Decreased interest rate in Q3CY13 showed a similar impact when NPLs of the banking sector of Pakistan shrank by Rs.11 billion as compared to Q2CY13. The SBP cut the interest rate by 50 basis points in June 2013, which was reflected in NPLs of September 2013.

Therefore, analysis of interest rate and NPLs clearly reflect the theoretical aspect that NPLs tend to reduce whenever the discount rates are decreased by the SBP as banks make advances on floating interest rate. As the interest rate changes, the markup of commercial banks also varies. Corporations and consumers become willing to make interest payments and principal on time.

4.2 Discount rate and Consumer Price Index

Figure 4.4: CPI

The Consumer Price Index is positively co-related with NPLs but the result was insignificant with a significance level of 0.547. The reason behind the trend is that increase in CPI decreases the real income in the economy. In such a scenario, the borrower is in a disadvantageous position relatively. The increase in inflation results lesser money left to pay off the liabilities. The liquidity crisis on part of the borrower decreases the ability to fulfill payment commitments. Pakistan has experienced negative interest rates in the past. Such a scenario provides an ideal opportunity for the borrowers to



pay off their obligations resulting in lower non-performing loans. But such a scenario is difficult to prevail now due to IMF's stance that interest rates shouldn't be negative in the Pakistani economy if Pakistan wants to receive IMF's support.

Furthermore, an increase in CPI causes NPLs to increase because the decrease in purchasing power of the currency raises the discount rate, which in turn raises the interbank offering rate for different tenors. It then results in an increase in the payments due by borrowers to the banks that result in higher NPLs. The beta coefficient of CPI is of -0.240.

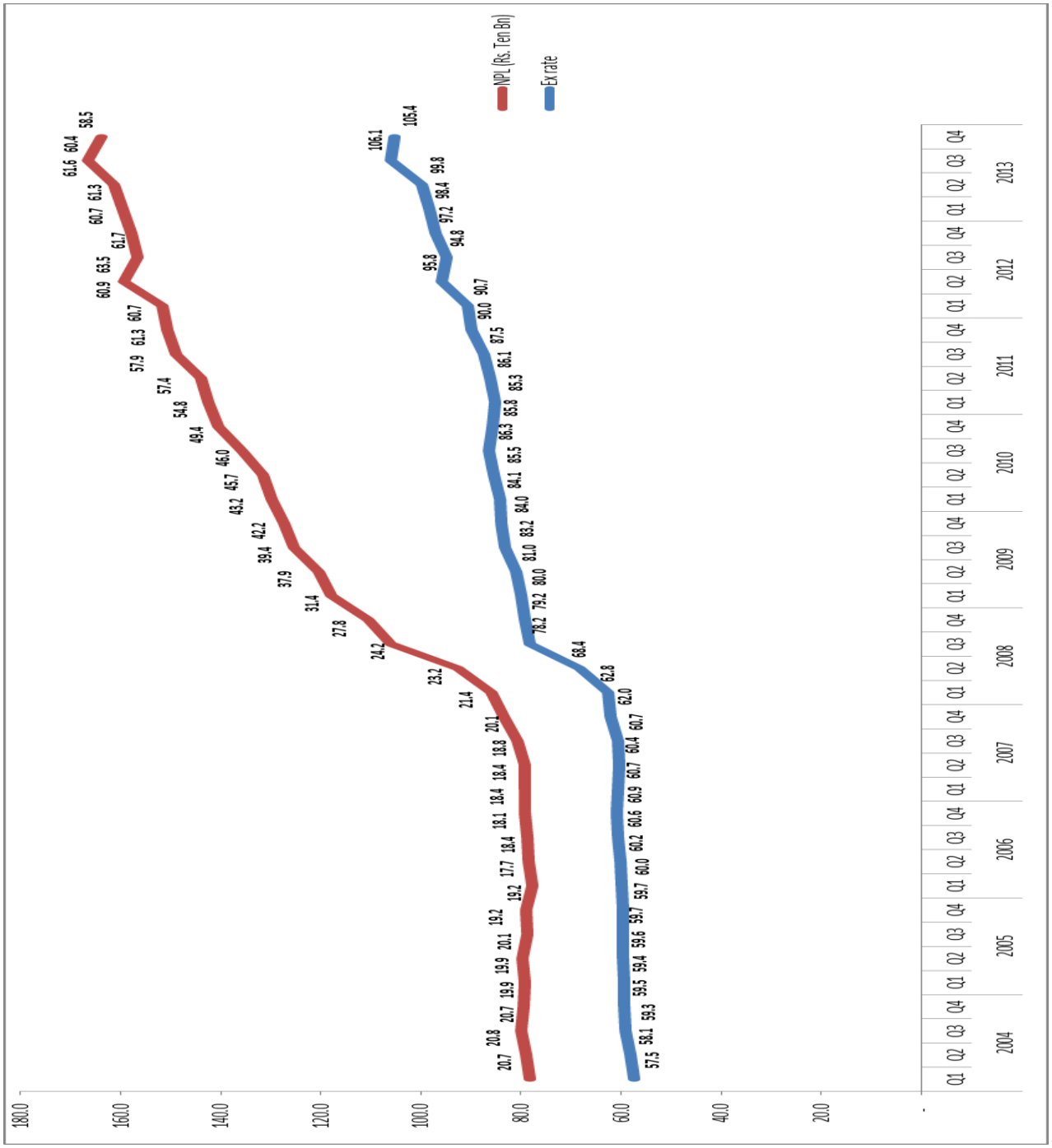
This is a theoretical explanation of the relation, which we found between CPI and NPLs. However in Pakistan, State Bank of Pakistan used the discount rate for two purposes: control inflation and Balance of Payment. Therefore I cannot study the relationship between NPLs and CPI in isolation. Discount rate needs to be considered while studying the effect of CPI on NPLs.

SBP increases the discount rates to control the increasing rate of inflation. Increasing discount rate leads to higher NPLs because the cost of borrowing becomes expensive and borrower finds it difficult to make repayments of his loans. Therefore the data and the empirical evidence show that when the inflation increases, ultimately NPLs also increase.

4.3 Exchange Rate:

Figure 4.5: Exchange Rate

As the graph suggests, Exchange rate has moved from Rs. 60 per $1 to Rs. 100 per $1, NPLs have also shoot up from Rs. 205 billion to Rs. 550 billion in 6 years. That shows the strong positive



relation between Exchange rate and NPLs.

Exchange rate is most strongly co-related with non-performing loans. The co-efficient of correlation was 0.956 with a significance level of 0.0000001. Exchange rate has the highest effect on non-performing loans according to my study represented by the beta coefficient of 0.922. The

relationship is positive which means that both exchange rate and non-performing loans move in the same direction. This can be substantiated by analyzing import-oriented firms. Depreciation of rupee would result in expensive imports. This would lead to increase in cost paid for import volumes. Increase in import cost leads to lesser liquidity availability with the firms. The constraint on liquidity decreases the ability to pay off liabilities resulting in increase in non-performing loans. Pakistan being a net importing country, it highly depends on imports to fulfill its requirements and depreciation of currency affects its NPLs. Another component, which plays its part, is the foreign loans. Depreciation of currency makes it difficult for firms to pay off its foreign debts as the amount increases in real terms. The significance of the result is very high i.e. 0.000001 and the relation can be implemented.

Higher beta of exchange rate is due to the tradeoff between imports and exports. A decline in rupee will result in expensive imports, which creates pressure on importer to finance letter of credits but at the same time the depreciation in Pak rupee is beneficial for exporters. Since Pakistan is a net importing country, the depreciation in home currency has strong adverse impacts on NPLs. Once the deficit decreases, the coefficient might shift towards the opposite side.

The data of the last decade indicates that while the Rupee depreciated from Rs.55 in Q1CY04 to Rs.105 in Q4CY13, trend of NPLs have also shown growth from around Rs.208 billion to around Rs.586 billion during the same period.

In the last six months of 2013, Pak rupee lost its value by 8% against the US dollar which was not favored by the manufacturing sectors like cement industry. When Pak rupee depreciates, imports become expensive and importers have to pay extra cost. In 2008 alone, when Oil prices shot up to $147 per barrel, Pakistan's oil import bill increased by 45% on Year on Year basis. The high cost of oil in international market increases the cost of production and leaves little or no margin for the companies. Rupee devaluation has great impact on the profitability and performance of those sectors like cement, chemicals and autos because they depend heavily on imports. The costly imports were reflected in the NPLs of 2009 to 2011 when NPLs surged from Rs.250 billion to Rs.550 billion.

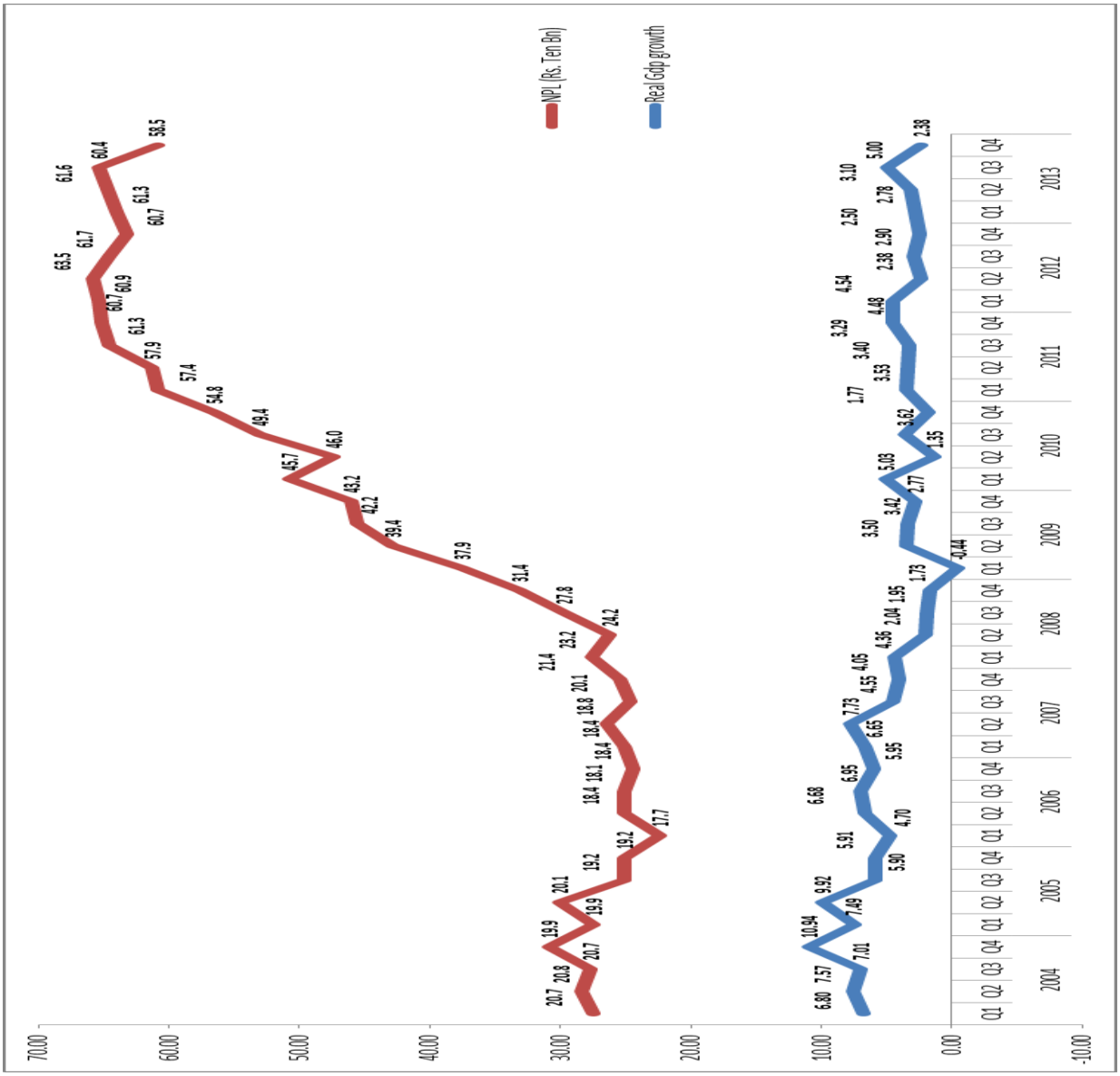
However, exports get a boost with depreciating Pak rupee environment but the effect is subdued to higher effect on imports. Textile sector is the biggest export sector fetching around 13 billion US dollars in the country in FY13, which is 53% of Pakistan's total exports. The recent appreciation of Rs.10 against US Dollar has affected the textile sector adversely. Exporters did not appreciate the gain of rupee against US dollar. While talking to a researcher at an Islamic bank, I came to know

that a textile exporter has lost Rs.250 million because of recent appreciation in the Rupee. Since the firm is well established, it managed to absorb the effects of rupee appreciation. However, small and new firm may not able to bear the loss of exchange rate appreciation and file a bankruptcy or unable to make payments to banks.

Hence, from the trend I can conclude that a rise in conversion rate will affect NPLs positively in the case of Pakistan.

4.4 Real GDP

Figure 4.6: Real GDP



Real GDP growth has a negative relation with non-performing loans. The study needs further insights. The reason for this is that the increase in real GDP leads to increase in real income in the society. The increase in real income leads to increase in the ability of the borrower to pay off his liabilities on time. Further GDP is an amalgamation of other variables. The other variables affect non-performing loans differently. GDP being affected by the other variables results in a negative effect on non-performing loans. The relation is positive being represented by the coefficient of -0.590. The relation also turns out to be significant with a significance level of 0.0000001. The significance is in particular due to the relationship for different quarters affecting real income. According to the annual report issued by State Bank of Pakistan for the fiscal year 2012, during the last four years, Banks advancing to small and medium enterprises (SMEs) has dropped substantially as financial institutions consider the SME segment a very uncertain one due to its high exposure to

economic shocks. The same report mentioned that the SME sector contributes 30% towards the nation's GDP, engaging more than 78% of non-farming labor force and accounts for 35% of the value added merchandises in the industrial sector. The report expressed, "Regardless of its robust potential, SME sector is most susceptible to economic upsets and, thus, is reflected as a more dangerous segment by banks while tackling on it". Throughout the year 2011-2012, banks credit to SMEs dropped from Rs.248 billion to Rs.292.5 billion, registering a 15% decline. During that year the aggregate number of SME borrowers diminished from 200,000 to 150,000. The decrease in SME lending can be credited to unfriendly economic conditions, growing cost of doing business, and power shortages. Developing NPLs of the SMEs have also prompted a more risk-averse attitude by banks. The NPLs, in 2012, mounted at Rs.96.51 billion or 39% of aggregate SME loans. Additionally, the loopholes in the regulation also serve as a foremost obstacle in the financial recoveries. Institutions Recovery Ordinance 2001 obliges that recovery suits initiated by banking industry ought to be settled by the law courts within 90 days of the filing the case, the SBP's monetary assessment issued a year ago discovered that more than 14,000 suits of banks have been undecided in the court for the last decade. This speed of trials aids the defaulters, as they have to compensate only the 'price of funds' rather than the standard interest rate for the period past the expiry of credit.

Consequently, as mentioned in the SBP report, a total of Rs. 633 billion was lying in NPLs on June 13, 2013. This sum could be used productively for the economy. For that reason, the loopholes in the financial framework must be plugged to stimulate the recovery of stuck-up finances. In 2008, the State Bank of Pakistan directed every bank to employ their spare resources in agro-business and prolong agriculture loans on relaxed terms as its investigation on banks' mark-up rates and costing mechanism for agro-advances found that banks were making considerably higher from agro-portfolio as contrasted to overall yields on other portfolio. Thus banks attained a 44% of the yearly target for the farming loans in the first six months of FY14. Banks realized 44 per cent of their yearly combined suggestive target of Rs. 360 bn notwithstanding multitude of challenges, for example, high NPLs, recovery phase, inadequate bank's infrastructure, macroeconomic situations and overall law and order situation. Outstanding portfolio of farming finances surged by Rs. 40.8 bn or 17.5 per cent i.e. from Rs. 236 bn to Rs. 278 bn at end December 2013 as compared to same period a year ago. The rise is mainly because of SBP's initiative of giving annual outstanding suggestive targets for banks. However, this justifies the negative relationship between Real GDP and NPLs. Agriculture sector is one of them, which is suffering from the effects of Global warming as the subsequent devastating floods destroy the crops and leave the farmers unable to repay their

loans. Another sector to analyze is “House finance”. In 2012, Development Finance, an assessment papers issued by the SBP explained that till 2008, the housing financing sector was demonstrating the encouraging trend, however, after 2008, the sector showed a falling trend and NPLs piled up significantly, requiring the banks to take a cautious approach. SBP also revealed that the purchasing power of debtors shrunk as a result of inflated prices of property, labor and building material. The Central Bank declared the statistics by saying that approximately 58.2 per cent of entire borrowers of housing investments have been categorized as non-performing. In the “Financial stability analysis of 2008-2009”, it was claimed that heightened fears on credit risk appeared in the first quarter of CY08, and became persistent as year proceeded as non-performing loans rose 69 per cent in CY08 to Rs. 360 billion by the year end, the highest surge in a single year since CY97.

The analysis draws the forecast that a strong correlation exists between the variables in this multivariate regression model. This makes us conclude that the changes in NPLs are predominantly indexed and dependent on the chosen variables.

Chapter V – Critical Debate

The study would be limited to the publicly available data of real GDP growth and interest rates on the website of State Bank of Pakistan (SBP) and Pakistan Bureau of Statistics. However, PBS also relies on some other source but we will be limited to its publications, as it does not reveal the source most of the time.

Lagging impact is also uncontrollable for us at this stage. In real scenarios, the effects of any variable on economic factors take some time to reflect. Therefore, at this stage we do not have enough command on statistics to cover the lagging impact.

Access to customer and banks information, except financial information available in financial statements, is not possible. The qualitative study would be limited to the industry personnel’s perceptions.

This study would serve as a tool to gauge the macroeconomic determinants of NPLs. It would also provide insight into other determinants of NPLs. The study would help predict to a certain extent the future position non-performing loans by reviewing future economic indicator forecasts. The study on non-performing loans from the period of 2004 to 2013 will give benefits to following:

The data we have used is for 10 years. According to one of the interviewee, the economic cycle takes 20 years to complete and bring about its full effects. Further research on a larger time horizon would result in further accuracy.

Due to limited knowledge about statistical procedures, I used multi-variable regression. Use of multiple regression models would result in more dependable results.

This study only covers the effect of macroeconomic factors on non-performing loans. Researches need to be conducted relative to the micro level factors. According to our interviewees, there are several other reasons besides macro level factors, which affect non-performing loans. The factors related to the textile factor plays important role as 30%-40% of non-performing loans are of textile companies. The incorporation of power shortage and power rate hike would also provide a better scenario. Bank specific determinants such as advances to deposit ratio, investment to deposit ratio, loans as percentage of assets should be used to determine their effect on non-performing loans.

Chapter VI –

Conclusion

The relationship of all variables has been in accordance with my expectations. Real GDP growth was negatively co-related with non-performing loans. Discount rate was positively co-related with non-performing loans. Similarly, CPI was also positively co-related with non-performing loans.

The beta value of exchange rate was the strongest. In our view it was bound to be a strong relation due to its effect on several other variables. Pakistan being a net importer has significant effect of exchange rate on its macro variables. Depreciation of exchange rate will increase the pressure on import bill. Oil constitutes about 1/3rd of the total imports. Depreciation of the currency increases the cost of imported crude oil. Oil is the main component for electricity production. Pakistan is highly reliant on furnace oil to produce electricity. According to the National Electric Power & Regulatory Authority (NEPRA), Pakistan produces about 50% of its electricity from residual furnace oil. The depreciation of currency leads to imported inflation primarily through imported crude oil. Further the cause of imported inflation is the imported raw materials, which are required

by several sectors. Even agriculture sector is heavily dependent upon imported urea in the current scenario of gas shortage for fertilizer sector. Cement sector, which provides the impetus to the sluggish economy by bringing the multiplier effect in the economy depends on imported coal for production. Such heavy dependence on imports leads to inflation during a depreciating Pakistan rupee scenario.

The increase in inflation, besides affecting the non-performing loans, also triggers another macroeconomic variable being considered in my thesis. The State Bank of Pakistan (SBP) has used the discount rate consistently to counter increase in inflation. The increase in CPI is controlled by increasing the discount rate. This further affects the non-performing loans to increase. As the discount rate is being considered after every 2 months in the monetary policy meeting, the rate has remained volatile which further dents the loans position due to uncertainty in the economy.

The discount rate is also used to control another variable by the SBP, which is the reserve position. The depreciation of the currency dents the foreign reserves of the economy. The SBP increases the discount rate to control the outflow to foreign shores.

The monetary policy decision affects the GDP growth. Increase in discount rate results in slow down of the economic activities. But the total impact on the economy cannot be gauged as the government also uses fiscal policy to affect the economic growth.

Summarizing the view, the study told that exchange rate affects CPI, which results in discount rate decisions. Real GDP growth rate is ultimately affected due to the changes in the above-mentioned variables. The strength of the exchange rate seems justified as it affects a wide range of economic variables used in our thesis.

The significance level of multi-variable regression model is 0.000000001. The model must be useful in predicting the trend of NPLs keeping in mind the progress of the macro-economic variables.

Recommendations

While talking to banking personnel, I came to know that the undocumented economy of Pakistan has a significant impact on NPLs. Sometimes it becomes very difficult for banks to track the borrower. Since it is an uncontrollable factor, banks are required to take cautious approach while lending loans to individuals and SMEs.

Although we have a bankruptcy law but it has not been updated for decades. Bankruptcy cases should be dealt in a specialized court where cases can be pursued in a timely manner. State Bank of Pakistan has to play its role for making this possible. Mr. Muhammad Asim, CFA, Chief Investment Officer at MCB – Arif Habib Savings and Investments Ltd. shared an insight with me on the failure of imposing the bankruptcy law in Pakistan. He explained that how people have used the financial crisis in the world to cover their willful bankruptcies. He further commented that people borrow money and after some time they transfer it to other countries and file a bankruptcy. Therefore, SBP needs to ensure the transparency in filing a bankruptcy to control the NPLs.

Mr. Faizan Ahmed, CFA, FRM, Treasury Manager at HBL pointed that besides macro-economic elements, there are several other factors, which do have an impact on NPLs. He reminded that bank specific determinants do play an important part in determining the non-performing loans. According to him, one should pay special attention to a bank's Advances to Deposits (ADR) ratio as higher advances might lead to higher non-performing loans. The overall sentiments prevailing in the banking sector also matters and might serve as a tool to gauge sector's view on non-performing loans. Further explaining, he informed about the recent situation where the overall investments to deposits ratio (IDR) has reached 59%. This shows that the banks have taken a cautious approach and expect non-performing loans to emerge if they start advancing the money again. He stressed upon the strength of bank's recovery department as a key determinant besides bank's ability to analyze different clients. He said that several banks have taken major hits on their balance sheets because of incompetent credit analysis of risky clients.

Mr. Aitazaz Farooqui, Senior Analyst at MCB – Arif Habib Savings and Investments Ltd. seconded the recommendation provided by other analysts. He told that 30%-40% of the non-performing loans belong to the textile sector. If the textile sector performs well, significant decline in non-performing loans can be witnessed. He informed me that the textile sector performed well due to the increase in demand from China. China was not using its spinning mills due to high price of cotton yarn being demanded by farmers. The textile products were exported to China. In such a scenario, non-performing loans were under control despite worsening position on macro front. The demand from China is decreasing as China is now using its spinning mills but the effect on non-performing loans might be subdued due to grant of GSP plus status to Pakistan.

The energy crisis is also a factor to look out for according to him. Although the effects would be reflected in GDP growth but the energy crisis has affected significant industries more than others. In 2012, when the government announced to stop electricity supply to all textile units of Punjab, the

sector was expecting a $1 billion loss in textile exports. If these warnings continue from the government, it will become very difficult to control the trickle down impact in the economy. The same problem had affected the Faisalabad region significantly where sizeable numbers of textile mills are located. This leads to increases in non-performing loans even though the full effect might not be reflected in GDP numbers.

Another avenue to consider is the politically motivated loans, which seem to be high in terms of percentage. Bank of Punjab has non-performing loans equaling 10% of the total non-performing loans of the top 15 banks. Most of these loans were given with ill intentions and would have resulted in same fate, no matter the direction of the macro economic variables. Similarly he told that National Bank of Pakistan holds 18% of the total non-performing loans of the top 15 banks. These variables also need to be considered to view a clearer picture of the non-performing loans.

My studies evaluate the effect of four macro-economic variables during 2004-2013 on quarterly basis. However, for future studies, we recommend that macro-economic variables along with bank specific factors should be taken into consideration.

We also suggest for future studies that to study the impact of variable on NPL, at least data of twenty-five years should be taken into account, as different economic cycles will come into observation.

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Appendices

Consensus Course of Action

Research Question / Objective: To find the relationship between 5 macroeconomic variables to NPLs through interviews			
Type of Research: Predominantly qualitative			
Investigative Question	**Variables (s) Required**	**Details in which data measured**	**Check included in the Questionnaire**
To what extent does increase in interest rate leave an	Interest rate	Open Ended Question	

impact on NPLs? (behavior)			
How exchange rate fluctuations affect NPLs? (Behavior)	Exchange rate effect	Open Ended Question	
What is the relation between NPLs and inflation?	Inflationary impact	Open Ended Question	
Does deterioration in inflation bring NPLs down? (Behavior)	Inflation	Open Ended Question	
How increase in GDP affect the NPLs? (Behavior)	GDP growth	Open ended questions	
What policies govt. can make to worsen the NPLs? (opinion)		Open ended questions	
Which accounts are affected by NPLs? (Behavior)		Open ended questions	