

IMPACT OF FINANCIAL INTERMEDIATION ON MICRO AND MACRO LEVEL GROWTH IN AN EMERGING ECONOMY: AN ANALYTICAL STUDY FROM PAKISTAN

By

Aijaz Mustafa Hashmi

A research thesis submitted to the Department of Management & Social Sciences, Capital University of Science & Technology, Islamabad in partial fulfillment of the requirements for the degree of

**DOCTOR OF PHILOSOPHY IN MANAGEMENT SCIENCES
(FINANCE)**



**DEPARTMENT OF MANAGEMENT & SOCIAL SCIENCES
CAPITAL UNIVERSITY OF SCIENCE & TECHNOLOGY
ISLAMABAD**

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By

**Aijaz Mustafa Hashmi
(PM 101006)**

**Dr. Claudiu Herteliu
Bucharest Academy of Economic Studies Bucharest, Romania
(Foreign Evaluator)**

**Dr. Victor Dragota
Bucharest Academy of Economic Studies Bucharest, Romania
(Foreign Evaluator)**

**Dr. Arshad Hassan
(Thesis Supervisor)**

**Dr. Sajid Bashir
(Head, Department of Management & Social Sciences, CUST)**

**Dr. Arshad Hassan
(Dean, Faculty of Management & Social Sciences, CUST)**

**DEPARTMENT OF MANAGEMENT & SOCIAL SCIENCES
CAPITAL UNIVERSITY OF SCIENCE & TECHNOLOGY
ISLAMABAD**

March 2017



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ISLAMABAD**

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The Examining Committee unanimously agrees to award PhD degree in the mentioned field.

Student Name : Mr. Aijaz Mustafa Hashmi

Examination Committee :

(a) External Examiner 1: Dr. Qaiser Ali Malik
Associate Professor
Foundation University, Rawalpindi

(b) External Examiner 2: Dr. Iftikhar Hussain Adil
Assistant Professor
S3H, NUST, Islamabad

(c) Internal Examiner : Dr. Saira Ahmad
Assistant Professor
CUST, Islamabad

Supervisor Name : Dr. Arshad Hassan
Associate Professor
CUST, Islamabad

Name of HoD : Dr. Sajid Bashir
Associate Professor
CUST, Islamabad

Name of Dean : Dr. Arshad Hassan
Associate Professor
CUST, Islamabad

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(Mr. Aijaz Mustafa Hashmi)

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Dated: 08 March, 2017

(Mr. Aijaz Mustafa Hashmi)
Registration No. PM101006

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Forwarded for necessary action.

Dr. Arshad Hassan
(Thesis Supervisor)

Dedication

I dedicate my work to my late parents.

Where I stand today, is due to their sacrifices and prayers.

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Table of Contents

Author's Declaration.....	iv
Plagiarism Undertaking.....	v
Certificate of Changes Incorporated.....	vi
Certificate of Approval.....	vii
Dedication.....	viii
Acknowledgement.....	ix
Table of Contents.....	x
List of Tables.....	xiii
List of Equations.....	xiv
List of Figures.....	xv
Abstract.....	1
Chapter 01.....	3
Introduction.....	3
1.1 The Financial System.....	3
1.2 The Savings and Investment Mechanism.....	3
1.3 The Intermediated Flow of Funds – Financial Intermediation.....	4
1.4 Growth Facilitated by Financial System.....	5
1.5 Qualitative Asset Transformation facilitated by Financial Intermediaries.....	6
1.6 Research Questions.....	7
1.7 Research Objectives.....	8
1.8 Significance of Research.....	9
1.9 Scope of the study.....	11
1.10 Scheme of the Study.....	12
Chapter 02.....	13
Review of Literature.....	13
2.1 Growth and Financial Intermediation.....	13
2.2 Functions of Financial Intermediation.....	28
2.2.1 Reduction of Transaction Costs.....	30
2.2.2 Liquidity Provision.....	32
2.2.3 Information Provision.....	35
2.2.4 Delegated Monitoring.....	39
2.3 Financial Intermediation and Industrial Growth.....	45
2.4 Financial Intermediation and Economic Growth.....	47
Chapter 03.....	68
Data Description and Methodology.....	68
3.1 Firm Level Data Description.....	68
3.2 Firm Level Variables and Equations for Testing.....	69
3.2.1 Transaction Cost Function.....	70

3.2.2	Liquidity Assurance Function.....	70
3.2.3	Delegated Monitoring Function.....	71
3.2.4	Information Sharing Function.....	71
3.2.5	Firm Growth	72
3.3	Statistical and Econometric Tests for Firm Level with their Significance.....	75
3.4	Industry Level Data Description and Statistical Equations for Testing	75
3.5	Macro Economic Level Data Description, Variables and Statistical Equations for Testing Macro Level Variables	77
Chapter 04.....		81
Results and Discussions		81
4.1	Descriptive Statistics	81
4.2	Correlation Matrix.....	83
4.3	Firm Level Analysis - Company Wise Panel Data Results.....	87
4.3.1	Company Wise Panel - Common Effect Model.....	87
4.3.2	Company Wise Panel - Fixed Effect Testing	89
4.3.3	Company Wise Panel - Hausman Test.....	91
4.4	Industry Level Analysis - Industry Wise Panel Data Results	91
4.4.1	Industry Wise Panel - Fixed Effect Testing	91
4.4.2	Industry Wise Panel - Hausman Test	93
4.5	Difference of Impact of Financial Intermediation Functions across different Industries	93
4.5.1	Reference Industry: Auto Parts Industry.....	95
4.5.2	Reference Industry: Chemicals Industry	96
4.5.3	Reference Industry: Construction Industry.....	97
4.5.4	Reference Industry: Electricity Industry	98
4.5.5	Reference Industry: Electronics Industry	102
4.5.6	Reference Industry: Engineering Industry	103
4.5.7	Reference Industry: Fixed Line Communications Industry	104
4.5.8	Reference Industry: Industrial Metals & Mining Industry.....	105
4.5.9	Reference Industry: Industrial Transportation Industry.....	108
4.5.10	Reference Industry: Paper & Board Industry	109
4.5.11	Reference Industry: Tobacco Industry	110
4.5.12	Reference Industry: Pharmaceuticals Industry	110
4.5.13	Reference Industry: Oil & Gas Industry.....	113
4.5.14	Reference Industry: Food Industry	114
4.5.15	Reference Industry: Textile Industry	115
4.6	Moderating Effect of Financial Intermediation Functions across Different Industries using Interactive Terms.....	117
4.6.1	Reference Industry: Auto Parts Industry.....	118
4.6.2	Reference Industry: Chemicals Industry	119
4.6.3	Reference Industry: Construction Industry.....	120
4.6.4	Reference Industry: Electricity Industry	121
4.6.5	Reference Industry: Electronics Industry	125
4.6.6	Reference Industry: Engineering Industry	125

4.6.7	Reference Industry: Fixed Line Communications Industry	127
4.6.8	Reference Industry: Industrial Metals & Mining Industry.....	127
4.6.9	Reference Industry: Industrial Transportation Industry.....	131
4.6.10	Reference Industry: Paper & Board Industry	131
4.6.11	Reference Industry: Tobacco Industry	132
4.6.12	Reference Industry: Pharmaceuticals Industry	132
4.6.13	Reference Industry: Oil & Gas Industry.....	135
4.6.14	Reference Industry: Food Industry.....	135
4.6.15	Reference Industry: Textile Industry	137
4.7	Macro Economic Level Analysis - Discussion of Results	139
4.7.1	Autoregressive Distribution Lag (ARDL) Approach.....	141
4.7.2	CUSUM and CUSUMSQ Plots.....	145
4.7.3	Pair-wise Granger Causality Tests.....	146
Chapter 05.....		148
Summary, Conclusion and Recommendations.....		148
5.1	Summary for Firm Level Study	148
5.2	Summary for Industry Level Study	149
5.3	Summary for Macroeconomic Level Study	154
5.4	Directions for Future Research.....	155
5.5	Limitations of the Study.....	155
References.....		156
Appendix 1		167

List of Tables

Table 2.1	A Tabulated Comparison of Current and Modified Financial Intermediation Theory	27
Table 2.2	Tabulated Evidence of the Relevant Literature.....	55
Table 3.1	Classification of Industries.....	69
Table 3.2	Tabulated Description of Variables	72
Table 4.1	Descriptive Statistics.....	81
Table 4.2	Correlations	83
Table 4.3	Common Effect Model	87
Table 4.4	Fixed Effect Model	89
Table 4.5	Redundant Fixed Effect Testing	90
Table 4.6	Hausman Test.....	91
Table 4.7	Fixed Effect Model	91
Table 4.8	Redundant Fixed Effect Testing	93
Table 4.9	Hausman Test.....	93
Table 4.10	Industry Wise Effect with Reference Dummy	94
Table 4.11	Industry Wise Effect with Reference Dummy	101
Table 4.12	Industry Wise Effect with Reference Dummy	107
Table 4.13	Industry Wise Effect with Reference Dummy	112
Table 4.14	Moderating Effect of Financial Intermediation Functions with Industrial Interactive Terms	117
Table 4.15	Moderating Effect of Financial Intermediation Functions with Industrial Interactive Terms	124
Table 4.16	Moderating Effect of Financial Intermediation Functions with Industrial Interactive Terms	130
Table 4.17	Moderating Effect of Financial Intermediation Functions with Industrial Interactive Terms	134
Table 4.18	Unit Root Analysis.....	140
Table 4.19	Diagnostic Tests.....	141
Table 4.20	Autoregressive Distributed Lag Estimates.....	142
Table 4.21	Estimated Long Run Coefficient using ARDL Approach	143
Table 4.22	Error Correction Representation for the Selected ARDL Model	144
Table 4.23	Pairwise Granger Causality Tests	146
Table 5.1	Summary of Industry Wise Effect with Reference Dummy	150
Table 5.2	Summary of the Moderating Effect of Financial Intermediation Functions with Industrial Interactive Terms.....	152

List of Equations

Equation 2.1	30
Equation 2.2	30
Equation 2.3	30
Equation 3.1	70
Equation 3.2	73
Equation 3.3	76
Equation 3.4	76
Equation 3.5	78
Equation 3.6	79
Equation 3.7	80
Equation 4.1	144

List of Figures

Figure 2.1	Data Flow Diagram for Financing Options Available to Deficit Units	17
Figure 4.1	The Cumulative Sum of Squares.....	145
Figure 4.2	Cumulative Sum of Squares of Recursive Residuals.....	146

Abstract

The study has been performed to analyze the influence of financial intermediation on micro and macro growth in emerging economy of Pakistan. This study testifies the impact the financial intermediation functions on growth at three levels: Firm Level, Industry Level and the Macro Economic Level. Literature identifies a variety of functions performed by financial intermediaries beyond savings and pooling of funds. These functions include transaction cost function, liquidity assurance function, delegated monitoring function and information sharing function. Several proxies have been used to quantify the utilization of the financial intermediation functions while the growth has been measured as of firm size. In the first tier, a total of 130 Pakistani companies were investigated for the impact of functions of financial intermediation for the period 2004-2013 using Panel Data Analysis. Common Effect Model with Fixed Effects has been tested at the firm level panel data. According to the Fixed Effect Model in firm level panel, the proxies for the variable of Transaction Cost, Liquidity Assurance and Information Sharing Coalitions are found to have a significant impact on firm level growth while the proxies for the variable of Delegated Monitoring function have an insignificant impact on firm growth in the Pakistani sample. This is a reflection that the Delegated Monitoring function does not statistically influence firm growth. This can be attributed to inefficient corporate governance mechanism. The other variables show a statistically significant impact which reflects that firms utilizing these functions has been positively benefitted. The results reflect that firms with higher level of financial inclusion i.e. access to financial services have a positive influence on firm growth.

In the second tier, the firms were grouped into 15 industries and industry wise panel data analysis is conducted to study the impact of financial intermediation functions on growth across the different industries. A fixed effect is found across the industries which show that the impact of financial intermediation functions is different for each industry. According to the Fixed Effect Model in industry wise panel, the proxies for the variable of Transaction Cost, Delegated Monitoring and Information Sharing Coalitions are found to have a significant impact on industry level growth. Further, each industry is then taken as a reference industry and the impact of financial intermediation is observed in each industry being similar or different from other industries. The industry wise panel data is done for exploring the

moderating effect of the industry-variable interactive term to see whether a particular function moderates the impact of financial intermediation functions in a specific industry or not. All the functions are examined with relevance to the reference industry to empirically test the moderating impact of financial intermediation in each industry. The results report that several proxies of the financial intermediation functions moderate the impact on growth in different industries.

In the third tier, macroeconomic data is examined to appraise the influence of financial intermediation on macro level economic growth. In Pakistan, the results reflect that there exists significant co-integration between financial intermediation and economic growth. However, there is no difference in the impact of financial liberalization on economic growth before and after the financial liberalization. The evidence concludes that the linkage between financial intermediation and economic growth is present as a significant interaction in the emerging economy of Pakistan.

Chapter 01

Introduction

1.1 The Financial System

The financial system mobilizes and allocates savings, supports trade, helps in diversification and hedging of risk and allows easier access to investment opportunities. It affects accumulation of capital and results in growth. Levine (1997) state that the need for a financial system that is competitive and efficient is mandatory requirement for economic development and growth.

The functions performed by institutions operating in the financial system and the tools presented by them offer prospects to the participants to transform results of shared information and company costs in their advantage. The efficient financial systems assist in reduction of transaction related costs influencing savings choices, integrating technological modernization and steadying expansion rates of economy. From the assessable operationalized evidence in literature on the affirmative special effects of financial systems on growth, it may be concluded that financial segment successfully contributes to the economy.

1.2 The Savings and Investment Mechanism

Economics identifies presence of two major economic groups in the economy. The first has an income level in excess of their consumption portion resulting in generation of savings. They are referred to as the surplus unit or savers. The second group is identified with consumption levels in excess of their income and is always looking forward to raise financing to fulfill their funding needs. These are referred to as the deficit unit or borrowers. Savers are usually the individual households who save a portion of their income while the deficit unit

represents the corporate sector that always is in need of cheap financing options. According to the “Fisher’s Savings and Investment Theory (1930)” savings of the households is translated into investments to earn them an acceptable return on their investments. The higher return increases the willingness of surplus units to furnish funds for investment providing the deficit units financing they need. But this return earned by the investors is the cost of funds paid by the deficit unit. And higher the cost paid on the funds obtained, the lesser is the willingness to borrow funds.

Funds always flow from the surplus unit to the deficit unit. This flow of funds from one economic group i.e. Surplus unit to the other economic group i.e. deficit unit may take two possible routes: (1) The Direct Funds Flow Mechanism or (2) The Indirect Funds Flow Mechanism. The adversities in the direct flow of funds mechanism make way for the utilization of the indirect funds flow mechanism. From the perspective of investors, the riskier direct investment with higher asymmetry of information keeps them at bay from using the direct route. Thus, they prefer making indirect investments utilizing the services of the financial intermediaries. From the view point of the borrowers, it is very rare to have an individual saver having the potential to cater the financing needs of the borrower. Therefore, the company has to interact with multiple individual financiers to fulfill their financing needs. This requires the management of each financier individually and catering his expectations resulting in high costs for the borrower. Thus, the borrowing unit seeks an intermediary to provide the requisite funds. It is not a matter of chance that these financial intermediaries not only provide them with requisite funds but also offer a wide variety of functions to facilitate firm growth.

1.3 The Intermediated Flow of Funds – Financial Intermediation

The complexities observed in the direct financing mechanism, both by the savers and borrowers make way for the “Intermediated Financing”. This brings in discussion the “Theory of Financial Intermediation” presented by multiple researchers with different dimensions. It includes Leland and Pyle (1977), Allen and Santomero (1997), Scholtens

(2003), Gwilym (2008) and Mathews and Thomson (2008). The modified version of financial intermediation theory analyzes the functions that are performed during the process of financial intermediation. It takes into consideration the mechanism through which the intermediation process puts influence on growth at the firm (micro) and overall macroeconomic level. The financial intermediation theory highlights the roles played by the financial intermediaries. Majority of the studies conducted in literature highlight the positive role played by the financial intermediaries in achieving a durable economic growth.

Additional aspects of financial intermediation theory exist in works of Akerlof (1970), along with the research from Spence (1973) and the findings of Rothschild and Stiglitz (1976) provide theoretical background on the presence of imperfections in the financial markets making way for the evolution of financial intermediated financing in the economy. Researchers have been able to explore multiple dimensions of the intermediation theory including the discussion in context of asymmetry of information as well as the agency theory conducted by Leland and Pyle (1977).

The establishment and significant increase in utility of intermediaries include these reasons: high transaction related costs, unavailability of suffice information within due time frame and the mechanism of making regulations. Informational asymmetry is amongst the most commonly used factor in literature regarding the area of financial intermediation. The problem of adverse choices ultimately results in the creation of moral hazard. The informational inequality results in the less than perfect markets. Thus, the presence of financial intermediaries facilitates improved operational aspects for firms.

1.4 Growth Facilitated by Financial System

Academicians have been making discussions on the connection connecting the expansion of the financial sector and real sector eventually resulting towards growth and prosperity in economy. Research done by Bagehot (1873), the theoretical framework of Schumpeter

(1911), research findings of Hicks (1969) and empirical findings of Miller (1986) provided momentous stage for the debate of finance as a structural block for micro and macro level growth. While research participations of Robinson (1952) emphasizes that enterprises lead the way to finance. Levine (1997; 2003) has added significantly towards the empirical literature on the topic under discussion. Vazakidis (2009) discusses the role of effective mobilization of capital for industrial growth. Rengin and Kara (2011) study the long as well as the short duration consequence of financial intermediation on growth. Literature thus provides significant theoretical insight on the role of financial intermediaries in the financial system facilitating both individual investors as well as the borrowing units.

1.5 Qualitative Asset Transformation facilitated by Financial Intermediaries

The financial intermediaries facilitate the Qualitative Asset Transformation. It can be observed in five main dimensions:

1. *Liquidity Intermediation* – converting assets into liquidated funds to meet liquidity requirements of savers and borrowers.
2. *Maturity Intermediation* – providing desired maturity instruments i.e. short and long maturities to surplus and deficit units.
3. *Denomination Intermediation* – offering products according to the denomination requested for by both savers and the borrowers.
4. *Diversification Intermediation* – developing a diversified portfolio of investments and reducing exposure to financial risks.
5. *Information Intermediation* – removing informational asymmetries providing informational advantage avoiding problems of adverse selection and moral hazard.

The research takes into consideration the role of financial intermediaries over and above the pooling and savings function for efficient resource allocation and identify the presence of financial intermediaries as vehicles for driving growth. For the firm level, the specified functions are identified in literature. These are also the major reasons for the dominance of

intermediated financing over direct financing. These attributed functions performed by intermediaries are identified below in light of different theories of financial intermediation.

1. Transaction Cost Reduction (Benston and Smith 1976)
2. Liquidity Assurance (Diamond and Dybvig 1983)
3. Information Sharing Coalitions (Leland and Pyle 1977)
4. Delegated Monitoring (Diamond 1984, 1996)

Chauvet and Jacolin (2015) also emphasize on firm's access to financial services for growth. This study takes into account the above functions and tries to measure the quantitative effect of firm level intermediated financing on growth. For the industry level, the study takes into account above mentioned intermediated functions as well as a relative comparison of multiple industries to observe the industrial growth. At the third level the macro economic variables utilized in literature have been considered to study the impact of macroeconomic intermediation variables on macro level growth. Thus, the study is structured as a three tier study i.e. firm level, industry level and economic level in Pakistan.

1.6 Research Questions

The general question raised in this study is to discuss: What is the impact of financial intermediation on growth? Literature identifies that this impact of financial intermediation has been frequently observed with regard to macroeconomic growth but this study takes into discussion a three tier model exploring the impact of financial intermediation on firm level growth, industry level growth and lastly the economic level growth. The variables used to quantify the financial intermediation have been observed in light of theoretical justification and contribute to academic literature. The specific research questions of the study are:

1. What is the impact of financial intermediation functions on firm level growth?
 - a. What is the impact of transaction cost function on firm level growth?
 - b. How Liquidity Assurance Function influences firm growth?
 - c. Does Information Sharing Coalition Function contribute in growth of firms?
 - d. What is the impact of Delegated Monitoring on firm growth?

2. What is the impact of financial intermediation functions on industry level growth?
 - a. What is the impact of financial intermediation functions on each industry?
 - b. Do financial intermediation functions have a similar impact on growth in all the industries?
 - c. What is the relative moderating impact of specified financial intermediation functions on growth in each industry?

3. What is the impact of macroeconomic financial intermediation on macroeconomic level growth?
 - a. Does financial intermediation impact economic growth in Pakistani economy?
 - b. How financial liberalization influences economic growth?

These research questions are directed to achieve the below mentioned objectives which are in direct alignment with the research questions.

1.7 Research Objectives

The essence of the present study is to find out the influence of functions of financial intermediation on growth at three tiers; firm level, industry level and economic level. The explicit objectives of the study are as follows:

1. To identify the influence of financial intermediary functions on firm level growth.
 - a. To study the impact of Transaction Cost Function on firm level growth.
 - b. To provide insight about the impact of Liquidity Assurance Function on growth of firms.
 - c. To explore the influence of Information Sharing Coalition Function on firm growth.
 - d. To investigate the impact of Delegated Monitoring on firm level growth.

2. To explore the role of financial intermediation functions on industry level growth.
 - a. To provide insight about the impact of financial intermediation functions in each industry.

- b. To examine whether the financial intermediation functions have a similar impact on growth in all the industries.
 - c. To study the relative moderating impact of specified financial intermediation functions on growth in each industry.
3. To study the influence of macroeconomic financial intermediation on macroeconomic level growth.
 - a. To examine the impact of financial intermediation variables on economic growth in Pakistani economy.
 - b. To explore the role of financial liberalization in the economic growth.

1.8 Significance of Research

The study provides significant contribution to the already existing literature by extending empirical evidence from Pakistan simultaneously across three levels i.e. firm level, industry level and economic level. The study provides contribution to the body of knowledge by exploring financial intermediation functions and their impact on growth at Firm Level, Industry Level and Macro Economic Level. A well-functioning financial system is an essential need of an economy. The corporate access to financial services enables convenient access for fulfillment of financing needs. This research attempts to study the impact of the financial intermediation functions through the identification of financial intermediation variables which influence growth. The empirical work in this domain is generally focused on macroeconomic perspective i.e impact of financial intermediation on economic growth. The role of financial intermediation in explaining industry and firm level growth is generally less addressed. The study examines various the financial intermediation services at the firm and the industry level and utilizes the data extracted from the notes of annual reports. The data is then used to analyze for impact of intermediated financing on firm and industrial growth.

This is the one of the pioneering study undertaken to investigate the financial intermediation services and its impact on firm and industrial level growth in Pakistan. Moreover, this is the

first time data regarding intermediated financing at the micro level has been examined to observe the impact of intermediated services on firm and industrial growth. The study also signifies the relative use of financial intermediation functions across the different industries identified. It provides a comparison across different industries and reports the impact of financial intermediation on growth in the different industries. Thus, it offers information to the corporate sector regarding use of diversified set of financial products to be adopted for improved levels of growth.

The study also takes into consideration the moderating effect of financial intermediation in each industry resulting in growth. The study explores moderating influence of each function on growth in each industry thus identifying specific functions which comprehend growth.

The study holds significance for the policy regulators to enforce the significant financial intermediary functions to increase the probability of improved performance. The results of the study provide a quantitative justification that utilization of intermediation functions is significant for growth at the firm and industry level.

Seven and Yetkiner (2016) recently studied the role of financial development for economic level growth in high, middle as well as low income countries. For the low and middle income economies, the results reflected that the development of the banking sector has a positive impact on economic growth, while, this impact is negative for high income economies. They concluded that a well performing financial system promotes economic growth in developing countries more than in developed countries. Pakistan being a developing country needs to conduct studies providing empirical support for the well-functioning of the financial system to help the economy grow. This study provides a significant contribution in this regard providing empirical and theoretical literature form the Pakistani Economy.

At the third level, the study takes into discussion the macroeconomic impact of intermediated financing in the economy. This enables to identify the impact of macroeconomic policy. The study also provides guidelines to policy makers that in Pakistani context, the financially intermediated economic growth exists only as an econometrically significant relationship. This is evident from the prevailing poor economic conditions in the country. This is also a reflection of poor policy implementation by previous regulatory authorities and this area needs appropriate attention as it gravely affects the real on ground economic growth. The study also provides an insight into the fact that the financial liberalization of the 1990's, was unable to infuse significant change. Thus, the regulators need to assure new regulations and their incorporation as is signified in the study.

1.9 Scope of the study

The study has a broad scope since it covers three tiers; firm, industry and the economic level. The study takes into account the utilization of intermediation functions at the firm level analyzing 10 year data of each company. The time period for the study is 2004-2013 for firm and industry level while for the macro level analysis, the time period for the study is 1960-2013. The study makes an analysis of 130 companies across 15 industries. However, only specific financial intermediation variables have been selected in the study. Data has been extracted and utilized from company's published annual reports. For the macroeconomic data regarding intermediated financing, it has been extracted from the World Bank's Data Bank.

The firm specific utilization of intermediation functions across the identified 130 companies has been observed. The industrial panels are created on the basis of State Bank of Pakistan's Balance Sheet Analysis (SBP-BSA) for detailed quantification and analysis. For the economic level analysis of intermediated economic growth in the Pakistani economy, large time series data is used. The study covers the three tiers of analysis and provides policy guidelines for rapid economic growth at micro and the macro level.

1.10 Scheme of the Study

The dissertation structure is as follows: Firstly the introduction to thesis is discussed in Chapter 1. Next, the related literature is explored and relevant theories supporting the theoretical framework have been discussed in Chapter 2. The next section discusses the methodology and description of and definitions of the study variables in Chapter 3. Chapter 4 discusses the results and findings of three tiers. Lastly, Chapter 5 concludes the thesis by summarizing the study findings and by conferring the implications of the results for firm, industry and economy.

Chapter 02

Review of Literature

2.1 Growth and Financial Intermediation

Firms strive to grow at a rapid pace to raise their market worth and benefit its shareholders. Ho (2010) states that the emergence of enlightened shareholders approaches to corporate governance focus on companies to magnify the benefits beyond the shareholders' interests. This results in spillover effects beyond firm level growth to benefitting the economy at large. Operational efficiencies are thus the focus of firms to optimize performance. This results in higher productivity levels, generation of higher profits and sustained financial benefits for shareholders. Better performing firms are able to capture greater market share and grow. The growth in firm size is attributed to availability of resources. This includes financial as well as non-financial assistance. Managers try to generate funds utilizing sources which optimize firm profitability.

Berger et al. (2010) stated that banks perform a vital part in allocation of resources by transformation of relatively little liquid deposits into big illiquid loans providing benefits to surplus and the deficit economic groups. During this process, bank provides a wide range of services to facilitate the savers and borrowers. After the 70s era, the deregulation of the financial system and the technological advancement and globalization has transformed the banking sector. Berger et al. (2010) further state that the mergers and acquisitions have resulted in enormous banks and have offered diversified financial service achieving economies of scale. De Young et al. (2004) identified that the smaller banks deliver highly differentiated products and high end consumer banking services.

Historically, intermediaries have an essential role in accelerating economic growth. This seems to be realistic in almost all developed countries, but rising economies are in a very early on stage. Here too, the expansion of financial intermediaries seems to drive the expansion of financial markets on their own (McKinnon, 1973). In brief, banks have stayed alive ever since very old times, making an attraction to household for deposits and loans to

operators who are in requirement of funds. Didier, Levine and Schmukler (2014) studied the firms which issue securities in equity and debt markets and its impact on growth.

The knowledge of the functions played by the financial intermediaries in the financial dissection has different models in the areas known to the theory of intermediation. These theories of financial intermediation models have built-in resource allocation based on perfect markets. The theory suggests that the functions of transaction cost reduction performed by the intermediaries and unequal information resulting in asymmetry are significant in perceptive of the brokerage of intermediaries.

The exploration of financial theory for growth at the firm level identifies existence of two schools of thought regarding the generation of funds using banking services; the irrelevance and the relevance approach. According to the irrelevance approach, the sources of funds do not matter and it is an irrelevant aspect towards the valuation of the firm, its cost of funds and market valuation. The Net Operating Income Approach (NOI Approach) and the Modigliani-Miller Approach (MM Approach) are the proponents of the irrelevance school of thought. In contrast to the irrelevance school of thought, there exists the relevance approach which states that the way a company chooses to generate funds is a relevant decision as this decision influences the valuation of the firm, its cost of funds and the market value. The Pecking Order Hypothesis (POH) conceived by Myers and Majluf (1984) predicts that information asymmetry between managers and investors create a preference ranking over financing sources. Beginning with internal funds, followed by debt, and then equity, firms work their way up the pecking order to finance investment in an effort to minimize adverse selection costs and improve operational profitability.

To finance itself the companies select direct financing mechanism or indirect financing mechanism or a hybrid of these. This is among the decisions of prime importance to determine the sources of funds. Company management identifies the level of funds sufficient enough to finance its short and long term needs and then plans for how to generate those funds. These funds generated, serve for making expansion, starting new production lines, escalating the production capacity ultimately enabling the firms to generate more sales and enabling firms to grow rapidly. Chauvet and Jacolin (2015) conducted a study to focus on the

impact of financial inclusion and development on the performance of firms in countries with low financial development. They find that while financial development does not influence firm performance on average, the financial inclusion i.e. access to financial services at the firm level has a positive influence on firms growth. The present study also draws its influence from it.

Managers explore possible options to generate funds in search to identifying an optimum level of financial structure ultimately resulting in benefitting the firm growth. To generate the necessary funds, firms have the option to utilize the direct financing mechanism or the indirect financing mechanism. As discussed in the introduction, the benefits of intermediated financing provide it a preference over the direct financing module. The presence of financial intermediaries in our financial system facilitates the process and makes available the funds required by the corporate sector.

The deficit unit in the economy has multiple options to utilize when it feels the need to generate funds. This segment classifies the options available to the deficit unit for fulfillment of its financing needs. Figure 2.1 classifies the options available to the deficit unit in two broad categories; Internal Financing Option and the External Financing Option. In the External Financing Option, the deficit unit has further two options to select from; direct financing or the in-direct financing i.e. intermediated financing option. The intermediated financing option classifies the financial intermediaries in three broad categories: Depository financial institutions, non-depository financial institutions and the federal government financial institutions.

The depository financial institutions are financial intermediaries where there are frequent deposits and frequent withdrawals. The depository financial institutions are categorized further in two broad categories; Banking Depository Institutions and the Thrift Institutions. The thrift institutions are specialized financial institutions having a specified scope such as the House Building Finance Corporation (HBFC) or Zarei Taraqati (Agricultural Development Bank Limited (ZTBL)). The banking depository institutions are also classified into two further categories; Conventional Banking Institutions and the Islamic Banking Institutions.

The non-depository financial intermediaries are classified into three categories: Insurance Companies, Pension & Retirement Funds and the Mutual Funds. The insurance companies receive premiums, create a pool and invest with the deficit unit. These may be further classified into life insurance companies who invest a major portion of the accumulated premiums in long term investments and the non-life insurance companies who invest a major portion of their premiums in short term investments.

The pension and retirement funds offer pension and retirement services and plan for your retirement and post retirement by collecting frequent installment or lump sum payments before retirement and offering frequent payments past your retirement for a happy post retirement life.

The funds accumulated by these companies are utilized for making investments with the deficit units and earning returns. The next classification identifies the mutual funds who gather funds from the individual investors planning to make investments. The mutual funds combine investments from multiple individual savers and combine them to invest as a mutual fund. The investment units are identified and investments made under the specialized institutional setup of the mutual fund company yielding returns for the surplus unit.

The federal government financial institutions are governmental institutions working to provide government the financing needed by offering the surplus units risk free returns. These investments have a hypothetically zero risk and are the safest of the investments. They offer a lower rate as compared to the market but are secured by the government backing.

These institutions usually contribute to finance the governmental projects and offer an investments opportunity to savers.

The following flow diagram classifies the financing options available to borrowing units.

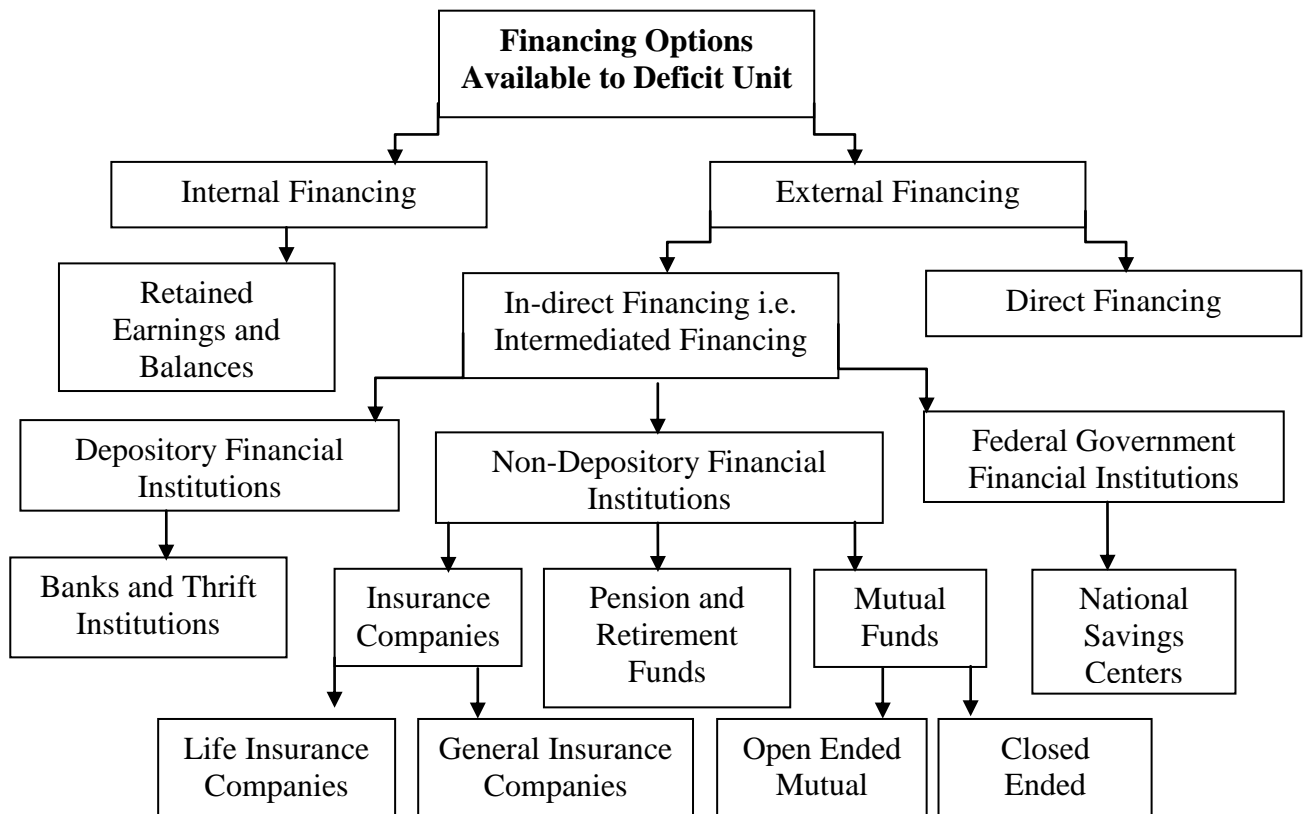


Figure 2.1 Data Flow Diagram for Financing Options Available to Deficit Units

A major change has occurred in the same in the significance of intermediaries. The share of assets held by banks and insurance companies has reduced and while mutual funds and pension funds have increased to a great extent. Emerging kind of intermediary such as non-bank financial firms have emerged which raise money entirely by issuing securities and not at all by taking deposits. In a nut shell, the significance of traditional intermediaries has decreased despite the expansion in the sector.

Possibly as a counter, but concerted, conventional institutions including banks and insurance providing companies have altered activities. Deposits taking and loans making banks established that the probabilities for securitizing debt intended that it was not required for all the loans they created to show them on their balance sheet .The insurance firms

comprehended that their actuarial utility constituted a slight fraction of their asset administration capacities they had and their products and services were expanded and instituted in new ways. The conventional theories which are based on transaction costs reductions and asymmetric information can be utilized for explaining a few alterations in the quantity of financial movement, with the comparative significance of a few institutions and the changes in the remaining.

Amongst the most important query of the theory of financial intermediation is that (1) what is the purpose of existence of financial intermediaries? And (2) what exactly are the utility of financial intermediaries that make them smart apart from the sustenance of financial markets?

Saunders and Cornett (2006) identify the areas of specialness of financial intermediaries. They advocate the unique services such as achieving economies of scale and reducing information costs, reducing liquidity risks, provision of transaction cost services, maturity intermediation, transmission of monetary supply, credit allocation, payment services and denomination intermediation. Being proponents of the relevance approach to capital structure and the unique benefits of the existence of financial intermediaries, decisions regarding the source of funds hence carries significant importance.

The intermediaries present in our financial system are equipped with attractive products at offer to facilitate the borrowing firms. The utilization of products offered by the financial intermediaries benefit the firms in growth. The public markets existence cannot be possible without these intermediaries. Conventional banking offered to corporate sector is being pressurized from this step towards open markets, but emerges with specified answers for corporate sector finance. Combination of individual level savings, policies of insurance, financing as well as investment related products and promoting these via a wide range of circulation guides on a huge scale innovates the retail banking. Financial intermediaries heterogenize the systems by designing out segments for specified product market amalgamations and in specified geographical locations where they have strength. The market

is being made to differ and market imperfections are built as novel products for the purpose of marketing contain exclusive caged information. The smoothing of market imperfections in the public markets trading goes side by side with this procedure of establishing up marketplace asymmetry in niche markets. Schumpeter (1911) described it as process of prolific demolition.

The explanation to the newly originated marketplace symmetry is held in the origination of significance for buyer in the innovative, specified products. Creation of value for the buyer is the whole reason of intermediation activity. Transaction costs incurred by the company to be paid to the intermediary are justified by value creation. The qualitative asset transformation concludes in the value that is being built by the financial intermediary. The crux of this qualitative and descriptive asset change is risk alteration. By altering risk –through the on balance sheet items or off balance by the way of derivative liabilities –assets at offer by saving units following their individual level risk inclinations into assets serviceable by entrepreneurial investors is changed in new form by the intermediary.

Intermediary activity emerges where supply and demand of capital cannot be satisfied according to the risk preferences of market parties in the public market. Adverse selection and credit allotment can affect the process of the intermediation when information flows stifle or become capricious (corporate disclosure fraud) or when peculiar shocks (e.g. affecting sovereign risk) occur. The temporary market imperfections are led by them which have no relation with the standard mediation procedure. The significance creating procedure of banks emerges with the passage of time. It swings from risk incorporation all the way through generation of financing to management of risk and incorporation via capital market procedures.

In addition, the specified operations of individual banks also develop the value chain. Perpendicular integration of these operational functions is not so important now. The delivery and manufacturing of services offered by banks are differed via in-and-outsourcing contracts.

“Contract banking” structures given by Llewellyn (1999) offer for the reworking to the kinetics of creation of value in the industry of financial services. Due to the riskiness of asset transformation and due to the reason that monetary financial assets lubricate the economy, the intermediating financial institutions are positioned below the governers of regulatory institutions. This facilitates the savers who submit their savings with intermediaries or construct possibility claims with them, and is favorable to the system collectively (systemic risk).

The theory of intermediated financing distinguishes between the functions of financial intermediation classifying them as function resulting in the reduction of costs related to transactions; functions for liquidity risk reduction; function for the provision of significant information; and function of the renegotiation of debt. Each function addresses the concerns of the households. The primary function in the above mentioned addresses the issue of access of financial markets for saving units and the borrowing units. The succeeding two functions address the banking services offered to savers that cannot be attained from the financial markets. The last function is concerned with the services a bank offers to its borrowers rather than to depositors in terms of delegated control.

A critical role is played by the financial intermediaries in financial markets due to the functions performed by the intermediaries. The fee involved in channeling funds among comparatively unaware depositors to users that are information-demanding is reduced providing added assurance for efficient allotment of resources. Intermediaries have expertise in gathering information, appraising projects, observing borrowing units performance and risk distribution. In spite of this proficiency, the subsistence of financial intermediation institutions does not multiply the credit market results that would occur in a detailed information environment.

Agitation is caused by the subsistence of imperfect information and asymmetrically-held information in the financial market. Variations to the information layout and to variables

which might be utilized to overcome financial resistances would as a result change the nature and degree of financial imperfections. Banking institutions and other financial intermediaries are “out of the ordinary” as financing is provided to borrowing units on conditions that those borrowing units would not be able to obtain in absence of financial institutions. The existence of economies of scale in credit markets has caused obstacles for small firms in getting funding from non-bank sources and so is more depending on bank lending than are other firms. Adverse shocks to the information structure, or to these firms’ collateral or equity levels, or to banks’ ability to lend, may all impact on firms’ access to credit and hence to investment and output. The financial system is dominated by these intermediaries and is contributory towards micro and macro level growth.

The increment of the study to the existing body of knowledge is to propose that financial procedures should be investigated in terms of the “functional perspective” rather than a different “institutional perspective” should be evaluated. The functional perspective is that which is based on the functions and services offered by the financial system, whereas the institutional perspective is the one whose most important focus is on the tricks of on hand institutions involving banking institutions and insurance companies. The steadiness of the financial institutions over a large span of time is a cause behind the center of attention on the functional perspective than the institutional perspective. Institutions have been established and demolished, developed and altered, but the actual functional needs continue to be the same while packaged differently and delivered in clearly different ways.

This stability of functional needs has led Oldfield and Santomero (1997) to explain that financial services such as origination, distribution, servicing and funding are more stable than either the institutions that give services or the specific products they offer in order to satisfy customer requirements. By utilizing this particular method on the financial sector, the literature explains that its actions can be taken as a focus point of one or the other function which is performed by the financial system.

According to Megginson (1997) the financial systems can be classified into three categories on the basis of their characteristics: Capital Market Based, Financial Intermediary Based and the Industrial Group Based Financial System. The current research focuses on intermediated financing. The characteristics of the “Financial Intermediary Based Corporate Finance System” as stated by Megginson (1997) are as follows:

- Relatively few large, independent, publically traded companies. Many companies remain family owned or controlled.
- A small number of very strong commercial banks dominate corporate financing and also play key role in corporate governance. Banks and client companies have close, enduring financial ties and bankers frequently serve on company boards.
- Commercial banks have investment banking powers as well and serve as universal financiers for clients providing bank loan for working capital as well as long term financing. Other services including underwriting are also provided.
- Capital markets play a small role but having a growing intent in corporate finance with public equity being fairly rare in private companies. Bonds market is very small and illiquid and often reserved for governmental bond issues.
- Very little mandated information disclosure requirements and therefore little transparency in governance mechanism. Less reliance on formal regulations and more reliance on long term and informal business relationships.
- Far less reliance on professional managers and far less reliance on stack based compensation for employees.
- Relatively inactive market for corporate control with hostile takeovers being relatively rare. Often a very close relationship between lending institutions and the government.

The Financial Intermediary Based System is expected to possess the following strengths:

1. Intermediaries are natural corporate monitors and usually have an internal clout to discipline poorly performing management teams. European bankruptcy laws also tend to favor creditors over stakeholders and managers – effectively increasing corporate governance power of bank monitors.

2. Commercial banks enjoy natural comparative advantages in raising and allocating investment capital, compared to public capital markets. They are able to provide a full line of financial services for client firms.
3. Intermediaries are capable of building long term relationships with client firm management teams becoming corporate insiders. This allows direct, low cost transfer of information between banker and the client.
4. Intermediary based systems appear better to handle borrower financial distress than capital market based systems. The negotiating workout is much easier in a private, high information setting than in a public forum with large number of stakeholders.
5. Intermediaries seem able to find multiyear investment programs of their client firms more effectively than capital markets.

The above mentioned strengths of the intermediary based financial system make way for the empirical testing in the Pakistani scenario. In Pakistani scenario, majority of the businesses are family owned and the Pakistani financial system possesses the characteristics of the financial intermediary based system. Thus, the theory of financial intermediation buys more weight when discussing the Pakistani financial context. Allen and Santomero (1997) review the state of intermediation theory and attempt to reconcile it with the observed behavior of institutions in modern capital markets. They argue that current theory of financial intermediation too heavily focuses on the functions of financial institutions that are no longer crucial in mature financial systems. They suggest that the emphasis on the role of intermediaries as reducing the frictions of transaction costs and asymmetric information is too strong; while these factors may once have been central to the role of intermediaries, they are increasingly less relevant in developed economies. Pakistani economy however is a developing economy with need of financial intermediaries to accelerate growth. The study focuses on growth due to utilization of functions of financial intermediation.

The financial intermediation theory is attributed to the early works of Akerlof (1970), Benston (1976), Diamond (1983) and others. They propagate financial intermediation as amalgamation of institutions, tools and markets which are satisfying needs of diverse economic entities .In contemporary literature from around the globe, financial intermediation

is viewed as combination of financial institutions (banks, insurance companies, credit associations, pension funds etc.) which have been classified earlier in Figure 2.1.

The interpretation of financial intermediation given by Sharp, Alexander and Beily (1998) state that the financial intermediaries or financial institutes are organizations that are responsible to issue financial obligations and sell them for money as assets. Capital generated through this procedure is further used for buying financial assets of other companies".

Zaernjuk et al. (2014) explore the theory of Bank Based Financial Intermediation and its origin. They demonstrate that the theory of financial intermediation is a modification of the traditional theory that describes the functioning of banks through the prism of excellence, magnitude and chronological alteration of assets. The modification in the traditional theory is attributed to financial novelty and universalization of activities of intermediaries in post-industrial economies, diversification of banking activity and stronger competition in the fiscal sector of the financial system.

The academic theory of bank based financial intermediation during the 1970s bases on transaction and information approaches. The informational perspective of the theory of financial intermediation also establishes on the phenomenon of asymmetry of information as exemplified in terms of "information economy". Akerlof (1970) demonstrates the universality of information asymmetry phenomenon present in numerous markets.

The contribution by Scholtens and Wensveen (2000) discusses the review by Allen and Santomero (1997) of the theory of financial intermediation. They do not fully agree with their view that risk management is only of recent importance to the financial industry and with putting central the concept of participation costs. They suggest how the theory of financial intermediation might be developed further in order to understand present-day phenomena in the financial services sector.

The study conducted by Scholtens and Wensveen (2003) shows the connection in between the present theory of financial institutions intermediation and real practice in the world. The examination of the existing theory leads the way to formation of fundamentals of a novel conjecture of financial institutions intermediation. Contemporary financial intermediation theory is created on the view that transaction costs and informational asymmetries are decreased by the financial intermediaries. It is due to the expansion in technological world, revision of rules and regulations as well as intensification of financial markets. It is most likely to decrease the transaction related costs as well as information related inequalities also termed as asymmetries. The conventional financial institutions intermediation theory may conclude that conventional intermediation shall be obsolete. It is in contradiction with the practitioner's perspective of intermediation process as a value-generating financially viable process. The conventional view conflicts with the modified and rising economic importance of financial intermediaries.

The contributions from Diamond (1983) in the beginning of 1980s develop the notion of financial intermediation as delegate monitoring. He identified the activity of financial intermediary as agents of several investors and investors delegate to it expensive authorities on monitoring of credit contracts. This has several advantages for creditors for the reason that otherwise they had exhausted their efforts on monitoring and wasted limited resources. Thus, it is profitable for creditors to use an intermediary that can save their money spent on monitoring in comparison with direct financing.

The transaction perspective of financial intermediation is connected to study of the observable fact of transaction costs in economy and their influence on organization and conduct of economic and financial activity. The initiation of this in financial literature investigating the association between the functions of financial intermediation in economy and subsistence of transaction costs was given by Benston and Smith (1976). They describe the major reason of existence of financial intermediation as being market resistances in the form of information and transaction costs because of imperfection of financial market.

In addition the intermediaries provide savers with elevated liquidity for their investments providing them opportunity of present consumption while for the borrowers-with liquid assets in demanded quantity and for essential terms with lowest amount of transaction costs. In contemporary studies the hypothesis of financial intermediation is formed principally by two concepts (1) the concept of liquidity provision based on the model of Diamond-Dybvig (1983) and (2) the concept of risk management based on theory of Wharton School of Pennsylvania University (2012). The above arguments favor the banking services which dominantly facilitates the growth.

Academic literature can be explored regarding the functions of financial intermediaries providing theoretical basis for the discussion and development of the framework of research. The associated hypotheses of the economic position of financial institutions performing intermediation that stands on the optimal utilization of imperfect information were materialized earlier by Akerlof (1970). The works of Spence (1973) and that of Rothschild and Stiglitz (1976) also provide significant contribution in this regard.

The financial intermediaries exist for the reason that they are able to reduce information and business costs that occur from an informational unevenness (also termed as informational asymmetry) between borrowers and surplus unit. The efficient functioning of markets is supported by the intermediaries, and any factors that have an effect on the quantity of credit directed through financial intermediaries can have major effects.

The survival of financial intermediaries is explained by the two dimensions. The first emphasizes financial intermediation institutions as providers of liquidity while the subsequent focuses on intermediaries' ability to modify the risk related features of financial assets. In both the dimensions, the intermediaries help in reduction of charges of allotment of funds in between deficit as well as the surplus unit, which will lead to a more proficient allocation of resources.

When the intermediation activity is not backed by information anomalies and their eradication is not the commercial motive for financial intermediaries, the question arises which alternative could better convey the essence of the intermediation process. The value creation has risk and the risk management as its driving force. Both banking and insurance have absorption of risk as the main function. The risk reduction function connects a disparity in between the provision of savings and the demand for investments as savings unit has more risk reluctant attitude than genuine investors. A spread out collection of investment alternatives required to advocate the protection needed by savings unit and the policy holders is allowed by their extent so that the financial institutions can soak up risk on the range necessary by the market.

Financial intermediaries serve as dynamic correspondents, themselves contributing specified products that individual investors are not able to offer to savers, specifically the cover up for risk faced. The reputations are utilized by the financial institutions using the on and off-balance sheet items. A sensitive function within the modern economy is possessed by them.

Table 2.1 A Tabulated Comparison of Current and Modified Financial Intermediation Theory

(Stylized) Contemporary Theory	Modified Theory
<ul style="list-style-type: none"> • Static: Perfect Market Differentiation 	<ul style="list-style-type: none"> • Dynamic: Market Development
<ul style="list-style-type: none"> • Market Imperfections Development 	<ul style="list-style-type: none"> • Product Innovation & Market
<ul style="list-style-type: none"> • A mediator in between savers and investors, monitoring loan on behalf of deposit units 	<ul style="list-style-type: none"> • An entrepreneurial source of financial products and services
<ul style="list-style-type: none"> • Efficient allocation of savings 	<ul style="list-style-type: none"> • Asset Transformation in Qualitative Aspects: Transformation of Risk
<ul style="list-style-type: none"> • Transaction Costs 	<ul style="list-style-type: none"> • Value Creation
<ul style="list-style-type: none"> • Asymmetric Information 	<ul style="list-style-type: none"> • Customer Orientation, both to real investors and savers
<ul style="list-style-type: none"> • Adverse selection, moral hazard, credit rationing, auditing 	<ul style="list-style-type: none"> • Risk management; risk reward optimization
<ul style="list-style-type: none"> • Regulation as market imperfection 	<ul style="list-style-type: none"> • Regulation for institutional and systemic risk control
<ul style="list-style-type: none"> • Disintermediation 	<ul style="list-style-type: none"> • Dynamics of intermediation (new markets, new products, new agents)

With adaptations from Scholtens and Wensveen (2000)

Table 2.1 sums up the key features for a totally new understandability of the financial intermediation institutional processes and for a prospective route of the theory of intermediation. The table provides comparison with the critical notion of existing theory. The construction units of the modified theory of intermediation fundamentally are at variance from those of the accessible present theory. There is a disparity in approach; an entirely diverse perspective is taken to look at the same phenomenon. Auspiciously, it is to be illustrated that in approximately all of the innovative construction units of the theory of intermediation, widespread research on the notion indicates presence of gaps.

Banking being important to the current society is not essentially performed by conventional banks. Does the modified theory completely contrast to the historical one and have the concepts of the conventional theory become ineffective? At both the macroeconomic and at the microeconomic level the concepts related to the current theory of intermediation do stay appropriate for the analysis of intermediation. The focal object of the research of financial intermediary consists of the most favorable distribution of savings as well as the investments in the savings unit as well as the financial system universally, with institutional as well as behavioral agitations and biases avoiding best possible allotment. The idea of inequality and imbalanced information i.e. asymmetry of information remains advantageous. The operationalizing of the financial system in the international world are better examined with the tools of modern banking theory having discussion on bad selection, credit allocation, moral danger as discussed by Holmström and Tirole, (2001).

2.2 Functions of Financial Intermediation

To give details of what was, is, and shall remain the significant function of banking and finance and how this task leads to new risk products, both for the intermediaries' own account products developed by them for the open market, like convertibles, warrants, asset backed securities etc. amended theories are required.

In the traditional Arrow-Debreu model of resource allocation, firms and households interact through markets and financial intermediaries play no role. When markets are perfect and complete, the allocation of resources is Pareto efficient and there is no scope for intermediaries to improve welfare. Moreover, the Modigliani-Miller theorem applied in this context asserts that financial structure does not matter: households can construct portfolios which offset any position taken by an intermediary and intermediation cannot create value (Fama, 1980).

The present research focuses on four major research works identifying the financial intermediation functions. The input is considered to gauge the conventional aspect of the role and functions performed by intermediaries in the developing economy. Due to the development of the financial institutions across the last couple of decades in the economies which are in developing phase, observation of the role of financial intermediaries in growth is undergone. The study is an effort to face the literature with the perspective of the practice to see if the literature appropriately meets the causes that what is the reason for these existing institutions to exist in the financial system, and how the value additive activity is performed.

Research contributions of Benston and Smith Model (1976) provide argument that the presence of financial intermediaries help reduce the transaction cost while the Diamond and Dybvig Model (1983) observes financial intermediaries as institutions assuring liquidity. The Leland and Pyle Model (1977) provide justification of financial intermediaries as institutions which share critical information with corporate clients and become their insiders. This information sharing coalition provides informational advantage for corporate decision makers.

Lastly, the Diamond Model (1984) focuses on the area of Delegated Monitoring enabling the representatives of financial intermediary on board of corporate clients for better monitoring and control mechanism. These models along with a few more supporting models have been discussed here after.

2.2.1 Reduction of Transaction Costs

The research work by Matthews and Thompson (2008) identify the ability of financial intermediaries to lowering various transaction costs, including the aspects related to search, verification, monitoring, and enforcement. The work of Benston and Smith (1976) tries to reflect that the analysis of transaction costs is critical to the theory of financial intermediation. The commodities produced by the financial intermediaries can influence consumption decisions of consumers which can be individual clients and client firms as well. The attached transaction costs alter the type of commodities produced by the financial intermediaries, the way these commodities are packaged and how they are delivered to consumers through financial institutions. This reflects that the transaction costs significantly influence the institutions and their products at offer to the consumers.

In the absence of a bank, the cost/return structure of the saver (S)/borrower (B) is:

$$\text{Spread} = R_B - R_S = T_B + T_S \quad \text{.....Equation 2.1}$$

where R is the interest rate, T is the costs incurred.

The spread provides a profit opportunity, which can be exploited by the introduction of a bank. The bank's transaction costs are denoted by C. For sake of exposition, we assume that the cost is solely borne by the borrower.

Then the cost / return structures become:

$$\text{Spread} = R_B - R_S = T_B^1 + T_S^1 + C \quad \text{.....Equation 2.2}$$

where ¹ indicates the cost after the introduction of the bank. The presence of the bank lowers the cost of the transaction if:

$$(T_B + T_S) - (T_B^1 + T_S^1) > C \quad \text{.....Equation 2.3}$$

Banks reduce search costs through their distribution channels (branch networks, telephone banking, internet banking). Banks use standard forms of contract, thus reducing negotiation costs. Economies of scale arise through size and maturity transformation. The research in this paradigm also advises a thorough approach to reflect the association between transaction costs and intermediaries and the products at offer by these intermediaries so that the transaction costs may be reduced. The current study works in the area and observes the utilization of transaction cost function offered by financial intermediaries. Firms which utilize the intermediated function of transaction cost reduction are expected to reflect higher growth than those which do not utilize the function of financial intermediaries in Pakistani scenario. Andrieş (2009) is of the view that the financial mediators alter the portfolio of credit commanded by borrowers into a deposit portfolio as is preferred by lenders.

Gurley and Shaw (1955) stressed that banks transform portfolio preferred by investors. This conversion is double fold:

(1) Firstly, the banking institutions employ themselves in the conversion of terms. It would be expensive for smaller credit providers to put in writing liability contracts with firms. These smaller credit providers generally like to spread out their risk, this leads to larger quantity of contracts and additional transaction related costs. An intermediating institution has the capability to take benefit of the larger scale contract considerations by lettering and putting into effect debt related agreements with firms.

(2) Through the payment system efforts are made by banks to reduce transaction costs. Centralization of this procedure at the juncture of intermediating institutions prevents useless replication of confirmation costs.

The decrease in costs related to the monitoring, costs that are related to the transaction reflect the influence of information availability to the banks. The financial intermediaries results in the reduction of transaction costs on the side of creditors efficiently. The works of Boot, Thakor and Udell (1987, 1991) along with research contributions of Berkovitch and Greenbaum, 1990) stated that the reduction of transaction costs could be observed in light of

the issuance of instruments having characteristics like those of loan commitment agreements from the borrower's side.

A loan commitment is to be considered a financial option that gives a borrower option to obtain a loan at predetermined conditions and can or cannot be exercised. Loan commitments may cause decrease in borrowing rates and eliminate the associated moral threat problems on the borrower's side. Hence the loan commitments give probability for the reduction in transaction costs.

H1 (a): There is a positive impact of Transaction Cost Reduction Function on firm level growth.

The work of Dewatripont and Tirole (1994) discuss that the purpose of activities performed by banks in the aspects of reducing the involved transaction costs reduction, even though highly relevant, but it reflects only an incomplete picture. Especially, if the problem of monitored directions and regulations are of apprehension. This stimulates the development of other views regarding bank function which have been discussed in the later parts of the chapter. The next segment deals with a different function of financial intermediaries. Liquidity assurances performed by financial intermediaries are a dominant area facilitating firms to improve on operational front and ultimately operational profitability.

2. 2.2 Liquidity Provision

Due to lack of perfection in the available information, the clients are uncertain of their requirements of liquidity in the future due to the presence of unexpected events. Hence the financial intermediaries maintain a pool of liquidity for them. The exchange existing in between fulfillment of cash needs i.e. liquidity and return compels them to grasp their capital. Therefore, Bryant (1980) and Diamond and Dybvig (1983) models of banks as liquidity providers emphasize on liabilities than on assets.

The transformation of illicit assets to liquid assets by banks was analyzed by Diamond and Dybvig (1983). The model that has been provided by Diamond and Dybvig, according to it, the investors are not inclined towards risk and are not sure about their consumption patterns. In the absence of financial intermediary, the individual investment units are engaged into non-liquid longer duration investments such that those who consume late result in high returns. The presence of banking institutions is able to help progress on a competitive financial market and its mechanisms by provision of superior risk allocation amongst participants who need to consume at random patterns. Thus, a financial intermediary that promises its investors a result for premature utilization and a return for delayed encashment comparative to the financially non-intermediated case provide improved risk sharing.

In Diamond and Dybvig's Model the most favorable assurance agreement is the agreement of the demand deposit but even that does not have an eye catching symmetry such as the case of a bank run, where the entire group of depositors panic and withdraw the deposits instantaneously. Bank runs result in genuine economic problems because even "strong" banks can fall short, leading to a recall of loans and the termination of dynamic investment. In Diamond and Dybvig's Model (1983) the non-convertibility of assets into cash provides equally the justification for the subsistence of banks and for their susceptibility to bank runs.

Diamond and Dybvig (1983) was of the opinion that an intermediating financial institution produces provisions to fulfill liquidity for depositors. The approach of Diamond and Dybvig (1983) is utilized in the research works of Bencivenga and Smith (1991) and as well by Bernanke and Gertler (1987) in their universal models of equilibrium with financial intermediation causing the balances between the depositors and borrowers liquidity perspective.

Diamond-Dybvig (1983) stated that depositors are unaware in prior whether they will need liquid funds or not in the future. Similarly, the borrowers may come back urgent need for liquid funds. In order to provide depositors who withdraw their deposits, with liquid assets; banks will be in need to sell less liquid but more profitable assets that will reduce the profit opportunities of the banks. If multiple depositors make a withdrawal, the others are also compelled to copy and follow the similar conduct, which results in the generation of a

phenomenon called as the bank run. As a result of this, a dilemma is faced by the banks: to make the investments in liquid short term assets and restrain from making investments in term-transformation purpose or in illiquid long-term assets. Thus they come up with the possible bank runs. Banks need to manage their investment portfolio better so that they may be able to address the liquidity needs of the depositors as well as the borrowers.

An insured deposit contract is a solution to the problem, which guarantees the return of invested amounts. This procedure helps in the prevention of the phenomenon of bank runs as well as an efficient allotment of resources that is better-quality to those without the coverage of liquidity insurance. This helps in meeting the liquidity needs of the borrowers. In a similar instance, the deposit insurance need illustrates the stipulation of regulatory interference. The research conducted by Hellwig (1994) also utilizes the Diamond-Dybvig Liquidity Provision Structure to carry out a universal symmetry analysis. The macroeconomic model for endogenous growth by Bencivenga and Smith (1991), along with the financial contamination model given by Allen and Gale (2001) and countless other similar are the application of the Diamond-Dybvig Framework (1983) standard approach.

Generally, a huge quantity of participants on either dimensions of the balance sheet is involved. On the side of financial liabilities, there are demand deposits. Banks issue a particular kind of securities to saving units that emerge to be dissimilar to those of capital markets. Diamond and Dybvig (1983) considers about the exclusiveness of liabilities in the bank. They were of the view that, however the makeovers can be conceded directly not including the involvement of banks. But the "liquidity insurance can be provided" by bank deposits to a firm, through which a liquidity crisis for a firm with short-term debt can be prevented beforehand and also limit the firm's need to use bankruptcy to stop such crises. In this sense, bank liabilities provide consumption by smoothing against the risk of uncertain preferences for expenditure streams that cannot be obtained from capital markets (Gorton and Winton, 2002). Similar with Diamond and Dybvig (1983), Gorton and Pennacchi (1990) also found that banks' liability side to investigate the role of banks as liquidity providers. They argue that bank deposits are fascinating in terms of creating liquidity and providing protection against relatively unanticipated agents.

Depositors observe the risk of liquidity crisis in sense of possibility of needing liquid funds in future. Andrieş (2009) stated that the investors trade -off between liquidity and return forces them to hold their wealth in form of bank deposits. Therefore, models of banks as liquidity providers focus rather on bank liabilities than on bank assets. In the famous Diamond-Dybvig Model, a priority is not shown by whether they will face liquidity needs in the future.

The current study undertakes the function of liquidity assurance provided by the financial intermediaries and quantitatively assesses its influence on the growth of firms at the individual level as well as at the industry level. The assurance of liquidity function is expected to resolve liquidity issues for the corporate unit as it is assured by the financial intermediary offering the service. Firms which utilize this intermediated function of liquidity offered by the financial intermediary are expected to report higher growth levels than those who do not utilize the benefits of liquidity assurance.

H1 (b): There is a positive impact of Liquidity Assurance on firm level growth.

2.2.3 Information Provision

Informational asymmetry is one of the major arguments during the discussions on financial intermediation. Bhattacharya and Thakor (1993) make an argument for theories of intermediation based on information that this is more fundamental in nature. The presence of moral hazards is a reason for prevention of direct transfer of information amongst the participants of the financial markets. They argue that moral hazard prevents direct information transfer between market participants. The borrowing units are more likely to have more information than lending units. However the presence of financial intermediaries in the financial system makes them the information sharing partners. They purchase and embrace investments on the foundations of the attained specific information (Leland and Pyle, 1977; Matthews and Thompson, 2008).

A company that is in need of loan based financing characteristically has an alternative between being obliged to the public in general or to the commercial banks. The debt obtained

from the public is unproductive because it compels the lender of funds to evaluate firm's solvency, or bring up to date ranking information with regard to special purpose agencies.

Leland and Pyle (1977) reflects how much a banking institution communicates useful information to facilitate the investment units regarding the probable borrowing units that even at a lower cost than individual borrowing units. The point of focus here is after the aspect of informational asymmetry, in which the entrepreneurs are aware of the expected benefits on their investments, but on the other hand the remaining market representatives discover this costly to monitor. This causes a moral hazard issue as the firms with lower expected rates of return contain reason to maintain a higher possible return just to boost their marketplace valuation. In the representation provided by Leland and Pyle, the financial intermediation institutions help resolve the issue of moral vulnerability through the examination of firm's decisions.

Since the intermediating firms have the potential to modify the risk aspects of financial assets, they are able to prevail over market crumple and resolve an information asymmetry catastrophe. The informational roughness in credit based markets arises due to that borrowers are aware more about their projects than lenders. According to the works of Hirschleifer and Riley (1979), the complexity with imperfection of market based information is that the available information is a "publically available commodity". If high cost privately generated information is later on utilized with a reduction of cost by supplementary participants, thus will be lesser inducement to make investment in the publicly available information.

The works of Leland and Pyle (1977) identify that if costs related to transaction are not involved, the principal lending units would acquire the most important securities themselves and evade the costs that might be involved during intermediation. Costs of transaction are a significant reason for intermediation to exist.

The proposition for the existence of financial intermediaries advocates that once the banking institutions attain information they ought to be intimation their informational benefit to lending units exclusive of giving away their informational benefit. One reason attributed to the rationale that the financial intermediaries attain information at an inferior cost than individuals is that the financial intermediation institutions avoid replication of information. Another reason attributed is increasing returns to scale for the financial intermediaries. The intermediating institutions develop extraordinary dexterity in appraising potential borrowers as well as investment projects. The financial intermediating institutions are also able to make use of cross-sectional information and make the re-use of information time and time again.

A problem associated with the Leland and Pyle (1977) Model is the assumption of the existence of an incentive signaling equilibrium. While on the other hand, the work undertaken by Campbell and Kracaw (1980) provide the identification that if a signaling symmetry subsists, then companies will be appropriately valued with or without the existence of financial intermediaries. This would result in intermediaries becoming a useless entity for the valuation of firms. Re-examining the case, it talks about “existence of signaling equilibrium” which can only be possible in a perfectly efficient market. Since the existence of perfectly efficient market as suggested by Fama (1970) is only a hypothetical and imaginary situation, the existence of a perfect signaling equilibrium can never be achieved. This makes a strong argument in favor of utilization of information sharing coalition function with the financial intermediaries which result in firm growth.

The research contributions of Jaffee and Russell (1976) gave a theoretical model that imperfection of the available information and uncertainty escort to rationing in debt based loan markets. This model makes an analysis of the behavior of a loan market where borrowing units have additional information than lending units about future prospective results. The key characteristic of the model was the connection between default proportion and contract size identifying a loan size which resulted in zero default.

The works of Gorton and Penacchi (1990) suggested that equity is more information accelerated than assets and creditors with lesser information are attracted to it. The normal control aspect of information condition deliberated by Leland and Pyle (1977) and Campbell and Kracaw (1980) reflect on the feature that debt from the bank provides supplementary favorable aspects for creditors than the ordinary public debt.

A natural benefit arises not only for the reasons of achieving the economies of scale with relevance to information provision, but additionally due to the reasons of economies of scope as the borrowing units bank fund flows information can easily give information about a borrower. The literature on information asymmetry broadly discusses the function of banks related to information particularly as soon as issues of moral hazard and bad choices are tackled with. The models given in the models of Greenwood and Jovanovic (1990) as well as the model of Boyd and Smith (1992) provide discussion on the areas of financial institutions as providers of useful information.

It is suggested by the theory of financial intermediation that in case of disturbances, which obstacles in the equilibrium market allocation to be optimal, it can be reestablished by the financial intermediaries. The possible distortions may be (1) costs related to transactions, that hinders in access of the financial markets and (2) informational anomalies i.e. asymmetries. It is obvious that the intermediaries will not solve these due to the incompleteness of the markets unless the missing securities are issued by the intermediaries. However, disturbance free competitive market symmetry provides a good orientation point for comparison with the financially intermediated system.

The current study utilizes the information available regarding the utilization of information sharing from intermediated institutions with firms and its influence on the growth of firms. The quantification and analysis are expected to generate a positive impact of utilization of information sharing coalition services from the intermediary on firm and industry level growth.

H1 (c): There is a positive impact of Information Sharing Coalition Function on firm level growth.

Traditional theories of intermediation are based on transaction costs and asymmetric information. They are designed to account for institutions which take deposits or issue insurance policies and channel funds to firms. However, in recent decades there have been significant changes. Although transaction costs and asymmetric information have declined, intermediation has increased. New markets for financial futures and options are mainly markets for intermediaries rather than individuals or firms. These changes are difficult to reconcile with the traditional theories. The next section discusses the role of intermediation in this new context stressing risk trading. Consequently, if the banking institutions possess a thoroughly diversified collection of assets, the saving units hold riskless debt based contracts and do not need to monitor the bank continuously.

2.2.4 Delegated Monitoring

As a result, Diamond (1984) further explains Leland and Pyle's (1977) statement and further exemplifies that financial intermediaries can act as "delegated monitors", which reduces the cost of checking information. Diamond (1984) established the context of moral vulnerability in his representation to analyze the level of graveness of information anomaly for banking intermediaries. The transaction costs perspective further extends that assigned supervision not only assumes optimization through large scale interactions but it is in a social context appropriate when the bank values the borrowing units as a representative of the savings unit.

The costs related to transactions and information unbalance offers some deeper understanding about the existence of financial intermediaries. But, there are complicated reasons for intermediation (Santomero, 1984). Apart from it, unexpected and quick fluctuations in the financial market have improvised the functions of intermediation of transaction and asymmetry of information. The apprehension of financial intermediation by using only

transaction costs and information asymmetry is not adequate as argued upon by Allen and Santomero (1997, 2001).

The observation laid by Allen and Santomero (2001) that in the recent past despite the reduction in transaction costs and asymmetric information, intermediation has grown higher. It is proposed by some others that risk management becomes the vital function of financial intermediaries (Allen and Santomero, 1997, 2001; Scholtens and Wensveen, 2003). In this regard, financial intermediaries have the capacity of converting more risky assets into less risky ones (Fabozzi et al., 2002; Scholtens and Wensveen, 2003). Whatever is the newly performed function by financial intermediary, an economic agent fundamentally is the person that has expertise in providing brokerage (e.g., transactions services, financial advice, and insurance, etc.) and qualitative asset transformation services.

Diamond (1991) further developed on the concept of banks as monitors who have been delegated monitoring function. It explains the reason of banks offering loans to firms who have major chances of default. The checking by banking intermediaries is a kind of reprisal tool for companies as the banks keep a constant scrutiny of firm activities. As banks have ability to check firms and the bondholder cannot, good reputation can be achieved by firms during borrowing from banking institutions. The companies with good standings then can change to the market for bonds for the purpose of financing investments.

Chemmanur and Fulghieri (1994) presume that it is the reputation acquired by the bank that differentiates it from bondholders. The present issue has reputation acting as a tool for assurance that assures the borrowing units to better renegotiation in case of financial distress faced by the firm. The provision of enhanced ability to renegotiation conditions is an unusual characteristic of financial intermediation institutions that is not held by the market for bonds.

The examination by Bolton and Freixas (2000) emphasize on the affiliation of the intermediation to commitment. It is in the knowledge of firms that the banks are better in provision of loan conditions than markets in the times of financial distress and also check how the funds are utilized. As a result, banks are preferred by firms to markets. Therefore,

three reasons are identified for beneficial aspects of banks in debt renegotiation in comparison to markets:

(1) the monitoring benefit of the bank, acts as a reprisal tool and it makes it possible for banks to make better provisions for the reputation building by firms

(2) reputation of the bank as a creditor, which acts as an informal form of commitment, and

(3) the relationship view, which also acts as a commitment device.

Diamond (1984) argues that diversification within the financial intermediary is the main reason financial intermediaries exist. His model states that the result from firms' investment plan is unknown ex post to outer agents, except the case when information is assembled to assess the outcome. This shows the way to a moral hazard dilemma for the reason that it provides an encouragement for borrowers to make a default. In Diamond's Model, the intermediaries are delegated the precious task of monitoring loan contracts. A financial intermediary involved is required to choose an incentive agreement such that it has an encouragement to keep an eye on the information, make appropriate use of it, and make adequate payments to surplus unit to draw deposits. Providing these inducements is very costly and the utilization of diversification can reduce these costs.

Diamond (1984) explains that a financial intermediary is in an overall advantage as compared to direct lending and borrowing. The main crux of the idea is that there is an informational imbalance between the borrowers and lenders. An intermediary can help in decrease in informational costs, if there is diversification in portfolio of credits. A very important role is being played by diversification even in the world of risk-neutral agents.

Stiglitz and Weiss (1981) proposed a model of credit rationing on the assumption that the interest rate has direct impact on the quality of loans because of detrimental selection effect or moral danger effect in which some borrowers are receiving loans and others are not. It is stated by Williamson Model (1986) of credit rationing that borrowers are targeted to a moral

threat problem. Borrowers are predicted to be identical, but loans are received by some. A borrower and lender are given information asymmetrically based on actual results about the return on the borrower's investment project, and the borrower will have advantage to default on the loan on false grounds. High cost of monitoring by lenders along with investment projects on grand scale entail that there exist growing returns to scale in lending and borrowing which may cause profiteering financial intermediaries.

The delegated monitoring function of financial intermediaries on corporate projects imposes a governance perspective. This helps address the adverse selections. The delegation of monitoring services results in involvement of financial intermediaries in decision making providing a new perspective enabling protection of stakes of financial intermediaries affiliated with the firm as well as better decision making within the company.

There is no need to monitor financial intermediary as it bears all penalties for any deficiency of payments. The reason for this is that there are very less chances for penalties to occur. The diversification of the intermediary's portfolio makes the probability of incurring these penalties very small. The most favorable size for a financial intermediary is absolute; diversification reduces the costs indefinitely.

Solvent firms would always have access to funds to raise their capital to exploit new investment opportunities if there were frictionless financial markets. Some logical explanations giving reasons of friction in the market, such as moral hazard, adverse selection, and/or agency costs raise obstacles for the flow of capital to firms with profitable investment opportunities were suggested by microeconomics of asymmetric information. The financial intermediaries as information producers propose a solution of this anomaly. If the flow of capital is from creditors (depositors) to the borrowers (firms) through the system of financial intermediation, credit contracts between banks and firms should be the same as the debt contracts in the market without financial intermediaries.

Hence, it is strongly suggested by the factual work that bank loans and corporate bonds are different from each other in domestic as well as international capital markets. As a matter of

fact, future access of sovereign defaulters to capital markets is denied by the private creditors in a reputation-lending framework. A firm cannot raise additional capital with a new issue of bonds if it defaults on its bonds, it. Firms with financial stress may give priority to obtain bank debt as compared to the public debt (bonds) if such funds are given by banks.

The delegated monitoring feature enables banks to keep a check on the firm management to assure investments in appropriate perspectives resulting in diversified returns for the firm and assurance of the bank loan installments. Thus, the association between the delegated monitoring and firm growth is expected to be positive.

The research also takes into consideration the role of “Bank Ownership” from whom the financing has been obtained and links it to growth. Korner and Schnabel (2011) studied the relationship between these aspects and related the growth with ownership. The private banks in comparison the government held banks have been supported by literature to perform better and ensure growth. Khan and Qayyum (2007) performed efficiency comparisons between the domestic and foreign banks in Pakistan. They indicated that the domestic banks operating in Pakistan are relatively less efficient than their foreign counterparts. Here the influence of presence of a foreign bank as a delegated monitor is observed to have an impact on firm growth.

H1 (d): There is a positive impact of Delegated Monitoring on firm level growth.

The discussion of the relationship between financial intermediation and firm level growth can be at two different aspects. The first aspect discusses the financial intermediation as the proportion of financing used by the firms utilizing the option of debt instruments and equity instruments. This is related to the Pecking Order Hypothesis presented by Myers (1984) of the Capital Structure which argues that the firm managers will opt for the least expensive financing. The hypothesis suggests that the firm managers will opt for internally generated funds, followed by the debt financing option and lastly the equity option. the relationship of financing with growth can now be viewed in perspective of the “Capital Structure Relevance” theories i.e. Net Income Approach and the Traditional Approach to capital structure which

are in opposition to the M-M Theorem (1958). These suggest that variation in the financing structure imparts influence on the firm value.

The Traditional Approach to Capital structure drives the Optimal Capital Structure which in turn proposes that the contribution of intermediated financing using bank financing has an optimal level which would optimize firm value, cost of capital and the proposed growth of the firm. Thus the growth at micro (firm) level is a function of the proportions of intermediated financing.

The second aspect of the relationship discusses growth at the firm level with the functions of financial intermediaries in special context of banking intermediaries. The intermediated financing enjoys preference due to the offering of the specialized functions by the intermediaries. These functions include the function of “Transaction Cost Reduction” as discussed by Benston and Smith (1976). This function’s utilization by the firms reduces the transaction cost for the firms. The presence of intermediaries cut down the costs associated with an attempt to generate financing as compared to the more expensive option of direct financing i.e. un-intermediated financing. This optimizes the costs while increases growth at firm level. Mathews and Thompson (2008) provide illustration of this conception. While the work of Bhattacharya and Thakor (1993) link borrower’s characteristics and firm’s financing choice.

The next intermediated function taken into account is the provision of Liquidity Insurance function as discussed by Diamond and Dybvig (1983). This function by the banking intermediaries specifically provides an assurance of liquid financing such as the presence of a revolving credit option or the line of credit whenever required by the firm. This results in improved liquidity position of the firm. When liquidity position is better, the risk reduces and the firm engulfs greater market position resulting in higher growth levels.

The work of Leland and Pyle (1977) discuss another important function of the intermediaries i.e. “Information Sharing Coalitions.” The intermediaries if finance a firm, it indicates a signal in the market that the intermediary feels comfortable to lend to the firm. The intermediary believes that the firm has got sufficient ability to pay back the loan. The

financial intermediary assures the payback of funds by conducting a complete analysis of the financial health and future propositions. If it finds it safe, it lends, which indicates a sign to the marketplace that although the firm is escalating the proportion of leverage, it is safe to invest in it and highly probable that the firm will see growth in near future.

The last intermediated function taken under consideration in the study is “Delegated Monitoring.” Diamond (1984, 1996) discussed the role of delegated monitoring as growth enhancing as it ensures the optimal decision making. This function assures that the governing board has a representative from the intermediating firm thus ensuring utilization of funds in an optimal way. Mathews and Thompson (2008) discuss the delegated monitoring function in ameliorating the information asymmetry. Saunders and Cornett (2006) discuss the costs of delegated monitoring as being lower than total cost of direct monitoring.

The Agency Costs for the firms are further reduced due to the utilization of the intermediation functions. The presence of the delegated monitoring and a watch dog from the outside reduces the agency costs for the firm and influences the firm growth.

2.3 Financial Intermediation and Industrial Growth

The study so far explores the first tier of firm level intermediated growth. Now, the study discusses the second tier i.e. the impact of financial intermediation on industrial growth. The State Bank of Pakistan (SBP) performs an annual financial analysis of companies listed at the Karachi Stock Exchange (KSE) called the SBP Balance Sheet Analysis. The study classifies the listed companies in 15 different industries. It observes the growth patterns in each industry being a function of financial intermediation functions. The growth in each industry contributes towards overall economic prosperity by adding to the GDP of the country. Thus, growth in each industry needs to be accelerated. Each industry has different set of financial requirements to be fulfilled and the intermediaries in the financial system have developed several such products to cater the needs of different industries.

Rajan and Zingales (1995, 1998) discussed the role of financial systems, industrial structure and growth. Carlin and Mayer (1998) complemented their findings and found that industries funding higher proportions with equity have higher growths. However in contrast, bank debt financed industries tend to grow slowly in OECD¹ countries. In contrast to developed countries, the industries that are dependent on banks in countries with a low GDP grow faster as banking system improves. Thus, debt financed industries grow faster in developing countries. This is in alignment with the growth that occurred in Japan and Germany. While in the U.S, equity financed industries grew rapidly.

Gupta (1969) discussed the effect of firm size, its growth and the industrial distinction on the financial structure. The study by Beck et al. (2000) found that those economies grew faster, those industries which depend heavily on peripheral funding grew promptly, and the newly developed firms form more easily and more rapidly grew in economies with a superior levels of by and large financial growth.

Each industry positively contributes towards economic growth. Thus, it is necessary to provide it with a financial system which responds to the dynamic needs of the industry. The wide variety of functions offered to different industries varies in their usefulness for each industry. The study explores the financial intermediation functions of transaction cost reduction, liquidity assurance, information sharing coalitions and delegated monitoring function in each industry. Each industry utilizes the various functions offered by financial intermediaries in their own capacity and as per their industrial requirements.

H2 (a): There is a positive impact of financial intermediation functions on industry growth.

The study focuses on growth in different industries as a function of different financial intermediation services utilized within each. The significance of financial intermediation functions within each industry reflects the utilization of the intermediation function specific to each industry. Industries have dynamic requirements of financial intermediation services and the financial system attempts to cater their specific needs. Functions identified in literature are tested and the study explores whether these intermediation functions have the

¹ OECD –Organization for Economic Cooperation and Development

same effect in all the industries or are the financial intermediation functions specifically influential on a specified industry using panel data analysis.

H2 (b): Impact of the financial intermediation on growth is same across the industries.

The moderating effect determines whether a specific function moderates the linkage between industrial growth and financial intermediation function. The study explores the moderating effect of the functions of financial intermediation in each industry. The moderating term of “financial intermediation function and the industrial dummy” reflects whether a specific intermediation function has a significantly different impact on growth across the industries.

H2 (c): Industry dynamics moderates the relationship between financial intermediation and growth.

After the analysis of the impact of financial intermediation on firm level and the industry level, the study now explores the impact of financial intermediation on overall economic growth. This serves as the third tier of the study. The study explores the financial system in context of macroeconomic environment.

2.4 Financial Intermediation and Economic Growth

At the macroeconomic level, the generation of sufficient funds is necessary for smooth economic growth as these are utilized to fund the necessary expenses including developmental and non-developmental expenditures. For this purpose the governmental authorities spare significant attentiveness for addressing the needs of the financial system. Moreover, the financial system is responsible for economic level growth. The nexus of finance led economic growth finds significant literary evidence in financial theory. Research contribution from Bagehot (1873), Schumpeter (1911), Hicks (1969) and Miller (1988) provide sufficient understanding of finance serving growth at all levels.

Macroeconomic financial literature identifies that at the macro level, finance-growth relationship is essential for macroeconomic growth. Controlling the flow of funds in an economy enables the regulatory authorities to control major macroeconomic variables such as investments, aggregate production, employment levels, aggregate demand, purchasing power etc. ultimately leading towards economic growth and development. Recent research works of Vazakidis (2009) and Rengin and Kara (2011) provide arguments for the effective mobilization of funds for short and long term economic growth.

It is the reality that the financial systems in many countries have undergone a big conversion in latest years. Financial markets such as the stock and bond markets have grown in size without using any metric, like the value of companies listed or any other imaginable measure of their significance. At the same time in the 1970s and 1980s huge financial innovation acceleration took place. It included the influx of novel financial products like various mortgage backed securities and other securitized assets as well as derivative instruments like swaps and complex options. These all had huge eruption in essence. Despite of it, new exchanges for financial futures, options and other derivative securities took place and large scale markets emerged. As a matter of interest, the upsurge usage of these instruments by financial intermediaries and firms resulted in the boost in the dimensions of financial markets. Households have not used them to any significant limit. Actually, the expanded size of the financial market has eventuated with a sudden shift of direct involvement by individuals in financial markets towards the participation through different sort of intermediaries.

The financial system comprises of the different financial intermediaries identified in the previous section. The frequency and concentration of the institutions utilized in a financial system may classify it as a Bank Based Financial system or the Market Based Financial System. According to the study conducted by Chakraborty and Ray (2006) lending to firms is loaded with moral vulnerability as owner-managers may decrease investment profitability to enjoy secretive benefits while the bank monitoring partly resolves the agency problem where as the market-finance is more 'hands-off'.

The emergence of bank or market-based system takes place from firm-financing choices. It cannot be determined with precision which of the financial systems is better since evidence from Vitols (2001) provide an argument that both systems have resulted in success across the world. The rate of growth however depends, critically, on the competence of financial institutions. Sahoo (2014) empirically evaluated the role of financial intermediaries in Indian economy which revealed that in a relatively bank-centric financial sector, Indian banks have the potential of further channelization of credit to productive sectors of the economy.

The work of Chakraborty and Ray (2006) provide evidence that a bank-based financial system is able to outperform a market-based financial system. They quantified that investment and per capita income are superior, and income inequality inferior, under a bank-based system. They also stated that bank-based financial systems are more favorable for sophisticated industrialization.

The financial sector effectively provides a genuine service for economy. All developed countries have advanced systems of intermediation and they have structural diversity. The U.S Financial System, which has been identified as Market Based System in literature, has focused on Capital market intermediation. The absence of a relatively less rooted banking system in the U.S has been attributed to the regulatory and legal regulations passed in the U.S. The McFadden Act (1927) prohibited interstate banking and effectively omitted banks to operating within a single state resulting in historical damage of the banking sector (Rajan & Ramcharan 2011). The Glass-Steagall Act (1934) legally separated commercial and investment banks (Kroszner & Rajan 1994).

Different financial systems have been operational. All with their pros and cons. The empirical evidence identified in literature provides support both for the prevalence of Market based and Bank based financial systems. The bank-based financial systems have been focused upon frequently by emerging economies for outburst growth. Policymakers in these economies cite examples of Germany and Japan having a bank-based financial system (Vitols, 2001). This

has been accredited to the ability of the banking system to accelerate economic growth. The role of financial intermediaries, institutions within the system and the instruments offered by them provide opportunities to the players to revolutionize outcomes of information, enforcement and business costs for accelerated growth at all three tiers of firm, industry and economy.

Levine, Loayza and Beck (2000) raised some critical questions. Do better functioning - financial intermediaries, financial intermediaries that are better at ameliorating information asymmetries and facilitating transactions, exert a causal influence on economic growth. Academic research finds links to the works of Brealey, Leland and Pyle (1977) for the role of financial intermediation for growth. Pakistan has seen many significant incidents which has been an impediment in its growth. Amongst the few highlights, we can consider Pakistan's controversial role in war on terror, arguably corrupt governmental regimes, military involvement, influences of non-democratic forces in policy making (foreign influences) and many more. The presence of a regulatory framework having potential to address the financial market needs, require more consistent and effective implementation. This paper attempts to identify the empirical statistics and inferences can be drawn on these basis regarding the relationship that exists between the financial intermediation variables and economic growth in Pakistan.

This section of macroeconomic financial intermediation on economic growth also attempts to provide evidence of whether the structural change of financial liberalization after 1990's influenced the economic growth pattern in Pakistan. The study is limited to the empirical evidence from Pakistan. It takes into consideration two phases of the financial timeline i.e. Pre-liberalization phase (before 1990) and Post-liberalization phase (post 1990). The time horizon of the study ranges from 1960 to 2013.

The banking sector plays a pivotal role as it assists in payment mechanism, activates savings, and distributes funds for productive uses. Jaffe and Levonian (2001) and Wachtel (2001)

identify the role of banks being important for efficient allocation of funds and generation of economic activities. Cameron (1967) stated that an efficient financial system can intermediate to mobilize bidirectional causality between financial system development and the growth in the economy. Economic managers thus devise such policies which enables the presence of a level field for banks.

Historically, the banking sector of Pakistan has been playing an important role in the economic development of the country. However, the financial landscape of the country changed significantly in mid 1970s with nationalization of Pakistani commercial banks. Besides nationalization of banks, various digressive steps were also taken, which includes commencement of subsidized credit schemes, introduction of a complex system of credit ceilings, and the imposition of controls on interest rates. Government also started interfering in the business affairs of banks. In particular, the nationalized banks were issued instructions to accommodate and meet firstly the borrowing needs of government and its institutions. As regards the borrowing needs of the private sector (which is supposed to be the engine of economic growth), it was either ignored or met rarely.

Due to the above policy changes, the efficiency of banks affected severely. By the end of 1980s, the banking sector in Pakistan had become hardly conducive to meet adequately the growing financial needs of the country. According to Bonaccorsi & Hardy (2005), the role of state-owned banks, government sponsored schemes for specific sectors, high domestic borrowing by the government, and an administratively controlled yield structure, contributed to financial repression in Pakistan. To reduce the adverse impact of resultant financial repression, the recipe of financial sector reforms was essential to be implemented. Therefore, to adequately respond to the factors behind poor performance of financial sector, especially the banking sector, a comprehensive reform program was initiated in early 1990s.

The objectives of the financial reforms of 1990's include; the facilitation of the efficient and effective monetary management through introduction of non-direct monetary controls;

removal of distortions and segmentation of financial markets by creation of a homogenous market for participation of all individuals and institutions; encourage the development of the secondary market for short as well as long run; and reduction of transaction costs. Especially, the measures pertaining to financial liberalization and deregulation were particularly important for banking sector due to having far reaching implications for banks.

The literature regarding the relationship between the financial intermediaries and economic growth can be tracked to Schumpeter (1911) who states that a well functioning financial system encourages technical innovations resulting in the growth of economies. The regulatory reforms in the country regarding improvement of its financial systems help to extract benefits in terms of raised levels of economic growth. Academic research around the world can be traced frequently in the last quarter of the 20th century as well as the 1st decade of the 21st century.

Mckinnon (1973) and Shaw (1973) state that financial intermediaries' development lead towards economic growth. The works of Brealey, Leland and Pyle (1977) propose that an intermediary can signal its informed status by investing its wealth in assets about which it has special knowledge thus removing information asymmetries and better allocating funds. Miller (1986) acknowledges the precedence of financial innovations altering the canvas of financial markets and providing medium for economic expansion. Greenwood and Jovanovic (1990) and Bencivenga and Smith (1991) explicitly model the services provided by financial intermediaries. These models provide the evidence of positive linkages of financial intermediaries with economic growth. King and Levine (1993) identified existence of a negative effect of government intervention on relationship between financial intermediation and economic intensification. This shall also be empirically investigated during the present study. In the Pakistani context, the research in this area needs to be explored since the political setup has been an ever changing dynamic portrayal due to intervention by dictatorial regimes and fragmented policy making.

The 21st century literature addresses the causality issues as well. Levine (2005) finds the evidence that growth in the economy is not based type of financial system, rather on the ability of the system to carry out its functions productively. Levine (1997; 2005), research works by Trew (2006), and the evidence provided by Demirguc-Kunt and Levine (2008) provide substantiation of functions of financial intermediation in growth at the economic level. Badun (2009) also provide a confirmation of the linkage between intermediation and growth. Ewah et al. (2009) investigated the relationship between the capital market efficiency and economic growth in Nigeria.

Chee and Nair (2010) used data from 44 Asia and Oceania countries for the study on financial sector development on economic growth. It empirically examined that financial sector development enhances the contribution of foreign direct impact on economic growth in the region. Waheed and Younus (2010) investigated the effects of financial sector development and its efficiency on economic growth from developing and developed countries. The results exposed that the effect of financial sector's development and financial sector's efficiency on economic growth is significantly positive for developing and developed countries. The results of the study focused that financial sector's development and financial sector's efficiency stimulates economic growth.

Ahmed and Wahid (2011) investigated the financial structure and economic growth link in African countries. Mahran (2012) employed an autoregressive distributed lag methods and the error correction model (ECM) to study financial intermediation and economic growth in Saudi Arabia. Ali (2013) investigated the long run and short run linkages between economic growth and financial development in Sudan employing Autoregressive Distributive Lag (ARDL) techniques. The result of the analysis indicated that credit to the private sector and the liquid liabilities exert positive effect on real per capita GDP.

Peia and Roszbach (2015) re-examines the empirical relationship between financial development and economic growth in 26 countries. It is concluded that the leading role of

financial intermediation in industrialized countries appears to vanish when we consider a period in which the financial sector has developed extensively. Arabi (2014) employed Johansen approach to co-integration and vector error correction Model to examine the dynamic relationship between economic growth and financial development in Sudan. The test for co-integration showed that there is a linear long run relationship between real GDP growth and financial development. The empirical results of the study provided that there is a marginal positive effect of financial sector development on economic growth. The study also emphasizes policy makers to review the legal and institutional arrangements which contribute for financial repression to hinder financial sector efficiency.

Pradhan et al. (2014) employed the panel vector autoregressive model to investigate the causal relationship between banking sector, stock market development and economic growth in 26 ASEAN Countries. The study found the presence of both unidirectional and bidirectional causality links between variables. The study also makes recommendations to make the banking sector more accessible for economic growth.

Sahoo (2014) used ARDL and Granger causality approach to examining the role of financial intermediation in Indian economic development from 1982-2012. The assessment through the various indicators of financial development revealed that both the bank-based and market-based intermediation processes have undergone remarkable improvements in the last six decades. One-way Granger causality from private sector credit to real GDP confirmed the supply-leading process of bank intermediation. The study findings of Sahoo (2014) also indicate that in a relatively bank-centric financial sector, the Indian banks have the potential of further channelization of credit to productive sectors of the economy.

Xu (2016) investigated the connection between financial intermediation and economic growth in China utilizing Generalized Method of Moments (GMM) approach for dynamic panel data with results showing support for the argument that financial development is generally associated with economic growth.

Ayadi et al. (2015) explored the impact of financial development, bank efficiency, on economic growth across the Mediterranean using Fixed-effect panel model from 1985–2009. The study reported that the credit to the private sector and bank deposits are negatively associated with growth identifying the possible deficiencies in credit allocation as well as weak financial regulation and supervision. They also reported that stronger financial institutions result in growth.

A tabulated evidence of the relevant literature is provided below in Table 2.2:

Table 2.2 **Tabulated Evidence of the Relevant Literature**

<i>Author</i>	<i>Research Method</i>	<i>Financial Indicators</i>	<i>Finding</i>
De Gregorio and Guidotti (1995)	Panel analysis Cross-section analysis	Bank Private Credit to GDP	Constructive linkage between intermediation and country growth. It changes in accordance to demographics, time spans, and levels of revenue.
Berthelemy and Varoudakis (1996)	Cross-section Analysis	Money + quasi-money to GDP	Financial underdevelopment is a hurdle for countries with high human capital.
Odedokun (1996)	Time-series data analysis	Credit issued to private sector divided by GDP	Intermediaries promote growth across countries and regions.

Ram (1999)	Correlation and time- series	Liquid liabilities to GDP	No assertion can be made that financial development has a constructive outcome on economy.
Deidda and Fattouh (2002)	Cross-section analysis	Ratio of liquid liabilities to GDP	In countries with low level of income, there is insignificant relationship of financial enhancement and growth.
Koivu (2002)	Panel data base analysis	Private Credit to GDP Interest rate margin	There is no significant between private sector credit and growth in economy. The causality goes from the growth of economy to financial growth.
Calderon and Liu (2003)	Panel data base analysis	Private Sector Credit to GDP M2 to GDP	Financial deepening throws in additionally to connection in the developing countries.
Favara (2003)	GMM panel analysis	Liquid liabilities/GDP Private sector credit/GDP	The association of financial expansion and growth in economy is feeble and not linear.

Christopoulos and Tsionas (2004)	Dynamic panel analysis	Bank deposits to GDP	Causality in long-run goes from development of financial system to growth.
Rioja and Valev (2004)	Dynamic panel analysis	Commercial bank to central bank Loans Liquid Liabilities to GDP Private Credit to GDP	Countries having lower development in financial aspects do not have a clear outcome on growth. There are positive or nonexistent linkages.
Shan (2005)	Time-series data base analysis	Total Loan Credit to GDP	There exists little proof of development of financially led growth.
Demetriades and Law (2006)	Cross- country; Panel analysis	Private Loans to GDP Domestic loans by banks to GDP Liquid Liabilities to GDP	Enhancement in financial institutions helps deliver more expansion benefits in middle-income economies.

Fang et al. (2011)	Cross-section and panel analysis	Private Credit (M3-M1) Liquid Liabilities to GDP	Historically there is a weak linkage between intermediation and growth. The effect of financial depth has disappeared.
Beck et al. (2008)	Comparative cross regressions	Enterprise Loans to GDP Household Loans to GDP Bank Loans to GDP	Lending to enterprises drives the constructive impact in the economy. The finance-growth relationship is not linear.

Source: Compiled by the Author

In comparison to past, the presence of a strong institutional framework in practice enables the borrowers and savers to financially intermediate. The role of government may however not be ignored as it provides this regulatory framework. On the other hand, the Pakistani government is also involved in heavy deficit financing which curtails the lending power of the financial intermediaries. Literary evidence in Pakistani context can be obtained from the works of Shabbir (1997) who conducted cross-country theoretical evidence. Hashmi and Haider (2012) address the need for theoretical and empirical evidence comparing the U.S, U.K, and the Pakistani real sector growth. The Pakistani economy having a history aging approximately 67 years has observed several chapters in its financial systems. 1950's and 1960's saw the nurturing of Developmental Financial Institutions (DFIs). During the 1980's and 1990's a lot of developmental financial institutions faced problems due to poor management and poor financial reserves. From 2008 onwards there has been declining trend in the Pakistani real and financial markets. Poor security conditions, significant rise in the

prices of consumer and industrial goods, growing population, energy crises, the international financial turmoil and unsound political conditions along with recent natural disasters have also adversely contributed towards the fragile macroeconomic situation in Pakistan. The study presents its readers the hypothesis that there is a significant impact of financial intermediation variables on the economic growth in Pakistan which has observed several impediments in its growth.

A literary reading for the current study includes (Rousseau & Wachtel, 1998), (King & Levine, 1993), (Bencivenga & Smith, 1991), (Greenwood & Jovanovic, 1990), (Gurley & Shaw, 1955), (Jung, 1986) and others. The current study accounts for the long and the short run effects of the financial intermediation on the economy. It focuses on advanced dynamic modeling techniques to observe the effects of intermediation at the macroeconomic level and its relative implications for the expansion of economy.

Knutsen (2004) made a comparison of business systems. According to him, both Pakistan and Germany are classified as bank-based systems. In Pakistan, however, banks cannot perform the functions expected of a sophisticated bank-based system, because they are not as well developed as German banks. While making a comparison of USA and the Philippines, Knutsen (2004) states that are both market-based systems, but the markets in the Philippines are not as effective at providing financial services. Looking at financial constitution, we observe that Pakistan and the Philippines have more in common with each other than their respective bank-based and market-based counterparts. Hence, it is also necessary to distinguish among economies with underdeveloped and developed financial systems. More acknowledged economies such as Japan and Germany are also referred to as Bank Based Financial Systems while the US system is the market Based System. All being success stories, the prevalence of the specified financial system go along with the discussion on the “Timing of Industrialization Theory”.

The commonly accepted conjecture, the timing of industrialization (or TOI) hypothesis, argues that the key distinctions in national financial systems can be tracked back to their individual industrialization phases. The studies conducted by Gerschenkron (1962), and Lazonick and O'Sullivan (1997) also relate the TOI with the prevailing financial system in the respective economy. They modulate that in countries where this procedure started early such as the United Kingdom, the firms were able to finance new investment steadily from internally generated funds or from securities issues in moderately developed financial markets. While the firms in countries where the industrialization process started later, however, faced a dual drawback relative to their sophisticated competitors in early industrializing countries. The first drawback being that internally generated finance was inadequate comparative to the large funds needed for investments in technologies and infrastructure. The second drawback being that market finance was complicated to generate because securities markets were immature and investors were more tending to invest in safer assets such as governmental bonds. According to Aoki and Patrick (1994), only banks could gather the large sums of funds required, take the risks involved in such revolutionary ventures, and sufficiently observe their investments. Once recognized, the bank-based systems than have a strong endurance capacity. This understanding of literature provides sustain for the suggestion that developing countries like Pakistan follow the model of Bank-Based Development.

Knutsen (2004) concludes in his research that the classification on the basis of the bank or market based is system is a stringent way to distinguish the financial system and focuses on the need of a more complex and sophisticated notion of financial systems. Levine (2001) suggests that although the economists and strategy makers have debated the comparative merits of bank based and the market-based financial systems, the classifying of countries on these criteria is not a very productive way to distinguish financial systems. He conducted with a cross-country assessment and indicated that even though overall financial progress is vigorously linked with economic growth, there is no inclined support for either the bank-based or market-based view.

According to Levine (2000) diversified observations exist regarding the influence of financial structure on macro level economic growth. Two aspects are classified by the model. The bank-based view holds that bank-based systems at initial stages of economic development specifically support economic growth to a huge degree than market-based systems. While the market-based aspect stresses that these markets administer main financial services that ignite permutation and long-run growth.

The financial services aspect accentuate the role of banks and markets in researching firms, applying corporate control, developing risk management instruments, and assembling savings of the society for the most constructive task. As such, the financial service aspect concentrates on the quality of the financial services produced by the entire financial system and regards banks and markets as complements rather than substitutes. The analytical validity of the financial structure discussion is rejected by the legal-based view. It asserts that the legal system molds the quality of financial services (for example La Porta et al., 2002). The legal-based view emphasizes that part of financial development proposed by the legal system has serious impact on long-run growth. Political factors are brought in to clarify the relationship between financial and economic development (Fohlin, 2000; Kroszner and Strahan, 2001; Rajan and Zingales, 2003).

A momentous interest in financial intermediation grew in 80-90's years of the recent century because of a series of financial deformities and crunches. One of the probable cause for these distortions is called financial intermediation. An evaluation of sources of financial deformities can be found, in Mishkin (1999). Literature revealed that a rooted macroeconomic theory of financial intermediation is required in order to establish the probability of analysing the problem in its complication apart from the framework that is generally set in microeconomic theory of banking.

Bernanke and Gertler (1987) impart the banking sector into a conventionalized general equilibrium framework to reveal that banks are important to genuine activity because they

give the only accessible passage that links savers and investment projects for which comprehensive assessment and auditing is required. The significance of such models for comprehending financial crises, disintermediation, banking regulation and certain types of monetary policy are also shown by them. Bencivenga and Smith (1991) gave another general equilibrium model with financial intermediation in a constant form which suggest a simple theoretical framework for analyzing different financial regulations of the financial system in the ambience of macroeconomic growth

The economy is affected by the through three separate processes by the larger presence of investment choices through financial intermediation: a accretion in investment efficiency, a contraction in the cost of transmitting capital from genuine lenders to final borrowers, and a revision in the savings rate. As a result of the informational edge possessed by banks in negotiating with borrowers as well as their skill to organize risks as explained above, investment efficiency in the economy should raise.

By combining information relating to firms, industries, and the economy as whole, banks should have the capacity to judge expected returns from investment projects better than individuals and allocate the resources optimally. Financial sector development should also prompt lower costs of financial intermediation. The costs that are represented by the spread between bank borrowing and lending interest rates should fall off with the gain in banks experience, and an increased supply of financial services ends to added competition among the financial service providers. With contracted intermediation costs, a higher share of the savings deposited within banks will find conduit to the end borrowers. The third way is the savings rate in which financial sector development impacts the real economy. However, the sign of this impact is vague.

The capacity of financial intermediaries to mitigate risk through portfolio diversification persuades greater expected returns for savers at any level of risk. This activates the savers to either save more as saving becomes more alluring or to save less as a smaller amount of

saving is now required to achieve a given savings goal. The overall consequence is dependent in particular on the agents' risk preferences. Apart from it, the presence of a household credit may have impact on agents' saving behavior negatively as it allows increased dissaving on the part of households. Eventually, due to contracted intermediation spreads, financial development may conclude in higher real interest rates on deposits.. The impact on the savings rate is cryptic as compared the impact on the demand for investment credit.

The holistic impact of financial intermediation on economic growth is positive till the possible negative effects have not high strength. An evaluation of the corresponding impact of the effects described above requires practical analysis. However, the determination of the direction of causality is a specific problem for the empirical work on the effects of intermediation. Empirical concepts of causality are founded on assessing the momentous layout of events: if one type of event constantly pre-exists another type, it is thought to be causal. This is not like the causation in the theoretical sense as, for example, when both types of events are caused by a third, uninvestigated category. In the case of financial intermediation and economic advancement a strong two directional relationship seems reasonable: financial intermediation supports growth and the raised demand for financial services in an advancing economy persuades growth in the financial sector.

Econometric concepts of mishaps are not much supporting and empirical research is often confined to the study of correlation structures in this situation, the papers by Greenwood and Jovanovic (1990) and Saint-Paul (1992) offer frameworks in which economic and financial progress are determined, thus providing a macroeconomic connection for the theory of financial intermediation. Empirical approaches have been used to assess the impact of financial intermediation on economic activity. An intensive study by King and Levine (1992, 1993 a and b) concluded that a strong correlation existed between the measures of financial intermediation and economic activity, in this series of papers, the authors give multi-country evidence that financial development comes before and forecasts economic growth. Apart from this momentary pattern, the question considering the direction of causality since

unobserved variables may drive both developments and financial markets might expect future real advancements. Atje and Jovanovic (1993) presented a similar study.

Levine (1997) gives a survey of the literature and came to the conclusion that those countries that have with larger banks and more active stock markets evolve rapidly. A promising assertion of the reason of economic growth caused by financial intermediation is proposed and tested by Rajan and Zingales (1998), who carried a logical study based on the assumption that curtailed external financing costs for enterprises, are a result of rooted financial intermediation. In their practical studies, the authors grade industries by their reliance on external financing and then check whether those industries depending densely on external financial sources become strong in countries with more developed financial sectors.

Evaluating a huge sample of developed as well as developing economies, positive connection between financial sector development and the success of externally financed industries is surely found, which backs the validity of the fundamental theoretical consideration.

Dewatripont and Tirole (1994) assert that most of the uninvestigated topics for research correspond to the macroeconomics of intermediated financing. A comprehensible general equilibrium framework is needed in order to study most favorable risk sharing among shareholders, uninsured debt holders and the deposit insurance fund. As the financial intermediation is a component of the financial system, it necessarily corresponds to the macroeconomic development, growth.

The work of Levine (2005) found that for economic growth it is not important whether a financial system is concentrated by banks or securities markets, but on its ability to perform its functions successfully. Literature reviews on the connection between finance and economic growth. Works of Gertler (1988), Pagano (1993), Levine (1997; 2005), Trew (2006), and Demirguc-Kunt and Levine (2008) provide detailed evidence of intermediation in

promoting economic growth. Further literary evidence has been provided consistently. Empirical evidences have also been generated by Beck et al. (2008).

The research work by Badun (2009) provides a review of detailed empirical evidence of the relationship between financial intermediation and economic growth. The study observes the influencing effect of Globalization as moderating variable for the study at the economic tier. The study observes if this imparts mediation in the relationship under study. The inducement of Globalization affect has also resulted in new challenges for the banking industry.

H3 (a): There is significant impact of financial intermediation on economic growth in Pakistani economy.

Banking in Pakistan dates back with the establishment of State Bank of Pakistan in 1948. State Bank of Pakistan serves as the regulatory body for commercial banks and DFIs. The remaining financial institutions are regularized by the Securities and Exchange Commission of Pakistan (SECP). The Pakistani banking sector has observed radical fluctuations in the past 67 years. The studies conducted by Hardy and Patti (2005) and Khan and Qayyum (2007) provide a historical insight of the Pakistani Financial System.

According to Hardy and Patti (2005), the Pakistani banking system has transformed over the past through liberalization, entry of private banks, privatization of public-sector banks, and tightening of prudential regulations. The study also identified that new private domestic banks are the most efficient, and sometimes they out-performed the foreign banks.

Initially, it had significant shortage of funds and high risk due to the prevailing conditions. Absence of appropriate human capital and professionals resulted in poor performance. The private sector was attracted to develop the financial system by setting up different financial institutions. The result was in the form of unhealthy competition and illegal practices. The era

of 1950's and 1960's saw corruption in the financial segment. The nationalization policy in 1974 made all accessible banks nationalized.

These nationalized banks did not help improve the performance rather it worsened. The government protected its employees which resulted in poor quality of banking products. The private sector interpreted it as a negative signal and private as well as foreign investments were curtailed. The reforms in the 1990's were a result of poor performance of the nationalization policy.

The nationalization policy of the Government during the 1971-1990 made the banking sector under governmental regulations. More liberal and market-based reforms have been the highlight of the government since then. Several policy shifts and developments have resulted in the current financial market structure. Since 2000, transactions of merger and acquisition within banks numbered over 40. Expansion of these institutions has been of considerate attention. Alongside financial sector, real sector has been involving itself with it directly.

The financial picture of Pakistan has been changing shape. In the 1970's it was transformed to a nationalized system while in the 1990's financial liberalization was observed. The 1990's liberalization resulted in a more sophisticated and powerful banking infrastructure. The landscape from the 1970's to the 1990's has changed from government owned to the one which is now under the surveillance of the private sector.

Even though the subject area has grave importance, there is absence of a comprehensive study to measure the performance of banking sector in Pakistani banks after the liberalization of 1990's. Iimi (2004) stated that although banking sector development is important at the early stage of economic growth, general liberalization presuming a homogeneous bank role may not necessarily promote growth. He also identified that the privatized banks are the most

efficient, followed by foreign and private banks. Public banks are the least efficient in Pakistan.

These studies help analyze the relationship of financial segment reforms and banks in Pakistan. Empirical and non-empirical tests have been utilized for the studies. The study conducted by Arby (2003) utilized limited data set to discuss the structural and operational performance of banks in Pakistan. This study attempted to analyze the structure and performance of commercial banks in Pakistan under the framework of industrial organization. It implied absence of competitive environment in its true sense in the banking industry. The results were in contradiction to the claim of the State Bank of Pakistan. Analysis of performance also showed that the profitability of state-owned banks deteriorated, especially after mid-1990s. Rizvi (2001) identified that at the institutional level, foreign banks were relatively less efficient than domestic banks and most of the inefficiencies in the system were due to the poor performance of foreign bank while the competition within domestic banks helped improve performance.

H3 (b): There is a significant impact of financial liberalization on the economic growth.

This concludes our literary analysis. The next chapter discusses the methodology utilized in the study to capture the impact of financial intermediation functions at the three identified levels.

Chapter 03

Data Description and Methodology

This section discusses the sample, sources of data, measurement of explained and the explanatory variables and the statistical models employed in the analysis. The study has been conducted on three levels: Firm level, Industry level and macroeconomic level analysis. This section addresses methodological framework, variables and equations used for quantitative assessment at each level.

3.1 Firm Level Data Description

The sample has been collected at three tiers. The data for the firm level analysis has been collected from 130 companies listed on the Karachi Stock Exchange. The annual reports of these 130 companies for a period of 10 years (2004-2013) are collected from multiple sources which include the annual reports published by the companies, company websites and the Karachi Stock Exchange.

The sample has been selected by using the convenience sampling based on the availability of firm level data during the mentioned time frame. Companies with annual data from 2004-2013 are selected from each industry.

The following Table 3.1 presents the classification of industries used in the study. The same classification is reported in SBP Balance Sheet Analysis published by the State Bank of Pakistan.

Table 3.1 List of Industries

S. No	Industry
1	Auto Parts Industry
2	Chemicals Industry
3	Construction Industry
4	Electricity Industry
5	Electronics Industry
6	Engineering Industry
7	Fixed Line Communication Industry
8	Industrial Metals and Mining Industry
9	Industrial Transportation Industry
10	Paper and Board Industry
11	Tobacco Industry
12	Pharmaceutical Industry
13	Oil and Gas Industry
14	Food Industry
15	Textile Industry

Source: State Bank of Pakistan's Balance Sheet Analysis

The population of the study consists of the listed companies in Pakistan. The firms listed under the SECP listing regulations are the population of the study and a sample has been selected from these.

Individual firms listed at the Karachi Stock Exchange serve as the sampling unit of the study. Each firm selected has an annual report from 2004-2013. Secondary data source has been used. Variable are extracted from the annual report of the companies. These annual reports are audited financial statements published by the company.

3.2 Firm Level Variables and Equations for Testing

Generalized functional form of the study at the first level is reported below.

Firm Growth = f (Functions of Financial Intermediation)

$$\text{Firm Growth}_i = \lambda_0 + \sum \lambda_1 \text{FI}_i + \epsilon_i$$

.....Equation 3.1

Where, FI_i represents the functions of financial intermediation. The functions of financial intermediation include the following:

3.2.1 Transaction Cost Function

The relevant transaction costs consist of search, verification, monitoring and enforcement costs (Matthews and Thompson, 2008). The study by Benston and Smith (1976) identify that the presence of the bank lowers the cost of the transaction if:

Transaction costs in the absence of financial intermediary	= $(T_B + T_S)$
Transaction costs in the presence of financial intermediary	= $(T_B^1 + T_S^1)$
Bank charges for reducing transaction related costs	= C
Net benefit due to presence of financial intermediaries	= $(T_B + T_S) - (T_B^1 + T_S^1)$

$$(T_B + T_S) - (T_B^1 + T_S^1) > C$$

Transaction related expenses are of benefit to the firms till the point it exceeds the charges C . Thus, the above equation reflects that utilization of intermediary results in relatively greater benefits than the costs incurred.

3.2.2 Liquidity Assurance Function

Liquidity assurance refers to the assurance provided by the financial intermediary to fund short term financing needs of the firm. Multiple proxies have been used including running finance, markup on running finance, demand finance, commitment fee for revolving credit and bank overdraft. Bryant (1980) and Diamond and Dybvig (1983) models also discuss the

aspect of liquidity assurance. The above mentioned proxies of liquidity assurance have been utilized by firms to assure fulfillment of their liquidity needs.

Liquidity Insurance = Presence of Line of credit/revolving credit facility, Running finance, Markup on running finance, Demand finance, Commitment fee for revolving credit and Bank overdraft.

3.2.3 Delegated Monitoring Function

Delegated monitoring refers to the financial intermediary function in which financial intermediaries designate their representatives in the firm to monitor the board decisions and assure governance mechanism. Diamond (1984) models the benefits of delegated monitoring for firm advantage. Proxies taken to quantify this function utilized by firms include directors of financial intermediary on board, company shares held by financial intermediary and percentage of shares held by a foreign bank. These proxies serve to quantify the function of delegated monitoring.

Delegated Monitoring = Presence of Directors of Financial Intermediary on Board (RNEDs), Shares held by Financial Intermediary and Foreign Bank.

3.2.4 Information Sharing Function

Information sharing coalition between the firm and the financial intermediary helps remove informational asymmetry and provide informational advantage for informed decision making. The firms pay a cost to obtain this coalition with the intermediary and have been quantified using the proxy of bank charges excluding interest expense. Leland and Pyle (1977) and Matthews and Thompson (2008) models the benefits of informational advantage due to financial intermediaries.

Information Sharing Coalition = Presence of Long Term relationship with customers (Advisory Services)

3.2.5 Firm Growth

To measure firm growth, Kirchhoff and Norton (1992) compared the different measures of growth and indicated that they are interchangeable because they produce the same results when tested over a seven-year period. In this study, the firm growth has been quantified using the proxy of total assets as it is a more comprehensive descriptor of firm growth. Carrizosa (2007) also identified use of total assets as a measure of firm growth.

Table 3.2 provides a tabulated description of the research variables.

S. No.	Variable	Definition	Proxy	Notation	Data Source	Used By
1.	Transaction Cost Function	The relevant transaction costs consist of search, verification, monitoring and enforcement costs.	Transaction Cost	TC	Notes to Accounts Company Annual Report	Benston and Smith (1976) Matthews and Thompson (2008)
2.	Liquidity Assurance	Liquidity assurance refers to the assurance provided by the financial intermediary to fund short term financing needs of the firm.	Running finance, markup on running finance, commitment fee for revolving credit and overdraft.	RF, MURF, DF, CFRC, BOD	Notes to Accounts Company Annual Report	Bryant (1980) Diamond and Dybvig (1983)
3.	Information Sharing Coalition	Presence of Long Term relationship with customers (Advisory Services)	Bank excluding expense.	charges interest BC	Notes to Accounts Company Annual Report	Leland and Pyle (1977) Matthews and Thompson (2008)
4.	Delegated Monitoring	Delegated monitoring refers to designation of representatives the intermediary firm to monitor the board decisions and assure governance mechanism.	Directors of financial intermediary on board, company shares held by financial intermediary and percentage of shares held by a foreign bank.	DFIOB, SHFI, FB	Notes to Accounts Company Annual Report	Diamond (1984)

Source: Compiled by the Author

The econometric model for firm level analysis is represented below. It reflects the financial intermediation functions with specific proxies using Panel Data Analysis.

$$\text{Firm Growth}_{i,t} = \delta_0 + \delta_1 (\text{Transaction Cost})_{i,t} + \delta_2 (\text{Running Finance})_{i,t} + \delta_3 (\text{Markup on Running Finance})_{i,t} + \delta_4 (\text{Demand Finance})_{i,t} + \delta_5 (\text{Commitment Fee for Revolving Credit})_{i,t} + \delta_6 (\text{Bank Overdraft})_{i,t} + \delta_7 (\text{Directors of Financial Intermediary on Board})_{i,t} + \delta_8 (\text{Shares held by Financial Intermediary})_{i,t} + \delta_9 (\text{Foreign Bank})_{i,t} + \delta_{10} (\text{Bank Charges})_{i,t} + \varepsilon_{i,t}$$

.....Equation 3.2

Where;

Transaction cost = it is the costs consisting of search, verification, monitoring and enforcement costs.

Running Finance = it is a revolving finance facility to withdraw amounts to the extent of a limit. The borrower can withdraw and repay the amount as many times as he wishes to. This is obtained from the notes to the accounts with the title of running finance or revolving credit facility used.

Markup on Running Finance = the mark-up required to be paid on the amount which is withdrawn as a revolving credit in running finance used on monthly basis. Its value is mentioned in notes to the accounts adjacent to the value of running finance.

Demand Finance = this is a medium term credit facility available to establish new projects with a repayment term of more than one year, which can be paid back in installments. It is reported in the notes to the accounts usually in description of current liabilities.

Commitment Fee for Revolving Credit = revolving credit is a line of credit where the customer pays a commitment fee and is then allowed to use the funds when they are needed. It is usually used for operating purposes and can fluctuate each month depending on the

customer's current cash flow needs. The commitment fee paid in this regard is disclosed in the notes to the accounts.

Bank Overdraft = a bank overdraft is flexible borrowing facility on a bank current account which is repayable on demand. A bank overdraft does not actually result in cash flowing into a business. Instead the business is allowed to let its bank account become “overdrawn” – i.e. in the red, up to a maximum amount. It is reported in current liabilities section of the balance sheet.

Directors of Financial Intermediary on Board = it refers to an individual or a group of individuals that act as the representatives of the financial intermediary on the company board. They participate in corporate management related policies and to make decisions on major company issues. They are nominated by the financial institution as the representative non-executive directors on company boards. They attend board meetings and can be identified in the annual reports.

Shares held by Financial Intermediary = it refers to the institutional ownership which reflects the ownership stake in a company that is held by large financial institutions and can exert considerable influence upon its management. The more the proportion of shares held by the financial intermediaries, the greater influence can be exerted by the financial intermediary. Its proportion is mentioned in the shareholding pattern of the annual report.

Foreign Bank = it reflects the ownership stake of a foreign financial intermediary. It is mentioned in the section of shareholding pattern in the annual report.

Bank Charges = the benefit of information sharing is high and the relationship bank finds it optimal to share information whenever is feasible. Sharing information ex-ante is beneficial because it reduces the adverse selection problem. The bank charges excluding the interest expenses account for the advisory services for the purpose of information sharing by the financial intermediary.

3.3 Statistical and Econometric Tests for Firm Level with their Significance

This study uses a panel data framework to analyze the relationship between proxies for firms' exposure of financial intermediation functions and explanatory variable of growth. Panel data has several distinct advantages over simple cross-sectional or time series data as discussed by Hsiao (1986). The pooled ordinary least square (OLS) is a better option to use as OLS will provide consistent and efficient estimates of the coefficients of the explanatory variable. For example, panel data allows us to account for unobserved heterogeneity and provides us large data points that results in more degrees of freedom and lower collinearity among explanatory variables. If these unobservable effects are not isolated, they will inflate the error term of regression like it happens in the case of omitted variables. To deal with such problems, panel data offers to use either fixed effects or random effects models. To choose between fixed-effects model and random-effects model in an objective manner, Hausman (1978) suggested a test which has a null hypothesis that fixed effects and random effects estimators do not differ systematically. If the null hypothesis is rejected, then the fixed effects model is the best one.

3.4 Industry Level Data Description and Statistical Equations for Testing

For the Industrial tier, 130 companies are grouped into 15 industries according to the classification made by the SBP-BSA. The list of these industries has been discussed in the literature review. The firm level data is used to create industry wise panels. The data for each firm in the industry is also ranged from 2004-2013. Again panel data testing has been performed and then the determination of fixed and variable effect model has been observed across the 15 industries.

The data is then used to observe the impact of specific financial intermediation functions in each industry. Each industry panel is observed individually to study the impact of financial

intermediation functions in each industry as being different from other industries or being similar as in other industries. Industrial dummy is created for this purpose as a reference industry to compare it with other industries.

$$\text{Industry Growth}_{i,t} = \delta_0 + \delta_1 (\text{Transaction Cost})_{i,t} + \delta_2 (\text{Running Finance})_{i,t} + \delta_3 (\text{Markup on Running Finance})_{i,t} + \delta_4 (\text{Demand Finance})_{i,t} + \delta_5 (\text{Commitment Fee for Revolving Credit})_{i,t} + \delta_6 (\text{Bank Overdraft})_{i,t} + \delta_7 (\text{Directors of Financial Intermediary on Board})_{i,t} + \delta_8 (\text{Shares held by Financial Intermediary})_{i,t} + \delta_9 (\text{Foreign Bank})_{i,t} + \delta_{10} (\text{Bank Charges})_{i,t} + \delta_{11} \text{Specific Industrial Dummy}_i + \varepsilon_{i,t}$$

$$\text{Industry Growth}_{it} = \delta_0 + \delta_1 \text{TC}_{i,t} + \delta_2 \text{RF}_{i,t} + \delta_3 \text{MURF}_{i,t} + \delta_4 \text{DF}_{i,t} + \delta_5 \text{CFRC}_{i,t} + \delta_6 \text{BOD}_{i,t} + \delta_7 \text{DFIOB}_{i,t} + \delta_8 \text{SHFI}_{i,t} + \delta_9 \text{FB}_{i,t} + \delta_{10} \text{BC}_{i,t} + \delta_{11} \text{Specific Industrial Dummy}_i + \varepsilon_{i,t}$$

.....Equation 3.3

Lastly, the moderating effect of financial intermediation functions across different industries is examined using the industry-variable interactive term. The effect of Industry-Variable interactive terms reflecting the influence of each variable in each reference industry being significantly different from other industries or not is observed.

$$\text{Industry Growth}_{i,t} = \delta_0 + \delta_1 (\text{Transaction Cost})_{i,t} + \delta_2 (\text{Running Finance})_{i,t} + \delta_3 (\text{Markup on Running Finance})_{i,t} + \delta_4 (\text{Demand Finance})_{i,t} + \delta_5 (\text{Commitment Fee for Revolving Credit})_{i,t} + \delta_6 (\text{Bank Overdraft})_{i,t} + \delta_7 (\text{Directors of Financial Intermediary on Board})_{i,t} + \delta_8 (\text{Shares held by Financial Intermediary})_{i,t} + \delta_9 (\text{Foreign Bank})_{i,t} + \delta_{10} (\text{Bank Charges})_{i,t} + \delta_{11} \text{Industry-Variable Interactive Term}_i + \varepsilon_{i,t}$$

$$\text{Industry Growth}_{it} = \delta_0 + \delta_1 \text{TC}_{i,t} + \delta_2 \text{RF}_{i,t} + \delta_3 \text{MURF}_{i,t} + \delta_4 \text{DF}_{i,t} + \delta_5 \text{CFRC}_{i,t} + \delta_6 \text{BOD}_{i,t} + \delta_7 \text{DFIOB}_{i,t} + \delta_8 \text{SHFI}_{i,t} + \delta_9 \text{FB}_{i,t} + \delta_{10} \text{BC}_{i,t} + \delta_{11} \text{Industry-Variable Interactive Term}_i + \varepsilon_{i,t}$$

.....Equation 3.4

3.5 Macro Economic Level Data Description, Variables and Statistical Equations for Testing Macro Level Variables

This section discusses the methodology used for the third tier of the study. Literature identifies that Mukherjee and Naka (1995) and Zhao (1999) employ a vector error correction model (VECM) to investigate the relationship among variables in long run. While, in the Pakistani context, VECM has been used by Nishat et al. (2004) and Hussain and Mahmood (2001) to investigate the long-run causal relationship. The study by Mishra (2004) investigates the long-run dynamic causal relationship by employing the vector auto regression (VAR) technique. This section utilizes the technique used by Akmal (2007) who investigates the relationship by employing the autoregressive distributed lag (ARDL) approach to observe cointegration among variables in the long run. Later, this section applies the Granger causality test to examine the direction of the relationships.

Cihak, Demirguc-Kunt, Feyen and Levine (2013) describe the Global Financial Development Database and compared financial systems around the world. This study investigates the long-term dynamic interaction between the Macro Economic Financial Intermediation Variables and Economic Growth by employing annual data from 1960 to 2013. The macroeconomic financial intermediation variables used include the following as a proxy for the representation of financial intermediation at the macroeconomic level. These are generic in nature and frequently used in literature. The Bank Credit to Bank Deposit (BCTOBD), Bank Deposit to GDP (BDTOGDP), Bank Private Credit to GDP (BPCTOGDP), Central Bank Assets to GDP (CBATOGDP), Deposit Money Bank Assets to GDP (DMBATOGDP) and Liquid Liabilities to GDP (LLTOGDP). For the endogenous variable i.e. economic growth, GDP US\$ (GDP/Capita \$) Per Capita has been utilized, this gives a more compact description of growth in the economy.

To examine the relationship among indicators of financial intermediation and economic growth following model has been tested.

$$\text{LnGDP}_t = \beta_0 + \beta_1 \text{LnBCTOBD}_t + \beta_2 \text{LnBD}_t + \beta_3 \text{LnBPC}_t + \beta_4 \text{LnCBA}_t + \beta_5 \text{LnDMBA}_t + \beta_6 \text{LnLL}_t + \beta_7 \text{StructuralDummy}_t + \mu_t$$

.....Equation 3.5

Where;

GDP _t	=	Gross Domestic Product in time “t”
BCTOBD _t	=	Bank Credit to Bank Deposit in time “t”
BD _t	=	Bank Deposit in time “t”
BPC _t	=	Bank Private Credit in time “t”
CBA _t	=	Central Bank Assets in time “t”
DMBA _t	=	Deposit Money Bank Assets in time “t”
LL _t	=	Liquid Liabilities in time “t”
Structural Dummy	=	Structural Dummy for Financial Liberalization
		D=0 (Pre Liberalization Phase 1960-1990)
		D=1 (Post Liberalization Phase 1991-2013)

There are several methods available to test for the existence of the long-run equilibrium relationship among time-series variables. The most widely used methods include Engle and Yoo (1987) test, fully modified OLS procedure of Phillips and Hansen’s (1990), maximum likelihood based Johansen (1988,1991) and Johansen-Juselius (1990) tests. These methods require that the variables in the system are integrated of order one I(1). In addition, these methods suffer from low power and do not have good small sample properties. Due to these problems, a newly developed autoregressive distributed lag (ARDL) approach to cointegration has become popular in recent years. This study employs autoregressive distributed lag approach (ARDL) to cointegration following the methodology proposed by Pesaran and Shin (1996). This methodology is chosen as it has certain advantages on other cointegration procedures. For example, it can be applied regardless of the stationary properties of the variables in the sample.

Secondly, it allows for inferences on long-run estimates which are not possible under alternative cointegration procedures. Finally, ARDL Model can accommodate greater number of variables in comparison to other Vector Autoregressive (VAR) models.

First of all data has been tested for unit root. This testing is necessary to avoid the possibility of spurious regression as Ouattara (2004) reports that bounds test is based on the assumption that the variables are I(0) or I(1) so in the presence of I(2) variables the computed F-statistics provided by Pesaran et al. (2001) becomes invalid. Similarly other diagnostic tests are applied to detect serial correlation, heteroscedasticity, conflict to normality.

If data is found I(0) or I(1) then the ARDL approach to co-integration is applied which consists of three stages. In the first step the existence of a long-run relationship between the variables is established by testing for the significance of lagged variables in an error correction mechanism regression. Then the first lag of the levels of each variable are added to the equation to create the error correction mechanism equation and a variable addition test is performed by computing an F-test on the significance of all the lagged variables. The second stage is to estimate the ARDL form of equation where the optimal lag length is chosen according to one of the standard criteria such as the Akaike Information or Schwartz Bayesian. Then the restricted version of the equation is solved for the long-run solution.

An ARDL representation of above equation is as below:

$$\text{LnGDP}_t = \beta_0 + \sum \psi_i \text{LnGDP}_{t-1} + \sum \beta_i \text{LnBCTOBD}_{t-1} + \sum \lambda_i \text{LnBPC}_{t-1} + \sum \delta_i \text{LnCBA}_{t-1} + \sum \varphi_i \text{LnDBMA}_{t-1} + \sum \eta_i \text{LnLL}_{t-1} + \sum \gamma_i \text{LnPC}_{t-1} + \sum \zeta_i \text{DUMMY} + \mu_t$$

.....Equation 3.6

Where i ranges from 1 to p

The third stage entails the estimation of the error correction equation using the differences of the variables and the lagged long-run solution, and determines the speed of adjustment of returns to equilibrium.

$$\Delta \text{LnGDP}_t = \beta_0 + \sum \beta_i \Delta \text{LnBCTOBD}_{t-1} + \sum \lambda_i \Delta \text{LnBPC}_{t-1} + \sum \delta_i \Delta \text{LnCBA}_{t-1} + \sum \varphi_i \Delta \text{LnDBMA}_{t-1} + \sum \eta_i \Delta \text{LnLL}_{t-1} + \sum \gamma_i \Delta \text{LnPC}_{t-1} + \sum \zeta_i \text{DUMMY} + \text{ECM} + \mu_t$$

.....Equation 3.7

Finally, stability of short-run and long-run coefficients is examined by employing cumulative sum (CUSUM) and cumulative sum of squares (CUSUMSQ) tests. The CUSUM and CUSUMSQ statistics are updated recursively and plotted against the break points. If the plots of CUSUM and CUSUMSQ statistics stay within the critical bonds of 5% level of significance, the null hypothesis of all coefficients in the given regression are stable cannot be rejected.

The next section analyses the results using the methodology developed in this section.

Chapter 04

Results and Discussions

This section reports the descriptive statistics of the financial intermediation functions and firm growth. The next part discusses Pearson's Correlation between financial intermediation functions and firm growth. Followed by this is firm specific impact of financial intermediation functions on growth using panel data.

In the second part, industry wise impact of financial intermediation functions on industry growth using panel data is observed. In this section, also the differentiation of impact of financial intermediation across different industries is observed. The study also empirically evaluates the impact of intermediary functions and industry-intermediary function interactive term in different industries.

In the third tier, the macro economic impact of macro level financial intermediation variables on economic growth is considered.

4.1 Descriptive Statistics

Table 4.1 provides the descriptive statistics for the variables of the study at the firm level. Table 4.1 (A) provides the descriptive for the transaction cost variable and the liquidity assurance variable.

Table 4.1 (A) Descriptive Statistics

Transaction Cost Variable		Liquidity Assurance Variables				
Transaction Cost		Running Finance	Mark Up on Running Finance	Demand Finance	Commitment fee for Revolving Credit	Bank Over Draft
Mean	15.017	12.620	10.071	0.683	0.038	0.347
Median	17.826	18.735	11.000	0.000	0.000	0.000
Maximum	23.199	24.942	32.000	21.416	8.000	18.064
Minimum	0.000	0.000	0.000	0.000	0.000	0.000
Std. Dev.	6.885	9.738	9.483	3.500	0.532	2.276

Table 4.1 (A) reports that the mean value of the transaction cost variable is 15.017 million rupees while its standard deviation has been reported as 6.885. For the liquidity assurance variables, the variable of running finance has a mean value of 12.620 million rupees and a standard deviation of 9.738, mark up on running finance has a mean value of 10.071 percent and a standard deviation of 9.483, demand finance has a mean value of 0.683 million rupees and a standard deviation of 3.500, commitment fee for revolving credit has a mean of 0.038 million rupees and a standard deviation of 0.532 while bank overdraft has a mean value of 0.347 million rupees and a standard deviation of 2.276.

Table 4.1 (B) provides the descriptive for the delegated monitoring variables and the information sharing coalition variables. The descriptive statistics for the total assets as a reflection of growth has also been described.

Table 4.1 (B) Descriptive Statistics

	Delegated Monitoring Variables			Information Sharing Coalition Variable	Firm Growth Variable
	Directors of Financial Intermediary on Board	Shares held by Financial Intermediary	Foreign Bank	Bank Charges	Total Assets
Mean	2.000	4.387	1.963	11.609	18.548
Median	2.000	0.000	0.000	14.431	21.571
Maximum	7.000	51.00	9.500	22.924	26.749
Minimum	1.000	0.000	0.000	0.000	0.000
Std. Dev.	2.974	8.115	9.545	6.313	7.980

Table 4.1 (B) report that the mean value of the delegated monitoring variables, Directors of financial intermediary on board has a mean value of 2 directors, shares held by financial intermediaries has a mean value of 4.387 percent of the total shares outstanding with a standard deviation of 8.115, involvement of foreign bank has a mean value of 1.963 percent shares held and a standard deviation of 9.545. For the information sharing coalition variable, the variable of bank charges has a mean value of 11.609 million rupees and a standard

deviation of 6.313. The variable of total assets has a mean value of 18.548 million rupees while its standard deviation is 7.980.

4.2 Correlation Matrix

Table 4.2 provides the correlation statistics for the variables of the study. Table 4.2 (A) provides the Pearson's Correlation results of the transaction cost and the liquidity assurance variables and total assets. The correlation table identifies that there exists a strong positive correlation between transaction cost and firm level growth. The correlation coefficient for the relationship between transaction cost and firm growth has a value of 0.837 which is statistically significant at 1% level of confidence. The correlation coefficient between liquidity assurance and growth also finds existence of significantly positive relationship.

Table 4.2 (A) Correlations

		Transaction Cost	Running Finance	Markup on Running Finance	Demand Finance	Commitment Fee for Revolving credit	Bank Over Draft
Transaction Cost	Pearson Correlation	1	.562**	.477**	.100**	0.021	.062*
	Sig. (2-tailed)		0	0	0	0.441	0.027
Running Finance	Pearson Correlation	.562**	1	.800**	.133**	0.005	.103**
	Sig. (2-tailed)	0		0	0	0.868	0
Markup on Running Finance	Pearson Correlation	.477**	.800**	1	.146**	-0.032	.111**
	Sig. (2-tailed)	0	0		0	0.254	0
Demand Finance	Pearson Correlation	.100**	.133**	.146**	1	-0.014	.263**
	Sig. (2-tailed)	0	0	0		0.611	0

Commitment Fee for Revolving credit	Pearson Correlation	0.021	0.005	-0.032	-0.014	1	-0.011
	Sig. (2-tailed)	0.441	0.868	0.254	0.611		0.691
Bank Over Draft	Pearson Correlation	.062*	.103**	.111**	.263**	-0.011	1
	Sig. (2-tailed)	0.027	0	0	0	0.691	
Directors of Financial Intermediary on Board	Pearson Correlation	.319**	.213**	.180**	-0.012	-0.036	-0.042
	Sig. (2-tailed)	0	0	0	0.669	0.2	0.133
Shares held by Financial Intermediary	Pearson Correlation	.213**	.119**	.113**	.075**	0.009	-0.022
	Sig. (2-tailed)	0	0	0	0.007	0.745	0.424
Foreign Bank Financing	Pearson Correlation	.058*	.085**	.099**	0.019	-0.013	-0.031
	Sig. (2-tailed)	0.038	0.002	0	0.489	0.63	0.266
Bank Charges Excluding Interest Expense	Pearson Correlation	.748**	.570**	.458**	.115**	0.048	.079**
	Sig. (2-tailed)	0	0	0	0	0.084	0.005
Total Assets	Pearson Correlation	.837**	.493**	.401**	.076**	0.02	0.043
	Sig. (2-tailed)	0	0	0	0.006	0.475	0.119

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

* . Correlation is significant at the 0.05 level (2-tailed).

The Table 4.2(A) shows that the transaction cost has a significant strong positive correlation with firm level growth. The variables for liquidity assurance have a simple positive correlation. The proxy of running finance, markup on running finance and demand finance

has a significant correlation while the proxy commitment fee for revolving credit and bank overdraft has an insignificant correlation coefficient.

Table 4.2 (B) provides the Pearson's Correlation results of the delegated monitoring variable and information sharing coalition with growth measured as total assets. The correlation table identifies that there exists a positive correlation between delegated monitoring variables and growth. The correlation coefficient for the relationship between information sharing coalitions and firm growth has a strong positive correlation which is statistically significant at 1% level of confidence. The correlation coefficient between liquidity assurance and growth also finds existence of significant positive relationship.

Table 4.2 (B) Correlations

		Directors of Financial Intermediary on Board	Shares held by Financial Intermediary	Foreign Bank Financing	Bank Charges Excluding Interest Expense	Total Assets
Transaction Cost	Pearson Correlation	.319**	.213**	.058*	.748**	.837**
	Sig. (2- tailed)	0	0	0.038	0	0
Running Finance	Pearson Correlation	.213**	.119**	.085**	.570**	.493**
	Sig. (2- tailed)	0	0	0.002	0	0
Markup on Running Finance	Pearson Correlation	.180**	.113**	.099**	.458**	.401**
	Sig. (2- tailed)	0	0	0	0	0
Demand Finance	Pearson Correlation	-0.012	.075**	0.019	.115**	.076**
	Sig. (2- tailed)	0.669	0.007	0.489	0	0.006
Commitment Fee for Revolving credit	Pearson Correlation	-0.036	0.009	-0.013	0.048	0.02
	Sig. (2- tailed)	0.2	0.745	0.63	0.084	0.475

Bank Over Draft	Pearson Correlation	-0.042	-0.022	-0.031	.079**	0.043
	Sig. (2-tailed)	0.133	0.424	0.266	0.005	0.119
Directors of Financial Intermediary on Board	Pearson Correlation	1	.385**	.176**	.291**	.372**
	Sig. (2-tailed)		0	0	0	0
Shares held by Financial Intermediary	Pearson Correlation	.385**	1	0.037	.149**	.193**
	Sig. (2-tailed)	0		0.18	0	0
Foreign Bank Financing	Pearson Correlation	.176**	0.037	1	.127**	.107**
	Sig. (2-tailed)	0	0.18		0	0
Bank Charges Excluding Interest Expense	Pearson Correlation	.291**	.149**	.127**	1	.703**
	Sig. (2-tailed)	0	0	0		0
Total Assets	Pearson Correlation	.372**	.193**	.107**	.703**	1
	Sig. (2-tailed)	0	0	0	0	

** . Correlation is significant at the 0.01 level (2-tailed).
* . Correlation is significant at the 0.05 level (2-tailed).

The Table 4.2 (B) shows that the proxy of delegated monitoring directors of intermediary on board has a significant positive correlation with firm level growth. While other proxies shares held by financial intermediary and foreign bank financing have a weak significant correlation coefficient. Lastly, the variable for information sharing coalition represented by the proxy bank charges has a strong positive correlation with growth.

The analysis of correlation among the independent variables of financial intermediation functions shows that there is no strong correlation in between the independent variables. Thus there is a lean possibility of multi-collinearity amongst the independent variables. The correlation tables show that the proxies of all the financial intermediation functions on an overall scale are correlated with the dependent variable of growth at the firm level.

4.3 Firm Level Analysis - Company Wise Panel Data Results

The following section investigates company wise panel data to empiricise the impact of financial intermediation on firm growth. Table 4.3 reports the results of the common effect model.

4.3.1 Company Wise Panel - Common Effect Model

Table 4.3

Common Effect Model

Variables	Coefficient	t-Statistic	Prob.
C	3.481	11.873	0.000
Transaction Cost	0.800	28.831	0.000
Running Finance	0.019	0.879	0.379
Markup on Running Finance	-0.033	-1.606	0.108
Demand Finance	-0.012	-0.359	0.719
Commitment Fee for Revolving credit	0.010	0.048	0.961
Bank Over Draft	-0.011	-0.219	0.826
Directors of Financial Intermediary on Board	0.292	6.508	0.000
Shares held by Financial Intermediary	-0.018	-1.205	0.228
Foreign Bank Financing	0.025	2.011	0.044
Bank Charges Excluding interest Expense	0.199	6.803	0.000
R-squared	0.726		
Adjusted R-squared	0.724		
F-statistic	310.3		
Prob(F-statistic)	0.000		

The results of the common effect model has an adjusted R-squared of 0.724 reflecting that the explanatory variables of financial intermediation cause 72.4% variation in firm level growth. The model has been found statistically fit having F-statistic of 310.3904 and a probability of 0.000. Thus, the set of the identified financial intermediation functions explains a significant portion of firm level growth.

The results indicate that the payment of transaction cost by the firms result in firm growth. The coefficient has a statistically significant value of 0.800. This reflects that the transaction costs incurred by the company result in increasing their growth.

The results identify an insignificant impact of liquidity assurance functions on firm growth. All the proxies for liquidity assurance reflect an insignificant impact on firm growth.

The representation of financial intermediary directors on board identifies a positive significant impact on firm growth. The presence of directors of intermediary on board as representative non-executive directors has been evident in literature in improving financial performance of firms. Thus, the variable of representation of directors of financial intermediaries on board is statistically positive and significant. The involvement of a foreign bank also reflects a positive and significant impact on firm growth. The Pakistani Corporate Model is a closed corporate model since major source of financing is debt from the commercial banks. The results are also in alignment when the foreign bank is involved. Thus, the function of delegated monitoring observes significant positive impact on firm level growth. The coefficient value for directors of financial intermediary on board is 0.292 and for the involvement of foreign bank it is 0.025.

The bank charges paid by the firm for utilization of services also has a significant positive impact on firm level growth. This serves as the reflection of utilization of information sharing coalition function of the banks. For bank charges paid for financial services from the bank

has a coefficient value of 0.199. Empirically, a significantly positive impact has been identified on the firm level growth. The firms that utilize intermediary services and create an information sharing coalition are found to have a significant positive impact on their growth.

There is a possibility that intercept may not be same across the companies so fixed effect model has been used to confirm this cross section effect. The results of the fixed effect model are reported as Table 4.4. Since the Fixed effect is identified in the analysis, these results are more significant and Fixed Effects results have been discussed next.

4.3.2 Company Wise Panel - Fixed Effect Testing

Table 4.4

Fixed Effect Model

Variable	Coefficient	t-Statistic	Prob.
C	3.090	9.673	0.000
Transaction Cost	0.726	22.34	0.000
Running Finance	0.080	3.049	0.002
Markup on Running Finance	0.026	1.100	0.271
Demand Finance	0.066	1.602	0.109
Commitment Fee for Revolving credit	0.327	1.277	0.201
Bank Over Draft	-0.003	-0.061	0.950
Directors of Financial Intermediary on Board	0.050	0.996	0.319
Shares held by Financial Intermediary	-0.013	-0.771	0.440
Foreign Bank Financing	0.007	0.545	0.585
Bank Charges Excluding interest Expense	0.234	6.525	0.000
Adjusted R-squared	0.799		
F-statistic	38.05		
Prob (F-statistic)	0.000		

The table 4.5 signifies use of Fixed Effect Model as a preference over Common Effect Model, it is better to derive results on the basis of Fixed Effect Model. The above table 4.4 reports Fixed Effect Model Results and it shows that transaction costs have a significant impact on firm level growth. The Fixed Coefficient Model shows that transaction costs, liquidity assurance and information sharing coalitions between financial intermediaries and

the firm have a significant impact on firm growth. The result shows that the effect of financial intermediation functions is fixed across the firm specific data. Further, the firm level results show that the variable of Transaction Cost has a coefficient value of 0.726. The transaction cost variable has a positive impact on firm growth. The results are in alignment with the work of Benston and Smith (1976) which stated that the existence of financial intermediaries results in positive influence on growth in the context of transaction costs. Running finance variable also has a positive significant coefficient of 0.080. The firms that utilized running finance as a liquidity facility are found to have positive impact on firm growth. The results are in alignment with Diamond and Dybvig (1983) which provide evidence of positive impact of liquidity assurance on firm growth. Lastly, the information sharing by the intermediaries with firms has a positive impact on firm growth. Firms that utilize this information sharing function provided by the intermediaries have higher growth levels. These results are in alignment with Leland and Pyle (1977) who provide evidence of positive influence of information sharing coalition on firm growth. The coefficient has a significant positive value of 0.234. These results are in synchronization with the framework laid down by Mathews and Thomson (2008). However, the results for delegated monitoring show that no proxy for it has a significant impact on growth. This identifies a poor governance mechanism adopted by the firms. Although the Corporate Governance Act 2012 is present, still its application in its true sense and its effects has not been statistically observed in the study. Primary reason that may be attributed to this statistical fact is that the Corporate Governance Act was developed in 2010 and revised in 2012 and firms were not required to follow it prior to this. Thus, it may take some time to reflect its effectiveness.

The results of the Redundant Fixed Effect Test in Table 4.5 provide that the Fixed Effect Model is significantly different from Common Coefficient Model and it should be preferred.

Table 4.5 Redundant Fixed Effect Testing

Effects Test	Statistic	d.f.	Prob.
Cross-section F	4.7837	(129,1157)	0.0000
Cross-section Chi-square	554.8482	129	0.0000

4.3.3 Company Wise Panel - Hausman Test

Still this is another argument that intercept behaves randomly across the firms so Hausman Test is used to decide between Fixed Effect Model and the Random Effect Model. Table 4.6 reports that Hausman statistics is significant so Fixed Effect Model is a right choice.

Table 4.6 **Hausman Test**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	57.192	11	0.000

This verifies that the each of the firm has a fixed intercept which is different from other firms.

4.4 Industry Level Analysis - Industry Wise Panel Data Results

The following section examines Industry wise panel data to explain the results of impact of financial intermediation on industry level growth. The company specific Fixed Effect has its significance reported in Table 4.4 but whether the behavior is constant across the industries has also been testified. The study investigates industry wise difference between the intercepts. The results are reported in Table 4.7 which tabulate the Industry Wise Panel Fixed Effect Model.

4.4.1 Industry Wise Panel - Fixed Effect Testing

Table 4.7 **Fixed Effect Model**

Variable	Coefficient	t-Statistic	Prob.
C	3.857	13.111	0.000
Transaction Cost	0.757	26.583	0.000
Running Finance	0.013	0.609	0.542
Markup on Running Finance	0.007	0.347	0.728
Demand Finance	-0.008	-0.236	0.813
Commitment Fee for Revolving credit	0.033	0.146	0.883
Bank Over Draft	0.003	0.071	0.942
Directors of Financial Intermediary on Board	0.264	5.879	0.000

Shares held by Financial Intermediary	-0.024	-1.610	0.107
Foreign Bank Financing	0.020	1.661	0.096
Bank Charges Excluding interest Expense	0.204	6.710	0.000
Adjusted R-squared	0.738		
F-statistic	147.83		
Prob (F-statistic)	0.000		

The above table 4.7 shows that financial intermediation functions have a significant impact on industry level growth as well as was evident in the firm level analysis. The Fixed Coefficient Model shows that transaction costs, delegated monitoring and information sharing coalitions between financial intermediaries and the firm have a significant impact on industry level growth. The discussion made by Mathews and Thomson (2008) provide support to the statistical results of this study. The model is statistically significant and explains 73.8 percent variation in growth with the utilized financial intermediation functions.

The result shows that the effect of financial intermediation functions is fixed in each industry. Further, the industry level results show that the variable of transaction cost has a coefficient value of 0.757. The transaction cost variable has a positive impact on industry growth. The delegated monitoring variable also has a positive significant coefficient of 0.264. The industries where the monitoring of firms is partially delegated to financial intermediaries are found to have positive impact on growth. The performance improves with the presence of monitors on board of companies in form of nominations from financial intermediaries. Lastly, the information sharing by the intermediaries with firms in an industry has a positive impact on firm growth. The utilization of information sharing function provided by the intermediaries result in higher growth levels. The coefficient has a significant positive value of 0.204.

The results of the Redundant Fixed Effect Test in Table 4.8 provide that the Fixed Effect Model is significantly different from Common Coefficient Model and it should be preferred in the case of industry wise panel data.

Table 4.8 **Redundant Fixed Effect Testing**

Effects Test	Statistic	d.f.	Prob.
Cross-section F	6.230919	(14,1272)	0.0000
Cross-section Chi-square	86.096348	14	0.0000

4.4.2 Industry Wise Panel - Hausman Test

To further verify whether the intercept behaves randomly across the industries, Hausman Test is used to decide between Fixed Effect Model and the Random Effect Model. Table 4.9 reports that Hausman statistics is significant so Fixed Effect Model is a right choice for the industry wise panel.

Table 4.9 **Hausman Test**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	34.763599	11	0.0003

Thus, it verifies that the intercept for each industry is different from other industries. The study further investigates which of the industries are different from each other by creating a reference dummy for each industry.

4.5 Difference of Impact of Financial Intermediation Functions across different Industries

This section discusses the impact of financial intermediation functions on growth levels in different industries. Table 4.10 reports industry wise effect of four industries namely; Auto Parts, Chemicals, Construction and Electricity Industry. The table describes whether other industries have a significant difference from the respective reference industry.

Table 4.10

INDUSTRY WISE EFFECT WITH REFERENCE DUMMY

S. No	Reference Dummy	AUTOPARTS Industry		CHEMICALS Industry		CONSTRUCTION Industry		ELECTRICITY Industry	
		Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
1	C	4.7012	0.0000	4.5345	0.0000	4.1290	0.0000	4.3956	0.0000
2	AUTOPARTS Industry	---	---	0.1667	0.7846	0.5722	0.3317	0.3056	0.6893
3	CHEMICALS Industry	-0.1667	0.7846	---	---	0.4055	0.4218	0.1389	0.8417
4	CONSTRUCTION Industry	-0.5722	0.3317	-0.4055	0.4218	---	---	-0.2666	0.6970
5	ELECTRICITY Industry	-0.3056	0.6893	-0.1389	0.8417	0.2666	0.6970	---	---
6	ELECTRONICS Industry	-1.0831	0.4398	-0.9163	0.5017	-0.5109	0.7038	-0.7774	0.5883
7	ENGINEERING Industry	-0.8132	0.3036	-0.6465	0.3739	-0.2410	0.7380	-0.5076	0.5571
8	FIXED LINE COMMUNICATION Industry	2.3701	0.0084	2.5368	0.0024	2.9423	0.0004	2.6757	0.0048
9	INDUSTRIAL METALS AND MINING Industry	-0.9349	0.3059	-0.7682	0.3719	-0.3627	0.6643	-0.6293	0.5211
10	INDUSTRIAL TRANSPORTATION Industry	-1.7681	0.0917	-1.6014	0.1119	-1.1959	0.2244	-1.4625	0.1860
11	PAPER AND BOARD Industry	-4.6306	0.0000	-4.4638	0.0000	-4.0584	0.0000	-4.3249	0.0001
12	TOBACCO Industry	-1.8761	0.0387	-1.7094	0.0449	-1.3039	0.1200	-1.5705	0.1090
13	PHARMACEUTICAL Industry	-1.0179	0.2091	-0.8511	0.2655	-0.4457	0.5501	-0.7122	0.4292
14	OIL AND GAS Industry	-1.1119	0.0889	-0.9451	0.1187	-0.5397	0.3527	-0.8062	0.2910
15	FOOD Industry	0.3425	0.5268	0.5092	0.2814	0.9147	0.0402	0.6481	0.3292
16	TEXTILE Industry	-2.0679	0.0001	-1.9012	0.0000	-1.4957	0.0002	-1.7623	0.0060
17	Transaction Cost	0.7576	0.0000	0.7576	0.0000	0.7576	0.0000	0.7576	0.0000
18	Running Finance	0.0132	0.5423	0.0132	0.5423	0.0132	0.5423	0.0132	0.5423
19	Markup on Running Finance	0.0073	0.7283	0.0073	0.7283	0.0073	0.7283	0.0073	0.7283
20	Demand Finance	-0.0083	0.8131	-0.0083	0.8131	-0.0083	0.8131	-0.0083	0.8131
21	Commitment Fee for Revolving credit	0.0337	0.8834	0.0337	0.8834	0.0337	0.8834	0.0337	0.8834
22	Bank Over Draft	0.0038	0.9428	0.0038	0.9428	0.0038	0.9428	0.0038	0.9428
23	Directors of Financial Intermediary on Board	0.2641	0.0000	0.2641	0.0000	0.2641	0.0000	0.2641	0.0000
24	Shares held by Financial Intermediary	-0.0249	0.1075	-0.0249	0.1075	-0.0249	0.1075	-0.0249	0.1075
25	Foreign Bank Financing	0.0207	0.0968	0.0207	0.0968	0.0207	0.0968	0.0207	0.0968
26	Bank Charges Excluding interest Expense	0.2040	0.0000	0.2040	0.0000	0.2040	0.0000	0.2040	0.0000
	Adjusted R-Squared				0.864				
	F-Statistic				332.873				
	Prob (F-Statistic)				0.000				

4.5.1 Reference Industry: Auto Parts Industry

With Auto Parts as a reference industry, Table 4.10 reflects that Fixed Line Communications, Industrial Transportation, Paper & Board, Tobacco Industry, Oil & Gas Industry and Textile Industry have a significantly different growth pattern as compare to the Auto Parts Industry. The Fixed Line Communication Industry has a coefficient value of 2.3701 higher than the Auto Parts Industry which reflects that the financial intermediation functions in Fixed Line Communications Industry has a higher growth impact than in the Auto Parts Industry.

In the case of Industrial Transportation, Paper & Board, Tobacco Industry, Oil & Gas Industry and Textile Industry the coefficient values are negatively significant. For Industrial Transportation, the coefficient value is -1.7681 which reflects that the growth in Industrial Transportation Industry is lower than growth in the Auto Parts Industry.

The Paper & Board Industry also has a statistically significant negative coefficient of -4.6306 reflecting a lower growth level in the Paper and Board Industry than the Auto Parts Industry. The Tobacco Industry has a statistically significant negative coefficient value of -1.8761. The growth in the Tobacco Industry is also lower than the reference Auto Parts Industry.

The Oil & Gas Industry also has a significantly negative coefficient having a value of -1.1119. This demonstrates that the growth in the Oil & Gas Industry is significantly less than growth in the Auto Parts Industry.

Lastly, the Textile Industry has a significant negative coefficient value of -2.0679. This is also a reflection that the Auto Parts Industry has a higher growth level while the growth of the textile industry is significantly less with respect to the Auto Parts Industry.

The overall results with Auto Parts as a reference Industry reflect that only the Fixed Line Communications Industry has a growth level significantly higher than the Auto Parts Industry whereas Industrial Transportation, Paper & Board Industry, Tobacco, Oil & Gas Industry and Textile Industry have significantly lesser growth levels. All other industries did not find any statistically significant difference in growth coefficients from Auto Parts Industry.

The result further adds that presence of foreign director increases the monitoring and improves the growth of firm. The other financial charges indicate at firm is using financial services in addition to debt financing that ultimately contributes in growth. However, short term financing does not appear to influence the performance of the firm .

The impact of financial intermediation functions in Auto Parts is lesser than in Fixed Line Communications Industry while this impact is higher in Auto Parts when compared with Industrial Transportation, Paper & Board Industry, Tobacco, Oil & Gas Industry and Textile Industry reflecting a relative level of utilization of financial intermediation functions. Industries with a higher level of financial inclusion have shown a higher growth rate than those with lesser utilization. The results are in alignment with the study by Chauvet and Jacolin (2015) who focus on the inclusion of financial services for amplified growths.

4.5.2 Reference Industry: Chemicals Industry

With Chemicals as a reference industry, Table 4.10 reflects that Fixed Line Communications, Paper & Board, Tobacco Industry and Textile Industry have a significantly different coefficient from the Chemicals Industry. The Fixed Line Communication Industry has a coefficient value of 2.536 higher than the Auto Parts Industry which reflects that the financial intermediation functions in the Fixed Line Communications Industry has a higher impact on growth than in the Auto Parts Industry.

In the case of Paper & Board Industry, Tobacco Industry and Textile Industry the coefficient values are negatively significant. For Paper & Board Industry there is significant negative coefficient of -4.463 reflecting a lower growth level in the Paper and Board Industry than the

Auto Parts Industry. The Tobacco Industry has a statistically significant negative coefficient value of -1.7094. This reflects that growth in the Tobacco Industry is lower than the reference Auto Parts Industry.

Lastly, the Textile Industry has a significant negative coefficient value of -1.901. This is also a reflection that the Auto Parts Industry has a higher growth level while the growth of the textile industry is significantly less with respect to the Auto Parts Industry.

The overall results with Chemicals as a reference Industry reflect that only the Fixed Line Communications Industry has a growth level significantly higher than the Chemicals Industry where as Paper & Board, Textile and Tobacco Industry have a significantly lesser growth level. All other industries did not find any statistically significant difference in growth coefficients from Chemicals Industry.

4.5.3 Reference Industry: Construction Industry

With Construction as a reference industry, Table 4.10 reflects that Fixed Line Communications, Paper & Board, Food Industry, and Textile Industry have a significantly different coefficient from the Construction Industry. Thus, growth in these industries is significantly different from construction industry. The Fixed Line Communication Industry has a coefficient value of 2.942 higher than the Construction Industry which reflects that the utilization of financial intermediation functions in the Fixed Line Communications Industry has a higher impact than the Construction Industry.

In the Paper & Board Industry, the coefficient value is negatively significant. In the case of Paper & Board Industry the coefficient of -4.058 reflects a growth level lower than the Construction Industry.

The Food Industry is found having a statistically significant positive coefficient value 0.914 reflecting significantly higher growth in the Food Industry with Construction as a reference industry.

Lastly, the Textile Industry also has a significantly negative coefficient value of -1.495. This is a reflection that the Construction Industry has a higher level of growth than the textile industry.

The overall results with Construction as a reference industry reflect that the Fixed Line Communications Industry and Food Industry has a growth level significantly higher than the Construction Industry whereas Paper & Board and Textile Industry have been found having a significantly lesser growth level with respect to the reference Construction Industry. All other industries did not find any statistically significant difference in growth coefficients from Construction Industry.

The impact of financial intermediation functions in Construction is lesser than in Fixed Line Communications and Food Industry while this impact is higher in Construction when compared with Paper & Board and Textile Industry reflecting a relative level of utilization of financial intermediation functions in Construction Industry. Industries with a higher level of utilization of financial services reflect a higher growth.

4.5.4 Reference Industry: Electricity Industry

With Electricity as a reference industry, the Table 4.10 reflects that Fixed Line Communications, Paper & Board and Textile Industry have a significantly different coefficient from the Electricity Industry. The Fixed Line Communication Industry has a coefficient value of 2.675 which shows that its growth is higher than the Electricity Industry. The utilization of financial intermediation functions in the Fixed Line Communications Industry raises its level of growth higher than the Electricity Industry.

In Paper & Board and Textile Industry the coefficient value is negatively significant. In the case of Paper & Board Industry, the coefficient value is -4.324 which reflects that the growth in Paper & Board Industry is lower than the growth in the reference Electricity Industry. Lastly, the Textile Industry has a statistically significant negative coefficient of -1.762 reflecting a decreased growth than the Electricity Industry.

The overall results with Electricity Industry as a reference industry reflect that only the Fixed Line Communications Industry has a growth level significantly higher than the Electricity Industry whereas Paper & Board and Textile Industry have a significantly lower growth level. All other industries did not find any statistically significant difference in growth coefficients from Electricity Industry.

The impact of financial intermediation functions in Electricity Industry is lesser than in Fixed Line Communications while this impact is higher in Electricity Industry when compared with Paper & Board and Textile Industry reflecting a relative level of utilization of financial intermediation functions in Electricity Industry. Higher the level of utilization of financial services, higher is the industry growth.

Table 4.10 can be summarized in economic terms as follows. The financial intermediation functions offered by the financial institutions have influenced growth in specific industries more than others. This clarifies that the utilization of financial intermediation functions is not similar in all industries.

In industry wise results, the variables of transaction cost function, delegated monitoring function and information sharing function are found to have significant impact on growth. However, the results for liquidity assurance function reflect very scarce significance. This can be attributed to the inefficient utilization of this function across the industries.

When Auto Parts Industry is taken as a reference, the results reflect that the Fixed Line Communication Industry is benefitted most from the utilization of financial intermediation functions. The textile industry is benefitted the least when in comparison to the Auto Parts Industry. In economic perspective, the firms in the Fixed Line Communication Industry show more efficient utilization of functions offered by financial institutions. The reduction in transaction costs, information sharing by intermediaries and delegated monitoring by the intermediaries influence growth more in the Fixed Line Communication Industry than in Auto Parts Industry. While these functions have been relatively less influential on growth in Industrial Transportation, Paper and Board, Tobacco, Oil and Gas and Textile Industry.

With Chemicals as a reference industry, the results of the transaction cost, information sharing and delegated monitoring function have a significantly higher impact on growth in Fixed Line Communication Industry reflecting a better utilization of intermediation functions in this industry than in Chemicals Industry. While the Paper and Board, Tobacco and Textile Industry are found to have a lesser impact of transaction cost, information sharing and delegated monitoring function on growth when compared with the Chemicals Industry.

With Construction as a reference industry, Fixed Line Communication Industry and Food industry are found to have a significantly greater influence of financial intermediation functions on growth. The functions of transaction cost reduction, information sharing coalitions and delegated monitoring function result in higher growth in these two above mentioned industries as compared to other industries. These functions, however, have a lesser influence on growth in Construction Industry while comparing with Paper and Board and Textile Industry.

With Electricity as a reference point, the financial intermediation functions have greater influence in Fixed Line Communication Industry. The functions of financial intermediation have benefitted the Fixed Line Communication Industry more than the Electricity Industry. The functions of transaction cost, information sharing and delegated monitoring have been

able to influence growth in Paper and Board and Textile Industry but its influence is lesser when compared to Electricity Industry.

Table 4.11 reports industry wise effect of four industries namely: Electronics, Engineering, Fixed Line Communication and Industrial Metals & Mining. The table describes whether other industries have a significant difference from the reference industry.

Table 4.11 INDUSTRY WISE EFFECT WITH REFERENCE DUMMY

S. No	Reference Dummy	ELECTRONICS Industry		ENGINEERING Industry		FIXED LINE COMMUNICATIONS Industry		INDUSTRIAL METALS AND MINING Industry	
		Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
1	C	3.6181	0.0073	3.8880	0.0000	7.0713	0.0000	3.7663	0.0000
2	AUTOPARTS Industry	1.0831	0.4398	0.8132	0.3036	-2.3701	0.0084	0.9349	0.3059
3	CHEMICALS Industry	0.9163	0.5017	0.6465	0.3739	-2.5368	0.0024	0.7682	0.3719
4	CONSTRUCTION Industry	0.5109	0.7038	0.2410	0.7380	-2.9423	0.0004	0.3627	0.6643
5	ELECTRICITY Industry	0.7774	0.5883	0.5076	0.5571	-2.6757	0.0048	0.6293	0.5211
6	ELECTRONICS Industry	---	---	-0.2699	0.8525	-3.4532	0.0218	-0.1482	0.9222
7	ENGINEERING Industry	0.2699	0.8525	---	---	-3.1833	0.0011	0.1217	0.9026
8	FIXED LINE COMMUNICATION Industry	3.4532	0.0218	3.1833	0.0011	---	---	3.3050	0.0023
9	INDUSTRIAL METALS AND MINING Industry	0.1482	0.9222	-0.1217	0.9026	-3.3050	0.0023	---	---
10	INDUSTRIAL TRANSPORTATION Industry	-0.6851	0.6698	-0.9549	0.3989	-4.1382	0.0006	-0.8332	0.4900
11	PAPER AND BOARD Industry	-3.5475	0.0257	-3.8174	0.0007	-7.0007	0.0000	-3.6957	0.0022
12	TOBACCO Industry	-0.7930	0.5981	-1.0629	0.2782	-4.2462	0.0001	-0.9412	0.3825
13	PHARMACEUTICAL Industry	0.0652	0.9644	-0.2046	0.8223	-3.3880	0.0008	-0.0830	0.9344
14	OIL AND GAS Industry	-0.0288	0.9835	-0.2986	0.7018	-3.4820	0.0001	-0.1770	0.8447
15	FOOD Industry	1.4256	0.2878	1.1557	0.0963	-2.0276	0.0124	1.2774	0.1247
16	TEXTILE Industry	-0.9848	0.4561	-1.2547	0.0513	-4.4380	0.0000	-1.1330	0.1577
17	Transaction Cost	0.7576	0.0000	0.7576	0.0000	0.7576	0.0000	0.7576	0.0000
18	Running Finance	0.0132	0.5423	0.0132	0.5423	0.0132	0.5423	0.0132	0.5423
19	Markup on Running Finance	0.0073	0.7283	0.0073	0.7283	0.0073	0.7283	0.0073	0.7283
20	Demand Finance	-0.0083	0.8131	-0.0083	0.8131	-0.0083	0.8131	-0.0083	0.8131
21	Commitment Fee for Revolving credit	0.0337	0.8834	0.0337	0.8834	0.0337	0.8834	0.0337	0.8834
22	Bank Over Draft	0.0038	0.9428	0.0038	0.9428	0.0038	0.9428	0.0038	0.9428

23	Directors of Financial Intermediary on Board	0.2641	0.0000	0.2641	0.0000	0.2641	0.0000	0.2641	0.0000
24	Shares held by Financial Intermediary	-0.0249	0.1075	-0.0249	0.1075	-0.0249	0.1075	-0.0249	0.1075
25	Foreign Bank Financing	0.0207	0.0968	0.0207	0.0968	0.0207	0.0968	0.0207	0.0968
26	Bank Charges Excluding interest Expense	0.2040	0.0000	0.2040	0.0000	0.2040	0.0000	0.2040	0.0000
	Adjusted R-squared					0.864629			
	F-statistic					332.8731			
	Prob(F-statistic)					0.000000			

4.5.5 Reference Industry: Electronics Industry

With Electronics Industry as a reference industry, the Table 4.11 reflects that only Fixed Line Communications and Paper & Board Industry have a significantly different coefficient from the Electronics Industry. The Fixed Line Communication Industry has a coefficient value of 3.453 which shows a higher growth than the Electronics Industry. This shows that utilization of financial intermediation functions in the Fixed Line Communications Industry results in a higher level of growth than in the Electronics Industry.

However, the Paper & Board Industry has a statistically significant negative coefficient of -3.547 which shows that growth level in Paper & Board Industry is lower than the growth in Electronics Industry.

The overall results with Electronics as a reference industry reflect that only the Fixed Line Communications has a growth level significantly higher than the reference industry whereas Paper & Board Industry has a significantly lesser growth level. All other industries did not have any statistically significant difference in growth coefficients from Electronics Industry.

The impact of financial intermediation functions in Electronics Industry is lesser than in Fixed Line Communications while this impact is higher in Electronics Industry when compared with Paper & Board Industry reflecting a relative level of utilization of financial

intermediation functions in Electronics Industry. The level of utilization of financial services is resulting in higher industry growth.

4.5.6 Reference Industry: Engineering Industry

With Engineering as a reference industry, the Table 4.11 reflects that Fixed Line Communications, Paper & Board and Textile Industry have a significantly different coefficient from the Engineering Industry. Fixed Line Communication Industry has a coefficient value of 3.183 higher than the Engineering Industry. This shows that the utilization of financial intermediation functions in the Fixed Line Communications Industry results in a higher level of growth than the Engineering Industry.

The Paper & Board and Textile Industry have a negatively significant coefficient. The Paper & Board Industry has a negative coefficient of -3.817 reflecting a growth level lower than the Engineering Industry. The Textile Industry also has a negative coefficient value of -1.254. This shows that the financial intermediation functions result in a lesser growth in the textile industry than the reference Engineering Industry.

The overall results with Engineering as a reference industry reflect that the Fixed Line Communications has a growth level significantly higher than the Engineering Industry. Paper & Board and Textile Industries have a significantly lesser growth level with respect to the reference Engineering Industry. All other industries did not find any statistically significant difference in growth coefficients from Engineering Industry.

The impact of financial intermediation functions in Engineering Industry is lesser than in Fixed Line Communications while this impact is higher in Engineering Industry when compared with Paper and Board and Textile Industry reflecting a relative level of utilization of financial intermediation functions in Engineering Industry. The raised level of utilization of financially intermediated services provides higher industry growth.

4.5.7 Reference Industry: Fixed Line Communications Industry

With Fixed Line Communication as a reference industry, the Table 4.11 reflects that all industries have a significantly different coefficient than the Fixed line Communications Industry. The Auto Parts industry has a coefficient value of -2.370 lower than the Fixed Line Communication Industry which reflects that the utilization of financial intermediation functions in the Fixed Line Communications Industry result in a lower level of growth than the Auto Parts Industry.

The Chemicals Industry has a coefficient value of -2.536, Construction industry has a coefficient value of -2.942, Electricity Industry has a coefficient value -2.675, and coefficient value of Electronics Industry is -3.453 and Engineering Industry has a coefficient value of -3.183. The Industrial Metals & Mining Industry has a coefficient value of -3.305, Industrial Transportation Industry has a coefficient value of -4.138, Paper & Board has a coefficient value of -7.000, Tobacco Industry has a negative coefficient of -4.246, Pharmaceutical Industry has a coefficient value of -3.388, Oil & Gas Industry has coefficient value of -3.482, Food Industry has a coefficient value of -2.027 and for Textile Industry the coefficient value is -4.438.

The reported coefficient values of all the industries are significantly negative which reflects that the utilization of financial intermediation functions in Fixed Line Communications Industry result in a growth level higher than all other industries. All industries, Auto Parts, Chemicals, Construction, Electricity, Electronics, Engineering, Industrial Metals & Mining, Industrial Transportation, Paper & Board, Tobacco Industry, Pharmaceuticals Industry, Oil & Gas, Food and Textile Industry have a negative coefficient which means they have lower growth with reference to the Fixed Line Communications industry.

The impact of financial intermediation functions in Fixed Line Communications industry reflects the highest growth levels, relatively higher than all other industries. The more the utilization of financially intermediated services, higher is the industry growth.

4.5.8 Reference Industry: Industrial Metals & Mining Industry

With Industrial Metals & Mining as a reference industry, the Table 4.11 reflects that only Fixed Line Communications and Paper & Board Industry have significantly different coefficients from the Industrial Metals & Mining Industry. The Fixed Line Communication Industry has a coefficient value of 3.305 which shows that the growth is higher in the Industrial Metals & Mining Industry than the Fixed Line Communications Industry. This reflects that the utilization of financial intermediation functions in the Fixed Line Communications Industry result in growth higher than the Industrial Metals & Mining Industry.

While, the Paper & Board Industry has a statistically significant negative coefficient of - 3.695 which reflects that the growth in Paper & Board Industry is lower than the Industrial Metals & Mining Industry.

All other industries did not find any statistically significant difference in growth coefficients from Industrial Metals & Mining Industry.

The impact of financial intermediation functions in Industrial Metals & Mining Industry is lesser than in Fixed Line Communications while this impact is higher in Paper and Board Industry reflecting a relative level of utilization of financial intermediation functions. The growth levels are raised when level of utilization of financially intermediated services increase.

The results with Electronics a reference industry reflect that the Fixed Line Communication Industry has been benefitted more than Electronics Industry due to the impact of financial intermediation functions. The variables of transaction cost function, information sharing function and delegated monitoring function impart greater influence on growth in Electronics Industry while their impact on growth is lesser in Paper and Board Industry.

With Engineering Industry as a reference, the growth of Fixed Line Communication Industry is influenced more than Engineering Industry due to the utilization of financial intermediation functions of transaction cost reduction, information sharing and delegated monitoring. The growth in Paper and Board and Textile Industry has been benefitted positively but has a lesser impact as compared to Engineering Industry.

With Fixed Line Communication as a reference industry, the impact of financial intermediation functions of transaction cost reduction, information sharing and delegated monitoring have a greater impact on growth in this industry while all other industries are less influenced by these functions. The utilization of intermediation functions have resulted in an impact on growth higher in Fixed Line Communication Industry than in other industries. It reflects that the transaction costs have been properly managed; the financial institutions have shared useful information and helped in better governance in Fixed Line Communication Industry resulting in a higher impact on growth as compared to other industries.

With reference to the Industrial Metals and Mining Industry, the Fixed Line Communications reflects a higher impact on growth due to utilization of transaction cost function, information sharing function and delegated monitoring function offered by the financial intermediaries. The growth in Fixed Line communication Industry is greater than growth in Industrial Metals and Mining while the impact of financial intermediation functions on growth in Paper and Board is lesser than in Industrial Metals and Mining Industry. Thus, the utilization of financial intermediation functions of transaction cost, information sharing and delegated

monitoring influence growth more in Industrial Metals and Mining than in Paper and Board Industry.

Table 4.12 reports industry wise effect of four industries namely; Industrial Transportation, Paper and Board, Tobacco and Pharmaceuticals Industry. The table describes whether other industries have a significant difference in coefficients from the reference industry.

Table 4.12 INDUSTRY WISE EFFECT WITH REFERENCE DUMMY

S. No	Reference Dummy	INDUSTRIAL TRANSPORTATION Industry		PAPER AND BOARD Industry		TOBACCO Industry		PHARMACEUTICAL Industry	
		Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
1	C	2.9331	0.0027	0.0707	0.9408	2.8251	0.0005	3.6834	0.0000
2	AUTOPARTS Industry	1.7681	0.0917	4.6306	0.0000	1.8761	0.0387	1.0179	0.2091
3	CHEMICALS Industry	1.6014	0.1119	4.4638	0.0000	1.7094	0.0449	0.8511	0.2655
4	CONSTRUCTION Industry	1.1959	0.2244	4.0584	0.0000	1.3039	0.1200	0.4457	0.5501
5	ELECTRICITY Industry	1.4625	0.1860	4.3249	0.0001	1.5705	0.1090	0.7122	0.4292
6	ELECTRONICS Industry	0.6851	0.6698	3.5475	0.0257	0.7930	0.5981	-0.0652	0.9644
7	ENGINEERING Industry	0.9549	0.3989	3.8174	0.0007	1.0629	0.2782	0.2046	0.8223
8	FIXED LINE COMMUNICATION Industry	4.1382	0.0006	7.0007	0.0000	4.2462	0.0001	3.3880	0.0008
9	INDUSTRIAL METALS AND MINING Industry	0.8332	0.4900	3.6957	0.0022	0.9412	0.3825	0.0830	0.9344
10	INDUSTRIAL TRANSPORTATION Industry	---	---	2.8624	0.0289	0.1080	0.9294	-0.7503	0.5112
11	PAPER AND BOARD Industry	-2.8624	0.0289	---	---	-2.7545	0.0214	-3.6127	0.0015
12	TOBACCO Industry	-0.1080	0.9294	2.7545	0.0214	---	---	-0.8582	0.3889
13	PHARMACEUTICAL Industry	0.7503	0.5112	3.6127	0.0015	0.8582	0.3889	---	---
14	OIL AND GAS Industry	0.6563	0.5299	3.5187	0.0007	0.7642	0.3911	-0.0940	0.9065
15	FOOD Industry	2.1106	0.0310	4.9730	0.0000	2.2186	0.0070	1.3603	0.0510
16	TEXTILE Industry	-0.2998	0.7548	2.5627	0.0065	-0.1918	0.8099	-1.0501	0.1355
17	Transaction Cost	0.7576	0.0000	0.7576	0.0000	0.7576	0.0000	0.7576	0.0000
18	Running Finance	0.0132	0.5423	0.0132	0.5423	0.0132	0.5423	0.0132	0.5423
19	Markup on Running Finance	0.0073	0.7283	0.0073	0.7283	0.0073	0.7283	0.0073	0.7283
20	Demand Finance	-0.0083	0.8131	-0.0083	0.8131	-0.0083	0.8131	-0.0083	0.8131
21	Commitment Fee for Revolving credit	0.0337	0.8834	0.0337	0.8834	0.0337	0.8834	0.0337	0.8834

22	Bank Over Draft	0.0038	0.9428	0.0038	0.9428	0.0038	0.9428	0.0038	0.9428
23	Directors of Financial Intermediary on Board	0.2641	0.0000	0.2641	0.0000	0.2641	0.0000	0.2641	0.0000
24	Shares held by Financial Intermediary	-0.0249	0.1075	-0.0249	0.1075	-0.0249	0.1075	-0.0249	0.1075
25	Foreign Bank Financing	0.0207	0.0968	0.0207	0.0968	0.0207	0.0968	0.0207	0.0968
26	Bank Charges Excluding interest Expense	0.2040	0.0000	0.2040	0.0000	0.2040	0.0000	0.2040	0.0000
	Adjusted R-squared				0.864629				
	F-statistic				332.8731				
	Prob (F-statistic)				0.000000				

4.5.9 Reference Industry: Industrial Transportation Industry

With Industrial Transportation as a reference industry, the Table 4.12 reflects that Fixed Line Communications, Paper & Board and Food Industry have a significantly different coefficient from the Industrial Transportation Industry. Fixed Line Communication Industry and the Food Industry have significantly positive coefficient values of 4.138 and 2.110 respectively. This reflects that the financial intermediation functions result in higher levels of growth in these industries than the Industrial Transportation Industry.

The Paper & Board Industry has a statistically significant negative coefficient of -2.862 reflecting a growth level lower than the Industrial Transportation Industry. All other industries did not find any statistically significant difference in growth coefficients from Industrial Transportation Industry.

The growth levels are raised when level of utilization of financially intermediated services increase. Here also, the industries with greater utilization of intermediated functions in reflecting higher growth while others have a relatively lower growth.

4.5.10 Reference Industry: Paper & Board Industry

With Paper & Board Industry as a reference industry, Table 4.12 reflects that all industries have a significantly different coefficient than the Paper & Board Industry. The Auto Parts Industry has a coefficient value of 4.630 which reflects that the growth in this industry is higher than that in the Paper & Board Industry. This also shows that the utilization of financial intermediation functions in the Paper & Board Industry result in a higher level of growth than the Auto Parts Industry.

The Chemicals Industry has a coefficient value of 4.463, Construction Industry has a coefficient value of 4.058, Electricity Industry has a coefficient value of 4.324, and coefficient value of Electronics Industry is 3.547. In Engineering Industry, the coefficient value is 3.817 while in the Fixed Line Communications Industry, the coefficient value is 7.000. In Industrial Metals & Mining Industry the coefficient value is 3.695 while the coefficient of Industrial Transportation is 2.862. Tobacco Industry has coefficient value of 2.754, the Pharmaceutical Industry has a coefficient value of 3.612 and Oil & Gas Industry has coefficient value 3.518. Food Industry has coefficient value of 4.973 while for Textile industry, the coefficient value is 2.562.

The reported coefficient values of all the industries are significantly positive which shows that the financial intermediation functions in Paper & Board Industry result in a growth level lower than all other industries. All industries i.e. Auto Parts Industry, Chemicals Industry, Construction, Electricity, Electronics, Engineering, Fixed Line Communication Industry, Industrial Metals & Mining, Industrial Transportation, Tobacco Industry, Pharmaceutical Industry, Oil & Gas, Food Industry and Textile Industry have a positive coefficient which shows that the utilization of financial intermediation functions by firms in these industries result in a growth level higher than the Paper & Board Industry.

This again emphasizes on the utilization of intermediated function. Industries with higher growth are occupants of greater financial inclusions.

4.5.11 Reference Industry: Tobacco Industry

With Tobacco Industry as a reference industry, the Table 4.12 reflects that Auto Parts Industry, Chemicals, Fixed Line Communications, Paper & Board and Food Industry have a significantly different coefficient from the Tobacco Industry. Except the Paper & Board Industry, all above mentioned industries have a significantly positive coefficient value with Tobacco Industry as a reference industry. The Auto Parts Industry has a significantly positive coefficient value of 1.876, the coefficient value of Chemicals Industry is 1.709 and the Fixed Line Communications Industry has a significant coefficient value of 4.246 while the coefficient value for Food Industry is 2.218. The significant positive coefficients reflect that the growth in these industries is higher than the Tobacco Industry due to the utilization of financial intermediation functions.

Only the Paper & Board Industry has a statistically significant negative coefficient of -2.754 reflecting a growth lower than the Tobacco Industry.

The overall results with Tobacco Industry as a reference Industry reflect that Auto Parts Industry, Chemicals, Fixed Line Communications Industry and Food Industry have a growth level significantly higher than the Tobacco Industry whereas Paper & Board Industry has a significantly lesser growth level with Tobacco as a reference industry. All other industries did not find any statistically significant difference in growth coefficients from Tobacco Industry. The results again augment the findings of Chauvet and Jacolin (2015) focusing on raised growth levels for those with higher financial inclusions.

4.5.12 Reference Industry: Pharmaceuticals Industry

With Pharmaceuticals as the reference industry, Table 4.12 shows that Fixed Line Communications, Paper & Board Industry and Food Industry have a significantly different coefficient from the Pharmaceuticals Industry. The Fixed Line Communication Industry and

the Food Industry have significantly positive coefficient values of 3.388 and 1.360 respectively. This shows that growth in these industries is higher than the Pharmaceuticals Industry due to utilization of the financial intermediation functions. The utilization of financial intermediation services in the Fixed Line Communication Industry and the Food Industry raises their level of growth higher than the Pharmaceuticals Industry.

Paper & Board Industry has a statistically significant negative coefficient of -3.612 reflecting a growth lower than the Pharmaceuticals Industry.

The overall results with Pharmaceuticals as a reference industry reflect that Fixed Line Communications Industry and Food Industry have a growth level significantly higher than the Pharmaceuticals Industry whereas Paper & Board Industry has been found having a significantly less growth level with Pharmaceuticals as a reference industry. All other industries did not find any statistically significant difference in growth coefficients from Pharmaceuticals Industry.

The results are a reflection that industries reflect growth higher than those who show relatively lesser utilization of financial services. Thus, intermediates services augment the growth in specific industries.

With Industrial Transportation Industry as a reference industry, the impact of financial intermediation functions i.e. transaction cost function, information sharing function and delegated monitoring function, have been greater in Fixed Line Communication Industry and the Food industry as compared to the Industrial Transportation Industry. These functions have a lesser impact on growth in Paper and Board Industry when compared to the impact of these functions in Industrial Metals and Mining Industry.

The Paper and Board Industry is found having an impact of financial intermediation functions on growth but on a relative scale, it has been least influenced as compared to all other industries. The financial intermediation functions of transaction cost reduction, information sharing coalition and delegated monitoring have been influential on all industries but the impact on Paper and Board industry has been statistically the lowest reflecting minimum as well as inefficient utilization of intermediation functions.

With Tobacco Industry as a reference point, the impact of financial intermediation functions of transaction cost reduction, information sharing coalition and delegated monitoring is found greater in Auto Parts, Chemicals, Fixed Line Communication and Food Industry while this impact is lower in Paper and Board Industry when compared with Tobacco Industry. This reflects that the financial intermediation functions are more influential in Auto Parts, Chemicals, Fixed Line Communication and Food Industry than in Tobacco Industry.

The Pharmaceuticals Industry identifies that the impact of financial intermediation functions of transaction cost reduction, information sharing coalition and delegated monitoring have more influence in Fixed Line Communication Industry but lesser impact in Paper and Board Industry when these are compared to the Pharmaceuticals Industry. Thus, the influence of financial intermediation functions is dominant in Fixed Line Communication Industry while comparing it with Pharmaceuticals Industry.

Table 4.13 report industry wise impact of financial intermediation on growth in three industries; Oil & Gas Industry, Food, and Textile Industry. The following table describes whether other industries have a significant difference from the reference industry.

Table 4.13 INDUSTRY WISE EFFECT WITH REFERENCE DUMMY

S. No	Reference Dummy	OIL AND GAS Industry		FOOD Industry		TEXTILE Industry	
		Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
1	C	3.5894	0.0000	5.0437	0.0000	2.6333	0.0000
2	AUTOPARTS Industry	1.1119	0.0889	-0.3425	0.5268	2.0679	0.0001
3	CHEMICALS Industry	0.9451	0.1187	-0.5092	0.2814	1.9012	0.0000
4	CONSTRUCTION Industry	0.5397	0.3527	-0.9147	0.0402	1.4957	0.0002

5	ELECTRICITY Industry	0.8062	0.2910	-0.6481	0.3292	1.7623	0.0060
6	ELECTRONICS Industry	0.0288	0.9835	-1.4256	0.2878	0.9848	0.4561
7	ENGINEERING Industry	0.2986	0.7018	-1.1557	0.0963	1.2547	0.0613
8	FIXED LINE COMMUNICATION Industry	3.4820	0.0001	2.0276	0.0124	4.4380	0.0000
9	INDUSTRIAL METALS AND MINING Industry	0.1770	0.8447	-1.2774	0.1247	1.1330	0.1577
10	INDUSTRIAL TRANSPORTATION Industry	-0.6563	0.5299	-2.1106	0.0310	0.2998	0.7548
11	PAPER AND BOARD Industry	-3.5187	0.0007	-4.9730	0.0000	-2.5627	0.0065
12	TOBACCO Industry	-0.7642	0.3911	-2.2186	0.0070	0.1918	0.8099
13	PHARMACEUTICAL Industry	0.0940	0.9065	-1.3603	0.0061	1.0501	0.1355
14	OIL AND GAS Industry	---	---	-1.4543	0.0075	0.9561	0.0038
15	FOOD Industry	1.4543	0.0075	---	---	2.4104	0.0000
16	TEXTILE Industry	-0.9561	0.0063	-2.4104	0.0000	---	---
17	Transaction Cost	0.7576	0.0000	0.7576	0.0000	0.7576	0.0000
18	Running Finance	0.0132	0.5423	0.0132	0.5423	0.0132	0.5423
19	Markup on Running Finance	0.0073	0.7283	0.0073	0.7283	0.0073	0.7283
20	Demand Finance	-0.0083	0.8131	-0.0083	0.8131	-0.0083	0.8131
21	Commitment Fee for Revolving credit	0.0337	0.8834	0.0337	0.8834	0.0337	0.8834
22	Bank Over Draft	0.0038	0.9428	0.0038	0.9428	0.0038	0.9428
23	Directors of Financial Intermediary on Board	0.2641	0.0000	0.2641	0.0000	0.2641	0.0000
24	Shares held by Financial Intermediary	-0.0249	0.1075	-0.0249	0.1075	-0.0249	0.1075
25	Foreign Bank Financing	0.0207	0.0968	0.0207	0.0968	0.0207	0.0968
26	Bank Charges Excluding interest Expense	0.2040	0.0000	0.2040	0.0000	0.2040	0.0000
	Adjusted R-squared			0.864629			
	F-statistic			332.8731			
	Prob(F-statistic)			0.000000			

4.5.13 Reference Industry: Oil & Gas Industry

With Oil & Gas Industry as a reference industry, the Table 4.13 shows that Fixed Line Communications, Food Industry, Paper & Board and Textile Industry have a significantly different coefficient from the Oil & Gas Industry. The Fixed Line Communication Industry

and the Food Industry have significantly positive coefficient values of 3.482 and 1.454 respectively. This shows that the growth in these industries is higher than the Oil & Gas Industry due to utilization of financial intermediation functions.

The Paper & Board Industry and Textile Industry have statistically significant negative coefficients of -3.518 and -0.956 respectively reflecting a growth lower than the Oil & Gas Industry. This shows that the utilization of financial intermediation functions in Oil and Gas Industry result in a higher growth than in Paper and Board and Textile Industry.

The overall results with Oil & Gas Industry as a reference industry reflect that Fixed Line Communications Industry and Food Industry have a growth level significantly higher whereas Paper & Board Industry and Textile has a significantly lower growth level with Oil & Gas as a reference industry. All other industries did not find any statistically significant difference in growth coefficients from Oil & Gas Industry.

4.5.14 Reference Industry: Food Industry

With Food Industry as a reference industry, Table 4.13 shows that the Construction Industry has a significant negative coefficient value of -0.914. Fixed Line Communication Industry has a statistically significant positive coefficient of 2.027 which shows a higher level of growth than the Food Industry.

The Industrial Transportation Industry has a negative coefficient value of -2.110, while Paper and Board Industry has a coefficient value of -4.973. The Tobacco Industry has a coefficient value of -2.218, the Pharmaceuticals Industry has a significantly negative coefficient of -1.360 and the Oil & Gas Industry has a significant coefficient value of -1.454. Lastly, the Textile Industry has a significantly negative coefficient value of -2.410. The negatively significant coefficients shows that utilization of financial intermediation functions in these

industries have a significantly lower impact on growth level than the reference Food industry. Remaining industries did not find any significant difference in coefficient from the food Industry.

4.5.15 Reference Industry: Textile Industry

With Textile as a reference industry, the Table 4.13 reflects that the Auto Parts Industry, Chemicals Industry, Construction, Electricity, Engineering, Fixed Line Communications, Oil & Gas and Food Industry have a statistically significant positive coefficient reflecting a higher growth in these industries due to utilization of financial intermediation functions than the Textile Industry. The Auto Parts Industry has a coefficient value of 2.067, Chemicals Industry has a coefficient value of 1.901, Construction Industry has a coefficient value of 1.495 and Electricity Industry has a coefficient value of 1.762. The Engineering Industry has a coefficient value of 1.254. Fixed Line Communication Industry has a coefficient of 4.438. The Oil & Gas Industry has a significantly positive coefficient of 0.956 while the Food Industry has a coefficient value of 2.410 which shows that the utilization of financial intermediation functions in the these industries result in higher growth than the Textile Industry which has been taken as a reference industry.

Only Paper and Board Industry has a negatively significant coefficient of -2.562 which shows that the impact of financial intermediation functions on growth level in the Paper and Board Industry is lower than the Textile Industry which is taken as a reference industry. Remaining industries did not find a significant difference in coefficient value from the reference industry i.e. Textile Industry.

With Oil and Gas as a reference industry, the financial intermediation functions have a greater impact on growth in Fixed Line Communication and Food Industry. The utilization of financial intermediation functions in these industries result in a higher growth levels when compared to the Oil and Gas Industry. While in the case of Paper and Board and Textile

Industry, the impact of financial intermediation functions on growth is lesser as compared to the Oil and Gas Industry.

With Food as a reference industry, the impact of financial intermediation functions is greater only in Fixed Line Communication Industry. This reflects that the financial intermediation functions of transaction cost, information sharing and delegated monitoring have greater influence on growth in Fixed Line Communication Industry when we compare it to the Food Industry. Whereas, the Construction, Industrial Transportation, Paper and Board, Tobacco, Pharmaceuticals, Oil and Gas and Textile Industry have a lesser impact on growth due to the influence of the variables of transaction cost, information sharing and delegated monitoring when compared with the Food Industry.

Lastly, with Textile Industry as reference industry, only the Paper and Board Industry is found to have a lesser impact of financial intermediation functions on growth. While in Auto Parts, Chemicals, Construction, Electricity, Engineering, Fixed Line Communication, Oil and Gas and Food Industry the impact of transaction cost function, information sharing function and delegated monitoring function have been greater when compared to the Textile Industry. This reflects that these industries have been more benefitted with utilization of financial intermediation functions when compared with other industries. Furthermore, the efficiency in utilization of financial intermediation functions can result in escalating growth in any industry.

This section can be summarized with the emphasis on the industries to utilize financial intermediation functions for higher growth levels. The results are an empirical reflection of the fact that firms with higher inclusion of financial functions reflect higher growth. The study by Chauvet and Jacolin (2015) provide literary support to the findings of the present study. Thus, focused utilization of financial intermediation functions can result in higher growth levels.

4.6 Moderating Effect of Financial Intermediation Functions across Different Industries using Interactive Terms

Table 4.14 reports the effect of Industry-Variable interactive terms reflecting the influence of each variable in each reference industry being significantly different from other industries or not. Four industries, namely Auto Parts, Chemicals, Construction and Electricity have been taken in this table. The table describes whether particular variables in the reference industry have a significant difference from other industries or not.

Table 4.14 MODERATING EFFECT OF FINANCIAL INTERMEDIATION FUNCTIONS

S. No	Industry Variables	AUTOPARTS Industry		CHEMICALS Industry		CONSTRUCTION Industry		ELECTRICITY Industry	
		Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
1	C	3.4214	0.0000	3.3198	0.0000	3.3073	0.0000	3.4666	0.0000
2	Transaction Cost	0.7986	0.0000	0.7442	0.0000	0.8485	0.0000	0.7745	0.0000
3	Running Finance	0.0080	0.7271	0.0228	0.3318	0.0001	0.9976	0.0137	0.5367
4	Markup on Running Finance	-0.0233	0.2688	-0.0457	0.0386	-0.0251	0.2569	-0.0312	0.1339
5	Demand Finance	-0.0150	0.6709	-0.0026	0.9426	-0.0164	0.6999	-0.0091	0.7930
6	Commitment Fee for Revolving credit	0.0344	0.8754	0.0007	0.9976	0.0237	0.9134	0.0137	0.9500
7	Bank Over Draft	-0.0033	0.9506	-0.0161	0.7651	-0.0027	0.9647	-0.0095	0.8575
8	Directors of Financial Intermediary on Board	0.3246	0.0000	0.3437	0.0000	0.2680	0.0000	0.3274	0.0000
9	Shares held by Financial Intermediary	-0.0148	0.3580	-0.0295	0.0743	-0.0202	0.2195	-0.0264	0.1013
10	Foreign Bank Financing	0.0242	0.0990	0.0241	0.0568	0.0279	0.0273	0.0233	0.0620
11	Bank Charges Excluding interest Expense	0.1950	0.0000	0.2723	0.0000	0.1668	0.0000	0.2322	0.0000
12	<i>Transaction Cost * Dummy</i>	0.1474	0.3976	0.2785	0.0001	-0.4595	0.0000	0.1967	0.4536
13	<i>Running Finance * Dummy</i>	0.1046	0.4382	-0.0096	0.8833	0.0639	0.3885	-0.0205	0.8768
14	<i>Markup on Running Finance * Dummy</i>	-0.0215	0.9287	0.0735	0.2828	0.0142	0.8186	0.1074	0.5384
15	<i>Demand Finance * Dummy</i>	0.0164	0.9550	-0.0494	0.7190	0.0132	0.8653	---	---
16	<i>Commitment Fee for Revolving Credit * Dummy</i>	---	---	---	---	---	---	---	---
17	<i>Bank Over Draft * Dummy</i>	---	---	0.0012	0.9969	-0.0304	0.8058	---	---

18	<i>Directors of Financial Intermediary on Board * Dummy Shares held by Financial Intermediary * Dummy Foreign Bank Financing * Dummy Bank Charges Excluding interest Expense * Dummy</i>	-0.3079	0.2033	-0.2748	0.00601	0.0951	0.4697	-0.3988	0.0520
19		-0.0197	0.7957	0.0271	0.6174	0.0211	0.6976	0.0382	0.6705
20		-0.0128	0.7077	-0.0464	0.4902	-0.0181	0.8167	-0.5041	0.5824
21		-0.0975	0.6010	-0.2759	0.0006	0.4343	0.0002	-0.2803	0.0287
Adjusted R-Squared		0.742		0.728		0.728		0.726	
F-Statistic		172.188		167.289		166.723		182.255	
Prob (F-Statistic)		0.000		0.000		0.000		0.000	

4.6.1 Reference Industry: Auto Parts Industry

With Auto Parts as a reference industry, the Table 4.14 reflects that the variables of transaction cost, delegated monitoring and information sharing coalition have a significant impact on firm growth in the Auto Parts Industry. The Table 4.14 also reflects that the interactive terms which are not statistically significant and none of the variables add to the slope of the equation in the Auto Parts industry and all the variables have a similar impact in Auto Parts industry as they have in all other industries. Thus, none of the variable has a significantly different influence on the growth in the Auto Parts industry.

The variables of transaction costs, representation of financial intermediaries on board and bank charges paid by the firm excluding interest expense have a significant influence on growth. In Auto Parts as the reference industry, reported results of the interactive terms show that all the independent variables have a similar influence in Auto Parts Industry as they have in all other Industries. Thus, Auto Parts Industry is indifferent from other industries in terms of impact of financial intermediation functions.

The financial intermediation functions and the interactive terms explain 74.2% variation in the growth of the Auto Parts Industry. The model utilized is statistically significant with an F Statistic of 172.188 and probability of F being 0.000.

4.6.2 Reference Industry: Chemicals Industry

With Chemicals as a reference industry, the Table 4.14 shows that the variables of transaction cost, liquidity assurance, delegated monitoring and information sharing coalitions have a significant impact on growth of firms in the Chemicals industry. The Table 4.14 also reflects that the interactive terms of (*Transaction Cost * Chemicals Industry Dummy*), (*Directors of Financial Intermediary on Board * Chemicals Industry Dummy*) and (*Bank Charges Excluding interest Expense * Chemicals Industry Dummy*) is statistically significant. This reflects that the variables of transaction cost, delegated monitoring and information sharing coalition influence the slope of the growth equation in the Chemicals Industry and the interactive terms for these variables are statistically significant which means that they have a different influence on the growth in the Chemicals Industry in comparison to other industries.

The coefficient value for the (*Transaction Cost*Chemicals Industry Dummy*) interactive term is 0.278. The coefficient of the interactive term is a reflection that this variable is positively significantly different from other industries and adds to the growth in the Chemicals industry higher than in all other industries.

The coefficient value for the (*Directors of Financial Intermediary on Board * Chemicals Industry Dummy*) interactive term is -0.274 while the coefficient value for the (*Bank Charges Excluding Interest Expense * Chemicals Industry Dummy*) interactive term is -0.275. This shows both of these interactive terms have a statistically significant negative influence on growth in the Chemicals Industry when compared with other industries.

The overall results with Chemicals Industry as a reference Industry reflect that the Variable-Industry interactive terms of Transaction Cost, Delegated Monitoring and Information Sharing Coalition have a significantly different influence in the Chemicals Industry. All other interactive terms were found statistically insignificant which reflects that they did not have any difference in growth in Chemicals Industry in comparison to other industries.

The financial intermediation functions and the interactive terms explain 72.8% variation in the growth of the Chemicals Industry. The model utilized is statistically significant with an F Statistic of 167.289 and probability of F being 0.000.

4.6.3 Reference Industry: Construction Industry

With Construction as a reference industry, the Table 4.14 shows that the variables of transaction cost, delegated monitoring and information sharing coalitions have a significant impact on growth of firms in the Construction industry. The Table 4.14 also reflects that the interactive term of (*Transaction Cost * Construction Industry Dummy*) and (*Bank Charges Excluding interest Expense * Construction Industry Dummy*) is statistically significant. This reflects that the variables of transaction cost and information sharing coalition influence the slope of the growth equation in the Construction Industry and the interactive terms for these variables are statistically significant which means that they have a different influence on the growth in the Construction Industry in comparison to all other industries.

The coefficient value for the (*Transaction Cost*Construction Industry Dummy*) interactive term is -0.459. The coefficient of the interactive term is a reflection that this variable is negatively significantly different from other industries and has a negative influence on growth in the Construction industry than all other industries.

The coefficient value for the (Bank Charges Excluding Interest Expense * Construction Industry Dummy) interactive term is 0.434. This shows both of these interactive terms have a statistically significant positive influence on growth in the Construction Industry when compared with other industries.

The overall results with Construction Industry as a reference industry reflect that the interactive terms of Transaction Cost and Bank Charges Excluding Interest Expense have a significantly different influence in the Construction Industry than all other industries. All other interactive terms were found statistically insignificant which reflects that they did not have any statistically significant different impact on growth in Construction Industry.

The financial intermediation functions and the interactive terms explain 72.8% variation in the growth of the Construction Industry. The model utilized is statistically significant with an F Statistic of 166.723 and probability of F being 0.000.

4.6.4 Reference Industry: Electricity Industry

With Electricity as a reference industry, the Table 4.14 shows that the variables of transaction cost, delegated monitoring and information sharing coalitions have a significant impact on growth of firms in the Electricity industry. The Table 4.14 also reflects that the interactive term of (*Directors of Financial Intermediary on Board * Electricity Industry Dummy*) and (*Bank Charges Excluding interest Expense * Electricity Industry Dummy*) is statistically significant. This reflects that the variables of delegated monitoring and information sharing coalition influence the slope of the growth equation in the Electricity Industry differently from other industries. The interactive terms for these variables are statistically significant which means that they have a different influence on the growth in the Electricity Industry in comparison to other industries.

The coefficient value for the (Directors of Financial Intermediary on Board * *Electricity Industry Dummy*) interactive term is -0.398 while the coefficient value for the (Bank Charges Excluding Interest Expense * *Electricity Industry Dummy*) interactive term is -0.280. This shows both of these interactive terms have a statistically significant negative influence on growth in the Electricity Industry when compared with other industries.

The overall results with Electricity Industry as a reference Industry reflect that the Variable-Industry interactive terms of Delegated Monitoring and Information Sharing Coalition have a significantly different influence in the Electricity Industry. All other interactive terms were found statistically insignificant which reflects that they did not have any different impact on growth in Electricity Industry in comparison to other industries.

The financial intermediation functions and the interactive terms explain 72.6% variation in the growth of the Construction Industry. The model utilized is statistically significant with an F Statistic of 182.255 and probability of F being 0.000.

In Auto Parts Industry, none of the financial intermediation functions was found to moderate growth. Thus, the impact of all the financial intermediation functions is found similar with other industries. The transaction cost, information sharing and delegated monitoring functions have a similar influence on growth as they have in all other industries. None of the variable interactive terms to capture moderating effect is found significant reflecting a similar effect as in other industries.

In Chemicals Industry, the impact of transaction cost function is significantly greater than other industries. The effect of transaction cost function is more dominant in the Chemicals Industry. The moderating term identifies that the variable of transaction cost function influences growth more in Chemicals Industry than in other industries. While the moderating terms for Information Sharing Function and Delegated Monitoring Function reflect a lesser

impact of these functions in Chemicals Industry than in other industries. This shows that the transaction cost function help in boosting growth by reducing cost of firms more in Chemicals Industry resulting in higher growth as compared to other industries. The moderating terms of other functions is found to be statistically insignificant which reflects that these functions have a similar impact in Chemicals Industry as they have in all other industries.

In Construction Industry, the impact of transaction cost function results in lesser growth level as compared to other industries. This reflects that the other industries utilize this offered function more efficiently than the Construction Industry. The moderating term for Information Sharing Function shows a higher impact on growth in Construction Industry. Thus, this industry enjoys more effective information sharing from financial institutions enabling them to outperform other industries. The remaining moderating terms are insignificant reflecting a similar impact of these in all other industries.

With Electricity Industry as a reference industry, the moderating terms of delegated monitoring and information sharing function are negatively significant. This reflects that the utilization of information sharing function and delegated monitoring function results in relatively lesser impact on growth in Electricity Industry than in other industries. The impact of these two functions on growth is lower in this industry as compared to other industries. The remaining moderating terms are insignificant reflecting that these have a similar impact in Electricity Industry as they have in other industries.

Table 4.15 reports the effect of Industry-Variable interactive terms reflecting the influence of each variable in each reference industry being significantly different from other industries or not. Four industries, namely Electronics, Engineering, Fixed Line Communications and Industrial Metals and Mining Industry have been reported in Table 4.15. It describes whether particular variables and their interactive terms in an industry have a significant difference from other industries or not. Form economic view point, the results reflect the relative

influence of each variable in an industry in comparison to other industries. The interactive terms provide significance in respect of the relative effectiveness of variables in the specified industries making them different from others. This enables the observation of moderating effect of financial intermediation functions across different industries using interactive terms.

Table 4.15 MODERATING EFFECT OF FINANCIAL INTERMEDIATION FUNCTIONS WITH INDUSTRIAL INTERACTIVE TERMS

S. No	Industry	ELECTRONICS Industry		ENGINEERING Industry		Fixed Line Communication Industry		Industrial Metals and Mining Industry	
		Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
1	C	3.4820	0.0000	3.3636	0.0000	3.3111	0.0000	3.4338	0.0000
2	Transaction Cost	0.8004	0.0000	0.8021	0.0000	0.7866	0.0000	0.7923	0.0000
3	Running Finance	0.0193	0.3761	0.0263	0.2185	0.0204	0.3449	0.0170	0.4381
4	Markup on Running Finance	-0.0334	0.1068	-0.0329	0.1052	-0.0322	0.1163	-0.0233	0.2629
5	Demand Finance	-0.0122	0.7269	-0.0236	0.4869	-0.0137	0.6915	-0.0205	0.5729
6	Commitment								
6	Fee for Revolving credit	0.0114	0.9586	-0.2107	0.4696	0.0048	0.9823	0.0104	0.9622
7	Bank Over Draft	-0.0116	0.8289	-0.0128	0.8046	-0.0121	0.8182	-0.0273	0.6424
8	Directors of Financial Intermediary on Board	0.2953	0.0000	0.2634	0.0000	0.2901	0.0000	0.2876	0.0000
9	Shares held by Financial Intermediary	-0.0198	0.2180	0.0060	0.7054	-0.0173	0.2839	-0.0181	0.2505
10	Foreign Bank Financing	0.0251	0.0453	0.0254	0.0364	0.0246	0.0474	0.0241	0.0528
11	Bank Charges Excluding interest Expense	0.1992	0.0000	0.2120	0.0000	0.2269	0.0000	0.2096	0.0000
12	<i>Transaction Cost * Dummy</i>	-0.9862	0.7784	-0.1594	0.2243	0.2207	0.2285	0.4949	0.0087
13	<i>Running Finance * Dummy</i>	0.4144	0.9189	0.3191	0.0518	-0.3351	0.2849	-0.1734	0.4496
14	<i>Markup on Running Finance * Dummy</i>	0.0417	0.9614	-0.4292	0.0002	-0.1168	0.5689	-0.3639	0.0045
15	<i>Demand Finance * Dummy</i>	---	---	---	---	---	---	0.0522	0.8555
16	<i>Commitment Fee for Revolving Credit * Dummy</i>	---	---	---	---	---	---	---	---
17	<i>Bank Over Draft * Dummy</i>	---	---	---	---	---	---	0.1458	0.6512
18	<i>Directors of Financial</i>	-0.2485	0.7963	0.4971	0.0407	0.1912	0.6142	-0.2188	0.7852

19	<i>Intermediary on Board * Dummy Shares held by Financial Intermediary * Dummy</i>	0.0133	0.8974	-0.3485	0.0000	-0.0566	0.5284	-0.0726	0.7672
20	<i>Foreign Bank Financing * Dummy Bank Charges Excluding interest Expense * Dummy</i>	---	---	-0.2052	0.7236	0.4322	0.4582	---	---
21		0.5712	0.9252	-0.0409	0.8036	-0.3999	0.0630	-0.0235	0.9529
	Adjusted R-Squared	0.722		0.740		0.729		0.726	
	F-Statistic	189.082		196.491		185.720		173.707	
	Prob (F-Statistic)	0.000		0.000		0.000		0.000	

4.6.5 Reference Industry: Electronics Industry

With Electronics as a reference industry, the Table 4.15 reflects that the variables of transaction cost, delegated monitoring and information sharing coalitions have a significant impact on growth of firms in the Electronics industry. The Table 4.15 also reflects that none of the interactive terms are statistically significant. This shows that these variables do not influence the slope of the equation significantly differently in the Electronics Industry than other industries. Thus all functions of financial intermediation influence the growth in the electronics industry as they influence all other industries.

The financial intermediation functions and the interactive terms explain 72.2% variation in the growth of the Electronics Industry. The model utilized is statistically significant with an F Statistic of 189.082 and probability of F being 0.000.

4.6.6 Reference Industry: Engineering Industry

With Engineering as a reference industry, the Table 4.15 report that the variables of transaction cost, delegated monitoring and information sharing coalitions have a significant impact on growth of firms in the Engineering industry. The Table 4.15 also reports that the variable-dummy interactive term of (*Running Finance * Engineering Industry Dummy*),

*(Mark Up on Running Finance * Engineering Industry Dummy)*, *(Directors of Financial Intermediary on Board * Engineering Industry Dummy)* and *(Shares Held by Financial Intermediary * Engineering Industry Dummy)* have a significant impact on growth in the Engineering Industry. This reflects that these variables influence the slope of the equation in the Engineering Industry and these interactive terms have a significantly different influence on the growth in the Engineering Industry as compared to all other industries.

The coefficient of *(Running Finance * Engineering Industry Dummy)* has a value of 0.319. The positive coefficient of the interactive term is a reflection that this variable is positively significantly different in Engineering Industry from other industries.

The interactive term of *(Mark Up on Running Finance * Engineering Industry Dummy)* has a negatively significant coefficient of -0.429. It means that it is significantly negatively different from all other industries.

The coefficient of *(Directors of Financial Intermediary on Board * Engineering Industry Dummy)* has been reported as 0.497 reflecting a significantly positive influence in Engineering Industry growth than growth in other industries.

The coefficient of interactive term of *(Shares Held by Financial Intermediary * Engineering Industry Dummy)* has been reported as -0.348 which is a significantly negatively influencing growth in the Engineering Industry. The significance reflects that this variable has a significantly different influence on growth in Engineering Industry as compared with other industries.

The financial intermediation functions and the interactive terms explain 74.0% variation in the growth of the Engineering Industry. The model utilized is statistically significant with an F Statistic of 196.491 and probability of F being 0.000.

4.6.7 Reference Industry: Fixed Line Communications Industry

With Fixed Line Communications as a reference industry, the Table 4.15 reflects that the variables of transaction cost, delegated monitoring and information sharing coalitions have a significant impact on growth of firms in the Fixed Line Communications Industry. The Table 4.15 also reports that the variable-dummy interactive term of (*Bank Charges Excluding Interest Expense * Fixed Line Communications Industry Dummy*) have a negatively significant impact on growth in the Fixed Line Communications Industry, significantly different from the growth in all other industries.

The financial intermediation functions and the interactive terms explain 72.9% variation in the growth of the Fixed Line Communications Industry. The model utilized is statistically significant with an F Statistic of 185.720 and probability of F being 0.000.

4.6.8 Reference Industry: Industrial Metals & Mining Industry

With Industrial Metals & Mining as a reference industry, the Table 4.15 report that the variables of transaction cost, delegated monitoring and information sharing coalitions have a significant impact on growth of firms in the Industrial Metals & Mining industry. The Table 4.15 also reports that the variable-dummy interactive term of (*Transaction Cost * Industrial Metals & Mining Industry Dummy*) and (*Mark Up on Running Finance * Industrial Metals & Mining Industry Dummy*) have a significant impact on growth in the Industrial Metals & Mining Industry. This reflects that these variables influence the slope of the equation in the Industrial Metals & Mining Industry and these interactive terms have a significantly different

influence on the growth in the Industrial Metals & Mining Industry as compared to all other industries.

The coefficient of (Transaction Cost * Industrial Metals & Mining Industry Dummy) has a value of 0.494. The positive coefficient of the interactive term is a reflection that this variable is positively significantly different in Industrial Metals & Mining Industry from other industries.

The interactive term of (Mark Up on Running Finance * Industrial Metals & Mining Industry Dummy) has a negatively significant coefficient of -0.363. It means that it is significantly negatively different from all other industries.

The financial intermediation functions and the interactive terms explain 72.6% variation in the growth of the Industrial Metals & Mining Industry. The model utilized is statistically significant with an F Statistic of 173.707 and probability of F being 0.000.

Table 4.16 reports the effect of Industry-Variable interactive terms reflecting the influence of each variable in each reference industry being significantly different from other industries or not. Four industries, namely Industrial Transportation, Paper & Board, Tobacco and Pharmaceuticals Industry have been reported in Table 4.16. It describes whether particular variables and their interactive terms in the reference industry have a significant difference from other industries or not.

In the theoretical perspective, the statistical results identify the comparative influence of each variable in comparison to relative industries. The interactive terms offer significance in reverence of the comparative usefulness of variables in the specified industries making them dissimilar from others. This allows the reflection of moderating effect of financial intermediation functions across different industries using interactive terms.

In Electronics Industry, the moderating term of all the variables is statistically insignificant. This implies that none of the financial intermediation function influence growth in Electronics Industry differently from other industries. They have the same impact on growth in Electronics Industry as they have in other industries.

In the Engineering Industry, the moderating terms liquidity assurance and delegated monitoring are statistically significant. This shows that these functions influence growth in Engineering Industry differently than in other industries. The moderating term of running finance, which serves as a proxy for liquidity assurance, is found to have a significantly positive influence on growth in the Engineering Industry. This reflects that it has a greater influence on growth in Engineering Industry when compared to other industries. The moderating term for the proxy of delegated monitoring i.e. directors of financial intermediary on board is also found to have a positive influence on growth in Engineering Industry. The significance of the moderating term shows that the delegated monitoring function is apparently more influential in Engineering Industry than in other industries.

In Fixed Line Communication Industry, only the information sharing function moderating term is significant. This shows that this function has different result in Fixed Line Communications Industry as compared with other industries. The negative coefficient of the moderating term reflects that this variable of information sharing function has a lesser influence on growth in Fixed Line Communication Industry as compared to its influence in all other industries. The industries need to promote a better information sharing environment to perform better.

In Industrial Metals and Mining Industry, the moderating term of transaction cost function is significant and positive. This refers to the impact of transaction cost function being higher in Industrial Metals and Mining Industry as compared to other industries. Whereas, the moderating term of Liquidity assurance shows a lesser influence of this function in Industrial Metals and Mining Industry as compared to other industries. The firms in Industrial Metals

and Mining Industry need to utilize the liquidity assurance function more efficiently to perform at par with other industries.

Table 4.16 MODERATING EFFECT OF FINANCIAL INTERMEDIATION FUNCTIONS WITH INDUSTRIAL INTERACTIVE TERMS

S. No	Industry	Industrial Transportation Industry		Paper and Board Industry		Tobacco Industry		Pharmaceutical Industry	
		Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
1	C	3.5139	0.0000	3.4848	0.0000	3.4879	0.0000	3.4763	0.0000
2	Transaction Cost	0.7962	0.0000	0.8006	0.0000	0.8009	0.0000	0.7975	0.0000
3	Running Finance	0.0198	0.3655	0.0126	0.5587	0.0212	0.3331	0.0168	0.4473
4	Markup on Running Finance	-0.0326	0.1163	-0.0321	0.1168	-0.0345	0.0995	-0.0330	0.1150
5	Demand Finance	-0.0053	0.8869	-0.0137	0.6904	-0.0137	0.6957	-0.0113	0.7580
6	Commitment Fee for Revolving credit	0.0135	0.9511	0.0021	0.9923	0.0076	0.9724	0.0106	0.9618
7	Bank Over Draft	-0.0150	0.7801	-0.0144	0.7840	-0.0120	0.8220	-0.0113	0.8332
8	Directors of Financial Intermediary on Board	0.2967	0.0000	0.2825	0.0000	0.2970	0.0000	0.2973	0.0000
9	Shares held by Financial Intermediary	-0.0196	0.2181	-0.0202	0.1942	-0.0177	0.2694	-0.0188	0.2458
10	Foreign Bank Financing	0.0248	0.0485	0.0246	0.0463	0.0246	0.0498	0.0275	0.0363
11	Bank Charges Excluding interest Expense	0.1985	0.0000	0.2064	0.0000	0.1991	0.0000	0.2043	0.0000
12	<i>Transaction Cost * Dummy</i>	0.5796	0.7383	1.8284	0.3380	0.1654	0.8993	0.2004	0.3786
13	<i>Running Finance * Dummy</i>	0.1536	0.7153	0.8387	0.0367	-0.1282	0.8876	0.0194	0.9065
14	<i>Markup on Running Finance * Dummy</i>	-0.1885	0.7932	-0.4357	0.3388	0.0269	0.9016	0.0160	0.9234
15	<i>Demand Finance * Dummy</i>	0.0290	0.9591	---	---	---	---	0.0006	0.9972
16	<i>Commitment Fee for Revolving Credit * Dummy</i>	---	---	---	---	---	---	---	---
17	<i>Bank Over Draft * Dummy</i>	---	---	---	---	---	---	---	---
18	<i>Directors of Financial Intermediary on Board * Dummy</i>	-0.3433	0.6511	1.1389	0.2171	-0.1677	0.7842	-0.1097	0.8084
19	<i>Shares held by Financial Intermediary * Dummy</i>	-0.0833	0.6618	-0.0996	0.8584	0.0065	0.9576	0.0008	0.9944
20	<i>Foreign Bank Financing * Dummy</i>	---	---	---	---	0.1190	0.9796	-0.0281	0.6015

	<i>Bank Charges</i>								
21	<i>Excluding interest Expense * Dummy</i>	-0.5076	0.8180	-2.8771	0.2236	-0.0790	0.9457	-0.2509	0.3807
	Adjusted R-Squared	0.723		0.730		0.722		0.730	
	F-Statistic	179.523		197.003		179.178		197.003	
	Prob (F-Statistic)	0.000		0.000		0.000		0.000	

4.6.9 Reference Industry: Industrial Transportation Industry

With Industrial Transportation as a reference industry, the Table 4.16 reflects that the variables of transaction cost, delegated monitoring and information sharing coalitions have a significant impact on growth of firms in the Industrial Transportation industry. The Table 4.16 also reflects that none of the interactive terms are statistically significant. This shows that these variables do not influence the slope of the equation significantly differently in the Industrial Transportation Industry than other industries. Thus, all functions of financial intermediation influence the growth in the Industrial Transportation industry as they influence all other industries.

The financial intermediation functions and the interactive terms explain 72.3% variation in the growth of the Industrial Transportation Industry. The model utilized is statistically significant with an F Statistic of 179.523 and probability of F being 0.000.

4.6.10 Reference Industry: Paper & Board Industry

With Paper & Board as a reference industry, the Table 4.16 reflects that the variables of transaction cost, delegated monitoring and information sharing coalitions have a significant impact on growth of firms in the Paper & Board Industry. The Table 4.16 also reports that the variable-dummy interactive term of (*Running Finance * Paper & Board Industry Dummy*) have a positively significant impact on growth in the Paper & Board Industry, significantly different from the growth in all other industries.

The financial intermediation functions and the interactive terms explain 73.0% variation in the growth of the Paper & Board Industry. The model utilized is statistically significant with an F Statistic of 197.003 and probability of F being 0.000.

4.6.11 Reference Industry: Tobacco Industry

With Tobacco as a reference industry, the Table 4.16 reflects that the variables of transaction cost, delegated monitoring and information sharing coalitions have a significant impact on growth of firms in the Industrial Transportation industry. The Table 4.16 also reflects that none of the interactive terms are statistically significant. This shows that these variables do not influence the slope of the equation significantly differently in the Tobacco Industry than other industries. Thus, all functions of financial intermediation influence the growth in the Tobacco industry as they influence all other industries.

The financial intermediation functions and the interactive terms explain 72.2% variation in the growth of the Tobacco Industry. The model utilized is statistically significant with an F Statistic of 179.178 and probability of F being 0.000.

4.6.12 Reference Industry: Pharmaceuticals Industry

With Pharmaceuticals as a reference industry, the Table 4.16 reflects that the variables of transaction cost, delegated monitoring and information sharing coalitions have a significant impact on growth of firms in the Pharmaceuticals industry. The Table 4.16 also reflects that none of the interactive terms are statistically significant. This shows that these variables do not influence the slope of the equation significantly differently in the Pharmaceuticals Industry than other industries. Thus, all functions of financial intermediation influence the growth in the Pharmaceuticals industry as they influence all other industries.

The financial intermediation functions and the interactive terms explain 73.0% variation in the growth of the Pharmaceuticals Industry. The model utilized is statistically significant with an F Statistic of 197.003 and probability of F being 0.000.

Table 4.17 reports the effect of Industry-Variable interactive terms reflecting the influence of each variable in each reference industry being significantly different from other industries or not. Three industries, namely Oil & Gas, Food and Textile Industry have been reported in Table 4.17. The table describes whether particular variables and their interactive terms in the reference industry have a significant difference from other industries or not

In the economic viewpoint, the identified statistical results detect the proportional effect of each variable in contrast to other industries. The moderating interactive terms provide implication in respect of the proportional worth of variables in the specified industries making them divergent from others. This permits the replication of moderating effect of financial intermediation functions crossways different industries using variable interactive terms.

In Industrial Transportation Industry, none of the moderating terms are statistically significant. This reflects that in Industrial Transportation Industry, the impact of financial intermediation functions is similar as in all other industries.

In Paper and Board Industry, only the moderating term of liquidity assurance function is found statistically significant. This reflects that this function has a different impact on Paper and Board Industry as compared to other industries. The positive coefficient further elaborates that this function has a greater impact in Paper and Board Industry as compared to other industries. All other moderating terms were found insignificant reflecting similar impact of all other functions in the Paper and Board Industry.

In Tobacco and Pharmaceutical Industry, all of the moderating terms were statistically insignificant reflecting that all the financial intermediation functions have a similar impact on growth in Tobacco and Pharmaceutical Industry as in all other industries. The financial intermediation functions put a similar influence on growth in these industries as in all other industries.

Table 4.17 MODERATING EFFECT OF FINANCIAL INTERMEDIATION FUNCTIONS WITH INDUSTRIAL INTERACTIVE TERMS

S. No	Industry	Oil and Gas Industry		Food Industry		Textile Industry	
		Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
1	C	3.4815	0.0000	3.2673	0.0000	3.7570	0.0000
2	Transaction Cost	0.7956	0.0000	0.8910	0.0000	0.7938	0.0000
3	Running Finance	0.0225	0.3092	0.0669	0.0044	0.0155	0.5193
4	Markup on Running Finance	-0.0371	0.0770	-0.0457	0.0288	-0.0388	0.1148
5	Demand Finance	-0.0082	0.8183	-0.0185	0.5837	-0.0029	0.9415
6	Commitment Fee for Revolving credit	0.0174	0.9369	0.0427	0.8402	0.0009	0.9967
7	Bank Over Draft	-0.0105	0.8444	0.0434	0.4117	-0.0927	0.1954
8	Directors of Financial Intermediary on Board	0.3035	0.0000	0.1963	0.0001	0.2965	0.0000
9	Shares held by Financial Intermediary	-0.0164	0.3128	-0.0217	0.1904	-0.0329	0.0532
10	Foreign Bank Financing	0.0221	0.1131	0.0326	0.0106	0.0237	0.0976
11	Bank Charges Excluding interest Expense	0.1957	0.0000	0.0860	0.0064	0.1851	0.0000
12	<i>Transaction Cost * Dummy</i>	-0.0196	0.8747	-0.4891	0.0000	-0.0694	0.2817
13	<i>Running Finance * Dummy</i>	-0.1395	0.3010	-0.1540	0.0137	0.1313	0.0284
14	<i>Markup on Running Finance * Dummy</i>	0.0624	0.6155	0.1200	0.1238	0.0585	0.1981
15	<i>Demand Finance * Dummy</i>	-0.0443	0.8408	---	---	-0.0808	0.3522
16	<i>Commitment Fee for Revolving Credit * Dummy</i>	---	---	---	---	---	---
17	<i>Bank Over Draft * Dummy</i>	---	---	-0.8844	0.0001	0.1835	0.0826
18	<i>Directors of Financial Intermediary on Board * Dummy</i>	-0.4092	0.1399	0.2530	0.0172	-0.2966	0.0282
19	<i>Shares held by</i>	-0.0306	0.6710	0.0226	0.5911	0.0816	0.0544

	<i>Financial Intermediary * Dummy</i>						
20	<i>Foreign Bank Financing * Dummy</i>	0.0209	0.5991	-0.0017	0.9667	0.0355	0.2270
21	<i>Bank Charges Excluding interest Expense * Dummy</i>	0.2686	0.1181	0.5618	0.0000	-0.0522	0.5205
	Adjusted R-Squared	0.723		0.745		0.733	
	F-Statistic	171.246		190.768		170.860	
	Prob (F-Statistic)	0.000		0.000		0.000	

4.6.13 Reference Industry: Oil & Gas Industry

With Oil & Gas as a reference industry, the Table 4.17 reflects that the variables of transaction cost, delegated monitoring and information sharing coalitions have a significant impact on growth of firms in the Oil & Gas industry. The Table 4.17 also reflects that none of the interactive terms are statistically significant. This shows that these variables do not influence the slope of the equation significantly differently in the Oil & Gas Industry than other industries. Thus, all functions of financial intermediation influence the growth in the Oil & Gas industry as they influence all other industries.

The financial intermediation functions and the interactive terms explain 72.3% variation in the growth of the Oil & Gas Industry. The model utilized is statistically significant with an F Statistic of 171.246 and probability of F being 0.000.

4.6.14 Reference Industry: Food Industry

With Food as a reference industry, the Table 4.17 report that the variables of transaction cost, liquidity assurance, delegated monitoring and information sharing coalitions have a significant impact on growth of firms in the Food industry. The Table 4.17 also reports that the variable-dummy interactive term of (*Transaction Cost * Food Industry Dummy*),

*(Running Finance * Food Industry Dummy)*, *(Bank Over Draft * Food Industry Dummy)*, *(Directors of Financial Intermediary on Board * Food Industry Dummy)* and *(Bank Charges Excluding Interest Expense * Food Industry Dummy)* have a significant impact on growth in the Food Industry. This reflects that these variables influence the slope of the equation in the Food Industry and these interactive terms have a significantly different influence on the growth in the Food Industry as compared to all other industries.

The coefficient of *(Transaction Cost * Food Industry Dummy)* has a value of -0.489. The negative coefficient of the interactive term is a reflection that this variable is negatively significantly different in Food Industry from other industries.

The interactive term of *(Running Finance * Food Industry Dummy)* has a negatively significant coefficient of -0.154. It means that it is significantly negatively different from all other industries.

The coefficient of *(Bank over Draft * Food Industry Dummy)* has a value of -0.884. The negative coefficient of the interactive term is a reflection that this variable is negatively significantly different in Food Industry from other industries.

The coefficient of *(Directors of Financial Intermediary on Board * Food Industry Dummy)* has been reported as 0.253 reflecting a significantly positive influence in Engineering Industry growth than growth in other industries.

The coefficient of interactive term of *(Bank Charges excluding Interest Expense * Food Industry Dummy)* has been reported as 0.561 which is a significantly positively influencing growth in the Food Industry. The significance reflects that this variable has a significantly different influence on growth in Food Industry as compared with other industries.

The financial intermediation functions and the interactive terms explain 74.5% variation in the growth of the Food Industry. The model utilized is statistically significant with an F Statistic of 190.768 and probability of F being 0.000.

4.6.15 Reference Industry: Textile Industry

With Textile as a reference industry, the Table 4.17 report that the variables of transaction cost, delegated monitoring and information sharing coalitions have a significant impact on growth of firms in the Textile industry. The Table 4.17 also reports that the variable-dummy interactive term of (*Running Finance * Textile Industry Dummy*), (*Directors of Financial Intermediary on Board * Textile Industry Dummy*) and (*Shares held by Financial Intermediary * Textile Industry Dummy*) have a significant impact on growth in the Textile Industry. This reflects that these variables influence the slope of the equation in the Textile Industry and these interactive terms have a significantly different influence on the growth in the Textile Industry as compared to all other industries.

The interactive term of (*Running Finance * Textile Industry Dummy*) has a positively significant coefficient of 0.131. It means that it is significantly positively different from all other industries.

The coefficient of (*Directors of Financial Intermediary on Board * Textile Industry Dummy*) has been reported as -0.296 reflecting a significantly negative influence in Textile Industry growth than growth in other industries. The coefficient of interactive term of (*Shares held by Financial Intermediary * Textile Industry Dummy*) has been reported as 0.081 which is a significantly positively influencing growth in the Textile Industry. The significance reflects that this variable has a significantly different influence on growth in Textile Industry as compared with other industries.

The financial intermediation functions and the interactive terms explain 73.3% variation in the growth of the Textile Industry. The model utilized is statistically significant with an F Statistic of 170.860 and probability of F being 0.000.

In the economic perspective, the statistical results of the table distinguish the relative effect of each variable in comparison to other industries. The moderating interactive terms offer inference in respect of the relative substance of variables in the specified industries making them different from others. This enables the reiteration of moderating effect of financial intermediation variables across multiple industries utilizing variable interactive terms.

In Oil and Gas Industry, all the moderating terms are insignificant which means that none of the financial intermediation functions have a statistically different influence on growth in Oil and Gas Industry. All the functions have the similar influence in Oil and Gas Industry as they have in all other industries.

In the Food Industry, the moderating terms of transaction cost function and liquidity assurance function are negatively significant. This reflects that in Food Industry, these variables influence growth but with a lesser impact than in all other industries. The utilization of these functions in the Food Industry, results in a growth lesser than in other industries. The moderating terms for information sharing function and delegated monitoring function are significantly positive reflecting a greater influence on growth in Food Industry. The firms in the Food Industry have a higher growth due to utilization of financial intermediation functions of information sharing and delegated monitoring as compared to other industries.

In Textile Industry, the moderating terms of liquidity assurance function and the delegated monitoring function are significant. They have a different influence on growth in Textile Industry than in other industries. The liquidity assurance function has a higher impact on growth in Textile Industry as compared to other industries. This means that the utilization of

liquidity assurance function results in higher growth in Textile Industry. The moderating term for the delegated monitoring function identifies that the proxy of directors of financial intermediary on board have a significantly negative moderating term. Thus, the presence of directors of financial intermediary on board in firms of Textile Industry, results in lesser growth as compared to other industries. However, if the proxy of number of shares held by financially intermediary is considered, the moderating term identifies a greater impact of delegated monitoring on growth in Textile Industry as compared to other industries. The moderating term of the other variables was found insignificant reflecting that they have the same impact in Textile Industry as in all other industries.

The next section of discussion addresses the third tier of the study i.e. the macroeconomic financial intermediation and its impact on macroeconomic growth.

4.7 Macro Economic Level Analysis - Discussion of Results

For the third level of the study, this section examines the relationship among indicators of financial intermediation and economic growth. The following model has been tested:

$$\text{LnGDP}_t = \beta_0 + \beta_1 \text{LnBCTOBD}_t + \beta_2 \text{LnBD}_t + \beta_3 \text{LnBPC}_t + \beta_4 \text{LnCBA}_t + \beta_5 \text{LnDMBA}_t + \beta_6 \text{LnLL}_t + \beta_7 \text{StructuralDummy}_t + \mu_t$$

...Equation 4.1

Where;

GDP_t	=	Gross Domestic Product in time “t”
BCTOBD_t	=	Bank Credit to Bank Deposit in time “t”
BD_t	=	Bank Deposit in time “t”
BPC_t	=	Bank Private Credit in time “t”
CBA_t	=	Central Bank Assets in time “t”
DMBA_t	=	Deposit Money Bank Assets in time “t”
LL_t	=	Liquid Liabilities in time “t”

Structural Dummy = Structural Dummy for Financial Liberalization
D=0 (Pre Liberalization Phase 1960-1990)
D=1 (Post Liberalization Phase 1991-2013)

Table 4.18 reports the results of unit root test applied to determine the order of integration among time series data. ADF Test and Phillips-Perron Test have been used at level and first difference under assumption of constant and trend. The stationarity of data is tested using unit root test. The null hypothesis of a unit root is tested using the Augmented Dickey-Fuller (ADF) Test. The ADF test examines the presence of a unit root in an autoregressive model. A basic autoregressive model is $Z_t = \alpha Z_{t-1} + u_t$, where Z_t is the variable studied, t is the time period, α is a coefficient, and u_t is the disturbance term. The regression model can be written as $\Delta Z_t = (\alpha - 1)Z_{t-1} + u_t = \delta Z_{t-1} + u_t$, where Δ is the first difference operator. Here, testing for a unit root is equivalent to testing $\delta = 0$. The ADF tests assume that the error terms are statistically independent and have a constant variance. This assumption may not be true.

Table 4.18 Unit Root Analysis

ADF - Augmented Dickey-Fuller Test Statistics			
Variable	Description	t-statistics	
		AT LEVEL [I(0)]	AT FIRST DIFFERENCE [I(1)]
BCTOBD	Bank Credit to Bank Deposit	-0.486039	-6.71229
BD	Bank Deposit	-3.353685	-16.39774
BPC	Bank Private Credit	-3.910964	-4.028953
CBA	Central Bank Assets	-1.702931	-5.80198
DMBA	Deposit Money Bank Assets	-3.257147	-5.777768
LL	Liquid Liabilities	-2.880593	-4.951333
SD	Structural Dummy	-0.854074	-7.141428
GDP	Gross Domestic Product	2.970526	-4.978281

Table 4.18 shows that some series are stationary at level while other series become stationary at first difference. Results indicate partial stationary at level i.e. I (0) while partial stationary at first difference i.e. I (1). Thus ARDL approach to co-integration method is used to capture the long term relationship. It is worth mentioning that results are robust under assumption of

constant trend as well as no trend. This testing is necessary to avoid the possibility of spurious regression as Ouattara (2004) reports that bounds test is based on the assumption that the variables are I (0) or I (1) so in the presence of I (2) variables the computed F statistics provided by Pesaran et al. (2001) becomes invalid.

4.7.1 Autoregressive Distribution Lag (ARDL) Approach

Now causal nexus among the macroeconomic variables has been studied by employing Autoregressive Distribution Lag (ARDL) approach proposed by Peseran et al. (2001).

Table 4.19 reports the diagnostics for the data utilized in the study.

Table 4.19

Diagnostic Tests

Test Statistic	LM Version	F Version
A. Serial Correlation	CHSQ (1) = 0.076 [0.783]	F (1,41) = 0.061 [0.806]
B. Functional Form	CHSQ (1) = 0.470 [0.493]	F (1,41) = 0.381 [0.540]
C. Normality	CHSQ (2) = 2.150 [0.341]	Not Applicable
D. Heteroscedasticity	CHSQ (1) = 2.548 [0.110]	F (1,49) = 2.577 [0.115]

A:Lagrange multiplier test of residual serial correlation

B:Ramsey's RESET test using the square of the fitted values

C:Based on a test of skewness and kurtosis of residuals

D:Based on the regression of squared residuals on squared fitted values

Above results indicate that econometric problems like autocorrelation, conflict to normal distribution has not been observed. Similarly, no model specification error exists with reference to Functional form. There is also no issue with the heteroscedasticity in the data.

Table 4.20 below exhibits results of ARDL Model based on Schwarz Bayesian Criterion.

Table 4.20**Autoregressive Distributed Lag Estimates**

ARDL (1,2,0,0,0,0,0) selected based on Schwarz Bayesian Criterion

Dependent variable in LNGDP

51 observations used for estimation from 1963 to 2013

Regressor	Coefficient	Standard Error	T-Ratio [Prob.]
LNGDP (-1)	0.971	0.012	80.392 [0.000]
LNBCTOBD	0.179	0.061	2.934 [0.005]
LNBCTOBD (-1)	0.168	0.783	2.144 [0.038]
LNBCTOBD (-2)	0.154	0.052	-2.866 [0.006]
LNBD	0.169	0.116	1.453 [0.153]
LNCBA	-0.025	0.012	-1.966 [0.056]
LNDBMA	0.160	0.082	1.956 [0.057]
LNLL	-0.071	0.074	-0.968 [0.338]
LNPC	-0.255	0.097	-2.610 [0.012]
SD	0.007	0.023	0.335 [0.739]
F-Stat	F[8, 42]	8340.5 [0.000]	

The result of the bound testing approach for Co-integration show that the calculated F-statistics is 8340.5 which is significant at 5 percent level of significance implying that the null hypothesis of no co-integration cannot be accepted and there exists co-integration relationship among the variables in this model.

An analysis of above Table 4.20 indicates that intermediation variables significantly explain economic growth. F statistics is also significant at 5% which indicates overall goodness of fit.

Table 4.21 displays the results long term coefficients under ARDL Approach. Results indicate the variables that show a significant long run effect on economic growth in Pakistan.

Table 4.21 Estimated Long Run Coefficient using ARDL Approach

ARDL (1,2,0,0,0,0,0,0) selected based on Schwarz Bayesian Criterion

Dependent variable in LNGDP

51 observations used for estimation from 1963 to 2013

Regressor	Coefficient	Standard Error	T-Ratio [Prob.]
LNBCTOBD	6.947	1.241	5.596 [0.000]
LNBD	5.978	2.649	2.256 [0.029]
LNCBA	-0.884	0.388	-2.274 [0.028]
LNDMBA	5.657	2.182	2.592 [0.013]
LNLL	-2.532	2.180	-1.161 [0.252]
LNPC	-8.993	1.506	-5.969 [0.000]
Structural Dummy	-1.298	2.045	-0.634 [0.529]

The estimated long run coefficients identify the presence of the long run significance of Bank Credit to Bank Deposits, Bank Deposits, Central Bank Assets, Deposit Money Bank Assets and Bank Private Credit on economic growth in Pakistan. While the coefficients of Liquid Liabilities and the Structural Dummy for Financial Liberalization identifies an insignificant relationship with economic growth. Thus, it can be stated that the financial liberalization of the 1990's in the country could not effectively influence the macro economic growth in the Pakistani case. This can be attributed to ineffective policies as well as poor implementation by regulatory institutions.

Error Correction Representation of above long run relationship is reported in Table 4.22 which captures the short-run dynamics of relationship.

Table 4.22 Error Correction Representation for the Selected ARDL Model

ARDL (1,2,0,0,0,0,0,0) selected based on Schwarz Bayesian Criterion

Dependent variable in dLNGDP

51 observations used for estimation from 1963 to 2013

Regressor	Coefficient	Standard Error	T-Ratio [Prob.]
dLNBCTOBD	0.179	0.061	2.934 [0.005]
dLNBCTOBD1	0.150	0.052	2.866 [0.006]
dLNBD	0.169	0.116	1.453 [0.153]
dLNCBA	-0.025	0.012	-1.966 [0.056]
dLNDMBA	0.160	0.082	1.956 [0.057]
dLNLL	-0.071	0.074	-0.968 [0.338]
dLNPC	-0.255	0.097	-2.610 [0.012]
dStructural Dummy	0.007	0.023	0.335 [0.739]
ECM(-1)	-0.028	0.012	-2.346 [0.024]
R-Squared	0.381	R-Bar-Squared	0.263
S.E of Regression	0.020	F-Stat F[7,43]	3.687 [0.003]
Mean of Dependent Variable	0.050	S.D of Dependent Variable	0.023
Residual Sum of Squares	0.017	Equation Log Likelihood	131.094
Akaike Info. Criterion	122.094	Schwarz Bayesian Criterion	113.401
DW-Statistic	1.921		

$$\begin{aligned}
 \text{ECM} = & \text{GDP} - 6.947 * \text{BCTOBD} - 5.978 * \text{BD} + 0.884 * \text{CBA} - 5.657 * \text{DMBA} + 2.532 * \text{LL} \\
 & + 8.993 * \text{PC} + 1.298 * \text{SD}
 \end{aligned}$$

.....Equation 4.1

The error correction model based upon ARDL approach establishes that changes in Bank Credit to Bank Deposit, Central Bank Assets, Deposit Money Bank Assets, and Private Credit have a significant short term effect. The studies from Trew (2006), Beck et al. (2008), Demirguc-Kunt and Levine (2008) Cihak, Demirguc-Kunt, Feyen and Levine (2013) provide

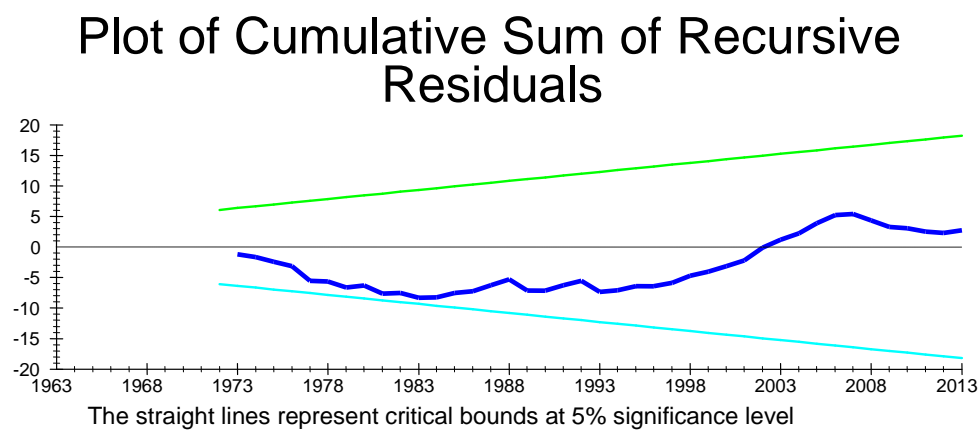
literary support in favor of the efficient financial system for growth. Thus, the identified results can be interpreted with economic significance of macroeconomic financial intermediation variables. The significant variables identified provide evidence that these have a significance towards short term economic growth in the Pakistani case.

ECM (-1) is one period lag value of error terms that are obtained from the long-run relationship. The coefficient of ECM(-1) indicates how much of the disequilibrium in the short-run will be fixed (eliminated) in the long run. The Coefficient of the ECM term suggests that adjustment process is quite slow and 3% of the previous year's disequilibrium in economic growth from its equilibrium path will be corrected in the current year. Thus, a slow adjustment is observed in the long term in Pakistan.

4.7.2 CUSUM and CUSUMSQ Plots

Finally, CUSUM and CUSUMSQ plots are drawn to check the stability of short run and long run coefficients in the ARDL error correction model. Figure 4.1 shows the cumulative sum of recursive residuals whereas Figure 4.2 displays the cumulative sum of squares of recursive residuals.

Figure 4.1 The Cumulative Sum of Recursive Residuals



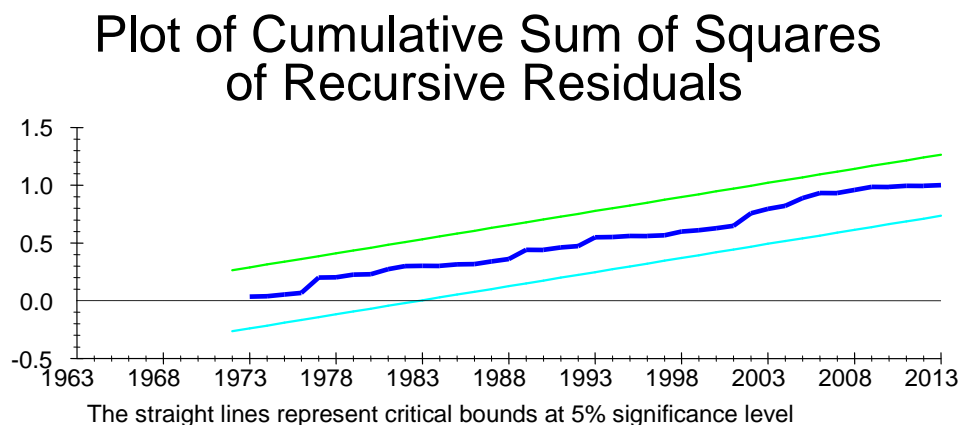


Figure 4.2 Cumulative Sum of Squares of Recursive Residuals.

Figure 4.1 & 4.2 show that both CUSUM and CUSUMSQ are within the critical bounds of 5% so it indicates that the model is structurally stable.

4.7.3 Pair-wise Granger Causality Tests

Having empirically tested the data set using ARDL, Causality testing is performed to analyze the lead-lag relationship between the series. Table 4.23 provides the statistics of Pair wise Granger causality. The returns of the series was calculated by $R_t = (P_t - P_{t-1}) / P_{t-1}$. The tests provide the following results.

Table 4.23 Pairwise Granger Causality Tests

Null Hypothesis	F-Statistic	Prob.	Hypothesis	Causality
Δ GDP per Capita does not Granger Cause Δ Bank Credit to Bank Deposit	4.3327	0.043	Reject	Uni-Directional
Δ Bank Credit to Bank Deposit does not Granger Cause Δ GDP per Capita	0.12532	0.7249	Accept	
Δ GDP per Capita does not Granger Cause Δ Bank Deposit to GDP	11.1052	0.0017	Reject	Uni-Directional
Δ Bank Deposit to GDP does not Granger Cause Δ GDP per Capita	0.49636	0.4847	Accept	
Δ GDP per Capita does not Granger Cause Δ Bank Private Credit to GDP	9.37125	0.0037	Reject	Uni-Directional

Δ Bank Private Credit to GDP does not Granger Cause Δ GDP per Capita	0.42502	0.5177	Accept	
Δ GDP per Capita does not Granger Cause Δ Central Bank Assets to GDP	7.77544	0.0077	Reject	Uni-Directional
Δ Central Bank Assets to GDP does not Granger Cause Δ GDP per Capita	1.35989	0.2496	Accept	
Δ GDP per Capita does not Granger Cause Δ Deposit Money Bank Assets to GDP	6.43711	0.0146	Reject	Uni-Directional
Δ Deposit Money Bank Assets to GDP does not Granger Cause Δ GDP per Capita	0.25703	0.6146	Accept	
Δ GDP per Capita does not Granger Cause Δ Liquid Liabilities to GDP	5.34608	0.0253	Reject	Uni-Directional
Δ Liquid Liabilities to GDP does not Granger Cause Δ GDP per Capita	1.04649	0.3117	Accept	

The pair wise Granger Causality Test shows that GDP per Capita causes a higher level of Bank Credit to Bank Deposits rather the other way around. The nexus between growth and finance reflect that where growth occurs, finance follows. Similarly, the economic growth in terms of GDP per Capita results in higher level of Bank Deposits to GDP. The causality remains same for the growth in terms of GDP per Capita which causes higher levels of Bank Private Credit to GDP. Since the per capita gross domestic product is higher, the proportion of bank private credit to GDP also rises. The central bank assets to GDP also rise with increase in the GDP per capita. The GDP per capita causes the rise in central bank assets. GDP per capita causes deposit money bank assets to GDP to increase. The rise in GDP per capita results in higher level of deposit money bank assets. Lastly, the Liquid Liabilities to GDP increase when the GDP per Capita increases. Thus, in all the above causality relationships the selected macroeconomic intermediated variables does not granger cause GDP per Capita rather the GDP per Capita results in higher levels of macroeconomic intermediated variables. The results of the above reflect a unidirectional causality which is supported by the findings of Koivu (2002) and Christopoulos and Tsionas (2004).

Chapter 05

Summary, Conclusion and Recommendations

In this study impact of financial intermediation functions on growth has been empirically tested across three tiers i.e. firm level, industry level and the macroeconomic level. This analytical study analyzes empirically gathered data to analyze the impact of financial intermediation functions on micro and macro level growth. The study utilizes annual data for the firm, industry and economic level and applies statistical and econometric techniques to quantitatively assess the relationship under study. Audited financial statements of 130 companies listed at the Karachi Stock Exchange during the year 2004-2013 serves as the data source for the firm level analysis.

5.1 Summary for Firm Level Study

The company wise panel of 130 companies across 10 years was created. Panel data testing techniques were applied starting from the Common Effect Modeling. Further, the panel was tested for Fixed Effect or Variable Effect across the panel. The results of the redundant fixed effect testing and Hausman test reflect that the Fixed Effect Model is better able to capture the impact of financial intermediation functions of firm growth. The fixed effect results are significant which show that the impact of financial intermediation functions on growth is fixed across each panel. The proxies for the variables of Transaction Cost, Liquidity Assurance and Information Sharing Coalitions have a significant impact on firm level growth. The Delegated Monitoring is found having a statistically insignificant impact on firm growth. This is a reflection that the delegated monitoring function does not empirically influence firm growth. This can be attributed to inefficient corporate governance mechanism adopted by the firms.

Each firm has a fixed effect which is different from other firms in the panel. The firms differ in their size and structure and in need of financial services needed. The results are in alignment with the study by Chauvet and Jacolin (2015) that firms with higher level of

financial inclusion i.e. access to financial services have a positive influence on firm growth. The intermediaries are present in the system to facilitate the firms for rapid growth. Thus, at the firm level, firms need to utilize the functions offered by the financial intermediaries much more efficiently so as to enable them to raise their growth levels and grow.

5.2 Summary for Industry Level Study

Industry wise analysis is conducted for the second tier of the study. The company wise panel data is converted into industry wise panels. The data for 130 companies utilized in the firm level analysis are grouped into 15 industries. The panel data analysis for the second tier of the study reveals that each industry has a different effect from the other industry. The fixed effect model is found significant through the redundant fixed effect testing and is verified through Hausman test.

The industry wise panel data is then examined by creating industrial dummy for each industry. All the industries are explained with relevance to the reference industry. Each industry is taken as a reference industry individually and then impact of financial intermediation is observed in each industry being similar or different from other industries. The impact of financial intermediation functions on growth in different industries with reference to the reference industry has been summarized in the following table. The highlighted areas in Table 5.1 reflect the significantly different industries from the reference industry.

Table 5.1

Summary of Industry Wise Effect with Reference Dummy

S. No	Reference Industry	Auto Parts	Chemicals	Construction	Electricity	Electronics	Engineering	Fixed Line Communication	Industrial Metals and Mining	Industrial Transportation	Paper and Board	Tobacco	Pharmaceutical	Oil and Gas	Food	Textile
1	Auto Parts															
2	Chemicals															
3	Construction															
4	Electricity															
5	Electronics															
6	Engineering															
7	Fixed Line Communication															
8	Industrial Metals and Mining															
9	Industrial Transportation															
10	Paper and Board															
11	Tobacco															
12	Pharmaceutical															
13	Oil and Gas															
14	Food															
15	Textile															

The Auto Parts Industry is significantly different from the Fixed Line Communications Industry, Industrial transportation Industry, Paper and Board Industry, Tobacco Industry, Oil and Gas Industry and Textile Industry. The Chemicals Industry was statistically different

from Fixed Line Communications Industry, Paper and Board Industry, Tobacco Industry and Textile Industry. Construction Industry is statistically different from Fixed Line Communications Industry, Paper and Board Industry, Food Industry and Textile Industry. The Electricity Industry is statistically different from Fixed Line Communications Industry, Paper and Board Industry and Textile Industry. The Electronics Industry is statistically different from Fixed Line Communications Industry and Paper and Board Industry. The Engineering Industry is statistically different from Fixed Line Communications Industry, Paper and Board Industry and Textile Industry. The Fixed Line Communications Industry was found being statistically different from all the other industries. Industrial Metals and Mining Industry is statistically different from Fixed Line Communication and Paper and Board Industry.

The Industrial Transportation Industry is found being different from Fixed Line Communication, Paper and Board Industry and Food Industry. The Paper and Board Industry was statistically different from all other industries. The Tobacco Industry is found statistically different from Auto Parts Industry, Chemicals Industry, Fixed Line Communications, Paper and Board and Food Industry. The Pharmaceuticals Industry is found being different from Fixed Line Communications Industry and Paper and Board Industry. Oil and Gas Industry was statistically different from Fixed Line Communications Industry, Paper and Board Industry, Food Industry and Textile Industry. The Food Industry was statistically similar to the Auto Parts, Chemicals, Electricity, Electronics, Engineering, and Industrial Metals and Mining Industry. Lastly, the Textile Industry was statistically similar to Electronics Industry, Industrial Metals and Mining, Industrial Transportation, Tobacco and Pharmaceuticals Industry.

In the next phase, the industry wise panel data is explored for examining the moderating effect of the industry-variable interactive term to see whether a particular function moderates the impact of financial intermediation functions in a specific industry or not. All the functions are observed with relevance to the reference industry to empirically test the moderating impact of financial intermediation in each industry. The table 5.2 reflects the significantly

different financial intermediation functions in specific industries which are significantly moderating the growth in the reference industry.

Table 5.2 Summary of the Moderating Effect of Financial Intermediation Functions with Industrial Interactive Terms

S. No	Industry Variable Moderating Term	Auto Parts	Chemicals	Construction	Electricity	Electronics	Engineering	Fixed Line Communication	Industrial Metals and Mining	Industrial Transportation	Paper and Board	Tobacco	Pharmaceutical	Oil and Gas	Food	Textile
1	Transaction Cost		+	-											-	
2	Running Finance						+				+				-	+
3	Markup on Running Finance						-		-							
4	Demand Finance															
5	Commitment Fee for Revolving credit															
6	Bank Over Draft														-	
7	Directors of Financial Intermediary on Board		-		-		+								+	-
8	Shares held by Financial Intermediary						-									+
9	Foreign Bank Financing															
10	Bank Charges Excluding interest Expense		-	+	-			-							+	

Table 5.2 summarizes the effect of Industry-Variable interactive term reflecting the influence of each variable in each industry being significantly different or being similar in other industries. The Auto Parts Industry has none of the variables having a significantly different impact than in other industries. All the variables have a similar impact on the Auto Parts Industry as they have on all other industries. In the Chemicals Industry, the variables of Transaction Cost, Delegated Monitoring and Information Sharing Coalitions have a

significantly different impact than other industries. In the Construction Industry, the variables of Transaction Cost and Information Sharing Coalitions have a statistically different impact than in other industries. In the Electricity Industry, the variables of Delegated Monitoring and Information Sharing Coalitions have a different influence. In the Electronics Industry all the variables of the study have a similar impact as they have in all other industries. For Engineering Industry, variables of Liquidity Assurance and Delegated Monitoring have a different impact than in other industries. In Fixed Line Communications Industry only the variable of Information Sharing Coalition has a significantly different impact. For Industrial Metals and Mining Industry, the interactive terms for Transaction Cost and Liquidity Assurance are significant which shows that these have a different influence in this specific industry than other industries.

The Industrial Transportation Industry had none of the variables having a significantly different impact. While in the Paper and Board Industry, the variable of Liquidity Assurance has a significantly different impact as in other industries. In Tobacco, Pharmaceuticals and Oil and Gas Industry, none of the interactive terms was significant which reflects that none of the variables had a different influence on growth in these industries. The Food Industry has a statistically different coefficient for the interactive terms of Transaction Cost, Liquidity Assurance, Delegated Monitoring and Information Sharing Coalitions which shows that these variables have a different impact in Food Industry than in other industries. Lastly, the Textile Industry shows that the interactive terms of Liquidity Assurance and Delegated Monitoring have a different impact in Textile Industry than in all other industries. From the second tier, it is obvious, that industries also vary from each other and the need for financial services in each industry may vary. But it is also evident that where financial intermediation functions have been utilized, the growth is higher. Thus, industries need to make arrangements with regulatory authorities and financial institutions to facilitate them in utilizing services from the financial intermediaries for accelerated growth.

5.3 Summary for Macroeconomic Level Study

In the third tier of the study, macro-economic data is used to assess the impact of financial intermediation on macro level growth. Annual data from 1960-2013 is taken for the third level of the study. The results reflect that in the Pakistani data set and with the variables under study, there exists a co-integration between financial intermediation variables and economic growth. The structural dummy placed to observe the impact of financial liberalization in the country after 1990's reflects an insignificant impact on growth. The results of the study find support from the works of Deidda and Fattouh (2002) who states that in low income countries there is no significant relationship between financial development and growth whereas in growing economies and high income countries they find that this relationship is positive and significant. In the Pakistani case, with the growing economy, the evidence reflects significant growth.

However, the works of Christopoulos and Tsionas (2004) finds no evidence of short run causality between financial deepening and output. This argument also provides the support for the findings of Granger Causality tests. The evidence on insignificance of structural dummy finds support from the work of Rioja and Valey (2004) who state that in countries with low financial development, additional improvements in the financial markets do not have a clear effect on growth. There are positive linkages between financial intermediation indicators and economic growth in Pakistan both in short and long term.

The present study also finds support from Beck et al. (2008) who states that bank lending to enterprises, not to households, drives the positive impact of financial development on economic growth and from the works of Rousseau and Wachtel (2011) who state that, the effect of financial depth on growth disappears with time. The evidences conclude that the linkage between financial intermediation and economic growth is not a universal phenomenon but results from the Pakistani case find a significant interaction with economic growth in the developing country of Pakistan.

5.4 Directions for Future Research

The research is concluded with the study of Yusifzada and Mammadova (2015) which state that financial depth does not fully reflect how well the financial intermediaries serve to economic agents in stimulating economic growth. Rather, additional aspects of financial system such as access, efficiency and stability should be taken into account in order to shed light into the relationship between finance and economic growth. Thus, the policy makers need to focus on these areas of access, efficiency and stability for provoked growth in the Pakistani economy for further study.

The study develops several proxies for capturing the effect of financial intermediation functions in light of the theoretical and logical background from financial theory. However, further detailing can be made to introduce improved mechanisms for assessment of financial intermediation functions alongside the identification of new financial intermediation functions for inclusion in future studies.

The study can be provided a new dimension by the inclusion of the functionality of Islamic Banks for provision of intermediated functions for firms. The functions performed specifically by the Islamic Financial Intermediaries and their impact on growth can be considered in future researches.

5.5 Limitations of the Study

The study has certain limitations. Data used for the study is for a specified time frame due to the availability and access issues. For firm and industry level, Annual reports from 2004-2013 were collected. While for the macroeconomic perspective annual data from 1960-2013 was collected. Secondly, limited empirical support is available in literature specifically for the firm level. This makes it difficult to relate the findings to previous works. To address this, theoretical support from contemporary finance theory has been utilized.

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Appendix 1

List of Industries and Companies

Industry 1	Automobile Industry	
1	Agri Autos	1
2	Atlas Battery	2
3	Atlas Honda	3
4	General Tire	4
5	Ghani Automobile	5
6	Pak Suzuki	6
7	Sazgar Autos	7
8	Toyota Indus	8
Industry 2	Chemicals Industry	
1	Arif Habib Chemicals	9
2	Bawnay Air	10
3	BIAFO	11
4	Dawood Hercules	12
5	Engro Polymer	13
6	FFBQ	14
7	FFC	15
8	ICI	16
9	Ittehad Chemicals	17
10	Linde Chemicals	18
11	Nimir Chemicals	19
12	Pak PVC	20
13	Wah Chemicals	21
Industry 3	Construction Industry	
1	Attock Cement	22
2	BAL Glass	23
3	Berger	24
4	Bestway Cement	25
5	Dadex	26
6	Dandot Cement	27
7	DGK Cement	28
8	EMCO	29
9	Fauji Cement	30
10	FECTO Cement	31
11	Flying	32
12	Gharibwal Cement	33
13	Karam	34
14	Kohat Cement	35

15	MD Dadabhoy Cement	36
16	MD Dadabhoy Construction	37
Industry 4		Electricity Industry
1	Hub Power	38
2	Japan Power	39
3	Kohinoor Energy	40
4	Kot Addu Power	41
5	SEPCOL	42
Industry 5		Electronics & Electrical Industry
1	Pakistan Cables	43
Industry 6		Engineering Industry
1	Bolan Castings	44
2	Gandhara Industries	45
3	Hino	46
4	KSB Pumps	47
5	PEC	48
Industry 7		Fixed Line Communications Industry
1	Pak Data	49
2	TeleCard	50
3	World Call	51
Industry 8		Industrial Metals and Mining Industry
1	Crescent Steel	52
2	Huffaz Seamless Pipes	53
3	Siddique Sons Tin Plates	54
Industry 9		Industrial Transportation Industry
1	PICT	55
2	PNSC	56
Industry 10		Paper & Board Industry
1	Century	57
2	Security	58
Industry 11		Tobacco Industry
1	Khyber Tobacco	59
2	Philip Morris	60
3	PTC	61
Industry 12		Pharmaceutical Industry
1	Feroz Sons	62
2	GSK	63
3	Sanofi	64
4	Wyeth	65
Industry 13		Oil & Gas Industry
1	Burshane	66
2	BYCO	67
3	Mari Petroleum	68

4	OGDC	69
5	Pak Oil	70
6	PPL	71
7	PSO	72
8	Shell	73
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Industry 14		Food Industry
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1	Al Abbass Sugar	74
2	Chashma Sugar	75
3	Clover Pakistan	76
4	Colony Sugar	77
5	Faran Sugar	78
6	Haseeb Waqas Sugar	79
7	Ismail Industries	80
8	JDW	81
9	Kohinoor Sugar	82
10	Mirpurkhas Sugar	83
11	Mirza Sugar	84
12	National Foods	85
13	Nestle Pakistan	86
14	Noon Pakistan	87
15	Noor Pakistan	88
16	Pangrio Sugar	89
17	Premier Sugar	90
18	Punjab Oil	91
19	Quice Foods	92
20	Rafhan Maize	93
21	Thal Industries	94
22	Unilever Pakistan	95
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Industry 15		Textile Industry
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1	ADM Textile	96
2	Ahmed Hassan Textile	97
3	Al Qadir Texile	98
4	Asim Textile	99
5	Azgard9	100
6	Bannu Textile	101
7	Bhanero Textile	102
8	Bilal Textile	103
9	Blessed Textile	104
10	Crescent Fibres	105
11	Din Textile	106
12	Faisal Textiles	107
13	Gadoon Textiles	108
14	Ghazi Textile	109
15	ICC	110

16	Indus Dyeing	111
17	JDM Textile	112
18	Jubilee Textile	113
19	Kohinoor Textile	114
20	Landmark Textile	115
21	Mahmood Textile	116
22	Nadeem Textile	117
23	Nishat Chunnian Textile	118
24	Premium Textile	119
25	Quality Textile	120
26	Quetta Textile	121
27	Ruby Mills	122
28	Rupali Textile	123
29	Salman Noman Textile	124
30	Sana Textile	125
31	Sapphire Fibres	126
32	Sapphire Reliance	127
33	Shah Taj Textile	128
34	Shehzad Textile	129
35	Zephyr Textile	130
