COMPARATIVE ANALYSIS OF FINANCIAL SYSTEMS IN CONTEXT OF GLOBAL FINANCIAL CRISIS

Ghulam Mujtaba Chaudhary
Assistant Professor, Department of Business Administration, University of Kotli, AJ&K
Ph.D Scholar, International Islamic University, Islamabad, Pakistan

Zaheer Abbas
Assistant Professor, Faculty of Management Sciences, International Islamic University, Islamabad, Pakistan

Jamshed Khurshid Meer
Senior Manager for Portfolio Management & Investment, Standard Chartered Bank, Ltd, Karachi

ABSTRACT

Purpose: This study is aimed at analysing the relative effect of global financial crisis across diverse category countries.
Methodology/Sampling: The top 50 countries of world are selected and categorized on the basis of financial structure and economic development level. The empirical analysis is based on panel data methodology and appropriate dummies are inserted to capture overall as well as relative effect of crisis.
Findings: The study finds a substantial overall effect of crisis on economic progression of sample countries. The significance divergence for different categories is, however, not observed.
Conclusion: The traditional dichotomy of financial systems doesn't matter much in modern, globalized world. The inter linkages and interdependencies among intermediaries and markets exists across globe that contributed in rapid propagation of shocks.
Practical Implications: The results of study can facilitate in better and systematic choice of financial system instead of a random one.

KeyWords:*Financial System, Economic Development, Global Financial Crisis, Panel Data*

Jel Classification: B17, C23, G01

*The material presented by the author does not necessarily portray the view point of the editors and the management of the Ilma University – Formerly IBT

1. Ghulam Mujtaba Chaudhary : adfuajk@yahoo.com
2. Zaheer Abbas : zaheerabbas@iiu.edu.pk
3. Jamshed Khurshid Meer : Jamshed.meer@gmail.com

JBS is published by the Ilma University – Formerly IBTMain
Ibrahim Hydri Road, Korangi Creek, Karachi-75190, Pakistan

 ISSN 2414-8393

1. INTRODUCTION

The presence of established and developed financial system ever played a leading role in economic growth of countries. It facilitates transfer and allocation of resources to maximum possible level and thereby enhances the overall well-being of individuals. The developed financial system provides required capital, facilitates financial innovation, and assists in achieving greater productivity and economic advancement (Thakor, 1996). An effective financial system is essential and significant contribut orto financial stability of a country. It smoothens economic transactions, allocate capital efficiently, and construct sinvestors' supportive environment (Arshad & Khan, 2007; Klemkosky, 2013).The intermediaries and markets are principal components of a financial system. The financial intermediaries assists saving surplus and deficient units in transfer, proper allocation, and effectual deployment of national resources (Allen &Santomero, 2001). Their presence can also facilitate in seeking relative advantage through economies of scale, dissemination of low cost information, and minimization of transaction overheads (Benston & Smith, 1976). The informational advantages of intermediation activities were proposed by Leland and Pyle (1977) while their role as delegated monitors was highlighted by Diamond (1984).

The financial intermediaries have a historical background and banks existed far before the establishment of markets. Siddiqui (2003) argued that banks existed form the times of recognizing money as medium of exchange. The banks facilitated to fulfill financing requirements of enterprises along with other services. As the time progressed and economic activities expanded, it was realized that banks alone cannot bridge the growing financing requirements. The markets were, therefore, created where numerous opportunities of financing and investments for individuals and enterprises are present. The financial markets got significant importance and shown tremendous growth in last few decades that transformed the financial systems dramatically (Allen &Santomero, 1998). The creation of markets also induced banks to review and reconsider their traditional role of deposits and lending. It also helped to overcome the reputational issues, as banks were largely extending loans to the borrowers of good reputation only (Thakor, 1996). The banks and markets became stronger with the progression of time and economies started relying upon these strongly.

The relative importance of intermediaries and markets has been examined critically from last many decades. The overall debate in this area is related to two major schools of thoughts. The one approach, most common in 19th century, advocated for leading role of banks in economies. This has been referred as bank based view and it highlighted the supremacy and importance of banks. The banks were assigned much weight age and assumed to be the major contributors in operations and management of countries. The positive and significant contribution of banks has been supported by Schumpeter (1911/1934), Diamond and Dybvig (1983), Diamond (1984), Stiglitz (1985), Bencivenga and Smith (1991), Modigliani and Perotti (2000), Chakraborty and Ray (2006), Bertocco (2008), Tabb(2010). The second school of thought is basically the modern view and is referred to as market based view. This view highlighted the importance and viability of markets in economy. It also criticized bank financing for being expensive and advocated for dominance of markets. Its role in mobilization of savings, involvement of large number individuals, and serving as alternate of bank financing has been highlighted. The major contributors in this domain were Rajan(1992), Allen(1993), Greenwood and Smith (1997), Rajanand Zingales(1998), Shen and Huang (2003). There is, however, another group of researchers and economists who

 ISSN 2414-8393

proposed for irrelevance of financial structure. They instead suggested for better financial services and creation of conducive legal environment for overall improvements. The advocates of these include Merton and Bodie(1995), Boyd and Smith (1998), La Porta, Lopez-de-Silanes, Shleifer, and Vishny(1998, 2000).

The debate of comparative financial systems is very old and dated back to the study of Bagehot (1873). It, however, started systematically with study of Goldsmith (1969). The initial debate in this area focused four developed countries of the world and was backed up by two broader models.The German model apportioned higher weight age to intermediaries while U.S. model to financial markets (Allen & Gale, 1995). The broader cross country studies in this domain were initiated by Demirguç-Kunt and Levine (1999), Levine (2002). The number of researchers including Allen and Gale (2000),Beck and Levine (2004), Chakraborty and Ray (2006), Solo (2013), Apergis, Artikis, and Kyriazis (2015) contributed in this debate. It has been attempted mainly in previous studies to relatively examine the effect of financial structure on economic growth of countries. The present study is an attempt to contribute in this discussion through relative analysis of financial systems in context of global financial crisis. The crisis started from U.S. with the burst of housing bubble and collapse of some major financial institutions in last quarter of 2007. It got momentum and rapidly transmitted across developed and developing countries of the world (Bahiti, Shkurti, &Babasuli, 2011). The financial institutions collapsed and stock markets crashed in many countries and its affects were spread to the real economy (Silipo, 2011). The effect was so severe that it was felt everywhere and even at individual level. This crisis has been referred as the largest and deepest crisis after the great depression (Moroianu &Belingher, 2011).

The relative examination of sample countries in backdrop of global financial crisis is the focus of current study. In order to study the phenomenon, the countries are initially placed into different categories. The basis of categorization is the structure of financial system and level of economic development. The classification of development level is adopted from an official publication while a structure index is constructed to categorize the countries on the basis of their financial structure. The indicators used by researchers in past are adopted for formulation of index. It places the sample countries to bank or market based categories. The classification in not absolute but relative, as none of world country is entirely bank or market based now. After categorization of countries, the overall as well as relative effect of crisis across different category countries is analyzed. The data of 2005-2012 is extracted from official reliable sources and panel data methodology is applied for empirical analysis.The insertion of appropriate dummy and interactive dummy variables in regression model enables in capturing overall as well as relative effect of crisis. The results show a significant negative effect of crisis in sample economies. The significant differential effect across different category countries is, however, not found. The results of study are expected to benefice those who want to examine the performance and behaviour of financial systems in crises situation. Chakraborty and Ray (2006) pointed out that the focus of large number developing countries started averting towards market based system, without having a proper working on relative merits of each. The results of study can, therefore, facilitate in better and systematic choice of financial system instead of a random one.

The overall paper is organized into five major sections. The first section offers a brief introduction of study. The literature relevant to financial structure, crisis, and economic growth is summarized in section 2. The third section is related to methodology, model, and description of study sample. The results and discussion are given in section 4 section while

 ISSN 2414-8393

section 5 offers key conclusions and recommendation of the study. It further proposes some future research areas.

2. LITERATURE REVIEW

The financial system and development usually play a leading role in entire process of boosting production and growth level. This phenomenon has widely been discussed in theoretical and empirical literature. Schumpeter (1911/1934) generated an earlier discussion in this area by highlighting banking systems' contribution in innovation and economic growth. Robinson (1952), however, referred the financial development as an outcome of economic growth. Goldsmith (1969) significantly contributed in this discussion after which number of researchers and economists attempted to analyse this association in last few decades. The positive association has been found be many researchers (King & Levine,1993; Levine & Zervos, 1998; Beck & Levine, 2004; Deidda & Fattouh, 2008; Rabiul, 2010; Law & Singh, 2014; Gokmenoglu, Amin, &Taspinar, 2015). There are, however, researchers who documented a negative, very weak, or insignificant relationship between financial development and economic growth (Ram, 1999; Naceur&Ghazouani, 2007; Menyah, Nazlioglu, &Wolde-Rufael, 2014).

It has also been attempted in different studies to examine the effect of financial structure on growth pattern of economies. The various components of financial structure were considered and on this basis, the countries were relatively placed to bank based and market based categories. The overall findings in this area can be classified to three major domains. The first is relevant to advocates of bank based systems who supported for positive and dominant role of banks in financing enterprises and economic growth (Tadesse, 2002; Hondroyiannis, Lolos, & Papapetrou, 2005; HAO, 2006; Chakraborty & Ray, 2006; Uzunkaya, 2012; Sahoo, 2014). The second domain of this discussion is related to the findings of researchers who highlighted the supremacy and dominance of markets over the banking system. The major contributions in this area were made by Rajan and Zingales (1998), Caporale, Howells, and Soliman (2004), Yeh, Huang, and Lin (2013), Deltuvaite and Sineviciene (2014), Nyasha and Odhiambo (2015). There third aspect of this discussion is associated with studies, proposing irrelevance of financial structure. They instead supported for coexistence of both markets and banks, provision of financial services, and strengthening of legal system in promoting economic growth (Levine, 2002; Beck & Levine, 2002; Wang & Ma, 2009; Song &Thakor, 2010;Lee, 2012; Solo, 2013; Dima, Dinca, &Spulbar, 2014; Apergis, Artikis, &Kyriazis, 2015).

The discussion on association of financial development and financial structure to economic growth is yet inconclusive. The present study is a comprehensive attempt to study the comparative financial systems in context of global financial crisis. The crisis started from U.S. and spread globally through different channels. The role of financial channel remained relatively more pronounced (Chudik &Fratzscher; 2011, Fry-McKibbin, Hsiao, &Tang, 2014; Fink &Schüler, 2015). The crisis negatively affected the economic progression of many countries (Raz, Indra, Artikasih, & Citra, 2012; Ksantini&Boujelbène, 2014; Cevik, Dibooglu, &Kenc, 2016). The crisis effected almost every country of the world. There are, however, some researchers who documented differential effect across countries of different development level (Lartey&Farka, 2011; Ashraf, Kayani, &Rafiq, 2012). Similarly, it has been attempted by some researchers to comparatively analyze the effect of crisis across countries of dissimilar financial structure(Bahiti, Shkurti, &Babasuli, 2011; Cardarelli, Elekdag, &Lall, 2011; Allen, Gu, &Kowalewski, 2012). The studies on relative effect of crisis across countries of different financial structure and development level are not much

 ISSN 2414-8393

broader and a widespread study in this area is required. It is attempted in this study to comprehensively examine this phenomenon by selecting a broader set of countries and addressing both the aspects of financial structure and development in parallel.

3. METHODOLOGY

3.1 Classification Strategy

The study intends to relatively examine the financial systems in milieu of global financial crisis. The analysis of sample countries on the basis of financial structure and development level is focused in current research.The developed and underdeveloped categorization of countries is adopted from the official publication of International Monetary Fund (2013). In order to relatively place the countries into bank and market based categories, an index of financial structure is constructed. The index is framed by following studies of Demirguç-Kunt and Levine (1999), Levine (2002)and using size, activity, and efficiency indicators of each market and banking side. The market to bank ratio of indicators is determined for each country and then averaged separately for developed and under developed categories. The classification index is based on mean removed average of indicators.

3.2 Empirical Model

The panel data methodology is applied to examine the impact of global financial crisis on economic growth of sample economies. This technique is commonly applied when multiple cross sections are to be examined over various time periods. This approach is advantageous as it can address wide-ranging issues and handle multifaceted problems. It can also assist in resolving the complications associated with omitted variables, multicollinearity, and improves supremacy of test (Brooks, 2008). As proposed by Asteriou and Hall (2007), following is the basic mathematical expression of panel data model:

$$Y_{it} = \alpha+\beta X_{it}+\mu_{it} \text{ ----------(i)}$$

The study is intended to initially examine the effect of global financial crisis on economic growth of sample economies, for which following panel regression model is applied:

$$GDPG_{it}=\alpha_0+ \alpha_1 FD_{it}+\alpha_2 FDI_{it}+\alpha_3 GC_{it}+\alpha_4 GFCF_{it}+\alpha_5 GDS_{it}+\alpha_6 OPEN_{it}+\alpha_7 IR_{it}+\alpha_8 PG_{it} +\alpha_9 D1+\varepsilon_{it} \text{----------(ii)}$$

The dependent variable in regression model is the GDP per capita growth rate and is used as proxy of economic growth. The macroeconomic variables, having direct or indirect impact on economic growth, are used as repressors. The dummy variable ‘D1’ is inserted in regression model to capture the effect of crisis on economic growth of sample economies. It takes unity value during crisis period of 2008-09, and ‘0’ otherwise. The further relative analysis of bank and market based financial systems is preceded with the inclusion of interaction term ‘BB’. It now takes unity value for bank based countries, and ‘0’ for others. The regression model then takes the following form:

$$GDPG_{it}=\alpha_0+\alpha_1 FD_{it}+\alpha_2 FDI_{it}+\alpha_3 GC_{it}+\alpha_4 GFCF_{it}+\alpha_5 GDS_{it}+\alpha_6 OPEN_{it}+\alpha_7 IR_{it}+\alpha_8 PG_{it} +\alpha_9 D1+\alpha_{10} D1*BB+ \varepsilon_{it} \text{ ---------- (iii)}$$

 ISSN 2414-8393

The study also covers spectrum of cross country comparison on the basis of their differing economic development level. The sample countries in this context are classified into developed and underdeveloped categories. The empirical analysis is based on following regression model:

$$GDPG_{it}=\alpha_0+\alpha_1FD_{it}+\alpha_2FDI_{it}+\alpha_3GC_{it}+\alpha_4GFCF_{it}+\alpha_5GDS_{it}+\alpha_6OPEN_{it}+\alpha_7IR_{it}+\alpha_8PG_{it} +\alpha_9D1+ \alpha_{10}D1*D+ \varepsilon_{it} \text{ ---------- (iv)}$$

The purpose of interaction term 'D1*D' is to capture relative effect of crisis across developed and underdeveloped categories. The interactive dummy 'D' takes value of '1' for developed countries while '0' for others. The further breakdowns carried out within bank and market based systems for detailed investigation. The analysis of developed and underdeveloped categories for each system is made separately and regression models takes following forms:

$$GDPG_{it}=\alpha_0+\alpha_1FD_{it}+\alpha_2FDI_{it}+\alpha_3GC_{it}+\alpha_4GFCF_{it}+\alpha_5GDS_{it}+\alpha_6OPEN_{it}+\alpha_7IR_{it}+\alpha_8PG_{it} +\alpha_9D1+ \alpha_{10}D1*DBB+ \varepsilon_{it} \text{ ---------- (v)}$$

$$GDPG_{it}=\alpha_0+\alpha_1FD_{it}+\alpha_2FDI_{it}+\alpha_3GC_{it}+\alpha_4GFCF_{it}+\alpha_5GDS_{it}+\alpha_6OPEN_{it}+\alpha_7IR_{it}+\alpha_8PG_{it} +\alpha_9D1+ \alpha_{10}D1*DMB+ \varepsilon_{it} \text{ ---------- (vi)}$$

The interaction terms 'D1*DBB' and'D1*DMB' are used to capture the relative effect of crisis across countries of varying economic development level, on the basis of their bank and market oriented structure, respectively. The interactive dummies'DBB' and 'DMB' takes value of '1' for developed category of bank and market based countries, respectively; while '0' for corresponding underdeveloped categories.

3.3Sample and Data

The population of study comprises of world countries while sample of 50 countries is selected on the basis of GDP. The countries belonging to OPEC are not included in the sample for fair representation and overcoming potential biases. It is expected that selected sample will truly represent the characteristics of whole population as these countries hold major proportion of world GDP. The data of 2005-2012 is gathered for analytical purposes and winsorized to reduce the effect of outliers. The data of classification and macroeconomic variables is extracted from world databank, international financial statistics, and related sources.

4. RESULTS AND DISCUSSION

The countries are initially segregated on the basis of their stage of economic development. The structure index is then constructed by using indicators of size, activity, and efficiency. The categorization scheme relatively places sample countries into bank and market based grouping. The countries with above mean values in each category are classified as market based while those of below mean value as bank based. The list of categorized countries is at Appendix 1. United States has extreme index value in category of developed countries and is, therefore, excluded from classification scheme. Similarly, the role of banks ever remained crucial in Pakistan and India. The last few years, however, witnessed a remarkable growth of stock markets in both countries. In order to avoid abnormalities, these countries are not included in classification scheme and traditional structure pattern is followed.

 ISSN 2414-8393

The countries, after placing into relevant categories, are analyzed in the context of financial crisis. The descriptive statistics are examined to ensure the normal distribution of data. The choice of appropriate model is then made through likelihood ratio and Hausman tests. The descriptive statistics reports that data is normally distributed without having any issue of outliers. Additionally, fixed effect model is found to be most appropriate for this data set. This similar trend is observed for all regression models of the study. The results of descriptive statistics and model selection are not reported here. The main variable of interest in each regression model is the dummy variable and associated interaction terms. The results of panel regression for bank and market based countries are summarized in Table 1.

Table 1: Effect of Global Financial Crisis on Bank and Market Based Countries

			Dependent Variable: GDPG
	(1)	**(2)**	**(3)**
Intercept	1.167 (4.908)	1.078 (4.896)	1.218 (4.918)
FD	0.021** (0.008)	0.020** (0.008)	0.021** (0.008)
FDI	0.113*** (0.039)	0.110*** (0.039)	0.114*** (0.039)
GC	-0.717*** (0.183)	-0.713*** (0.183)	-0.719*** (0.183)
GFCF	0.393*** (0.072)	0.392*** (0.071)	0.395*** (0.072)
GDS	0.107 (0.081)	0.110 (0.081)	0.106 (0.082)
OPEN	0.001 (0.017)	0.001 (0.017)	0.0003 (0.017)
IR	0.083 (0.084)	0.086 (0.084)	0.085 (0.084)
PG	-1.470** (0.595)	-1.459** (0.594)	-1.499** (0.605)
D1	-3.629*** (0.270)	-4.103*** (0.394)	-3.707*** (0.384)
D1*BB		0.843 (0.511)	
D1*D			0.148 (0.521)
Adjusted R-squared	0.63	0.63	0.63
Durbin-Watson stat	1.96	1.95	1.96
*, **, *** indicates significance at 10%, 5% and 1% levels, respectively and the values in parenthesis shows standard errors.			

The results suggest that financial development, foreign direct investment, and gross fixed capital formation significantly positively influences the economic growth of sample countries. The positive effect of financial development is backed up by theories of Bagehot (1873), and Schumpeter (1911/1934) and is in line with findings of King and Levine (1993), Levine and Zervos (1998), Beck and Levine (2004), Deidda andFattouh (2008), Rabiul (2010), Law and Singh (2014), Sehrawat and Giri (2015). The positive effect foreign direct investment is supported by technological spillover view of Borensztein, DeGregorio, and Lee (1998) and is consistent with empirical findings of Katircioglu and Naraliyeva (2006), Raz, Indra, Artikasih, and Citra (2012). Similarly, positive impact of gross fixed capital formation is harmonized with model of Harrod (1939) and Domar (1946), jointly called Harrod-Domar

 ISSN 2414-8393

growth model. These are similar to the findings of Hassan, Sanchez, and Yu (2011), Ali, Chaudhry, and Farooq (2012),Uneze (2013). The effect of government consumption and population growth is, however, negative and significant. The negative effect of government consumption is supported by income accounting perspective and pro-free market view (Landau, 1983).Hassan, Sanchez, and Yu (2011), Ngare, Nyamongo, and Misati (2014) also noted the similar evidences. The negative effect of population growth is supported by Malthusian theory of population, and growth model of Coale and Hoover (1958). The similar effect has been documented in previous findings ofHAO (2006),Ksantini and Boujelbène (2014).

The significant and negative coefficient of dummy variable shows that crisis has negatively affected the economic growth of sample countries. The negative effect of crisis on economic growth is supported by bank run theory, debt deflation theory, and financial fragility hypothesis (Fisher, 1933; Minsky, 1977; Diamond &Dybvig, 1983; Wolfson, 2002). The similar negative effect across different countries has been documented earlier by Raz, Indra, Artikasih, and Citra(2012), Long, Li, Wang, and Cheng (2012), Ksantini and Boujelbène (2014), Poshakwale and Ganguly (2015). The interaction term 'D1*BB' which is used to capture the relative effect of crisis in different financial structure countries, is found positive and insignificant. This shows that the effect doesn't differ across bank and market based countries. Similar is the case for interaction term 'D1*D' which is used for comparative analysis of countries on the basis of economic development level. The results again indicate that the differential effect is not present for developed and underdeveloped category countries. In order to investigate the phenomenon in-depth, developed and underdeveloped countries of each bank and market based categories are analysed separately. The results of this section for bank based category are summarized in Table 2 below:

Table .2: Effect of Crisis on Developed and Underdeveloped Bank Based Countries

		Dependent Variable: GDPG
	(1)	**(2)**
Intercept	3.598 (6.461)	3.810 (6.489)
FD	0.019 (0.012)	0.018 (0.012)
FDI	0.069 (0.048)	0.071 (0.048)
GC	-0.757*** (0.227)	-0.764***(0.228)
GFCF	0.669*** (0.093)	0.674***(0.094)
GDS	-0.153 (0.112)	-0.157 (0.112)
OPEN	-0.006 (0.026)	-0.006 (0.026)
IR	0.132 (0.107)	0.136 (0.107)
PG	-2.510*** (0.823)	-2.573***(0.835)
D1	-3.545*** (0.365)	-3.715***(0.507)
D1*DBB		0.341 (0.702)
Adjusted R-squared	0.62	0.62
Durbin-Watson stat	1.91	1.91
*, **, *** indicates significance at 10%, 5% and 1% levels, respectively and the values in parenthesis shows standard errors.		

 ISSN 2414-8393

The results are almost similar to those reported in Table 1, except that the effect of financial development and foreign direct investment becomes insignificant now. The negative and significant effect of crisis is observed in sample bank based countries. The differential effect across developed and underdeveloped category countries is, however, not found. The similar analysis is performed for market based category and its results are presented in Table 3.

Table. 3: Effect of Crisis on Developed and Underdeveloped Market Based Countries

		Dependent Variable: GDPG
	(1)	**(2)**
Intercept	0.972 (7.891)	0.843 (7.917)
FD	0.031*** (0.011)	0.031*** (0.011)
FDI	0.185*** (0.069)	0.188*** (0.069)
GC	-0.573* (0.316)	-0.560* (0.318)
GFCF	-0.035 (0.119)	-0.036 (0.119)
GDS	0.321** (0.127)	0.322** (0.127)
OPEN	-0.014 (0.026)	-0.015 (0.026)
IR	0.138 (0.132)	0.151 (0.135)
PG	-0.908 (1.079)	-1.007 (1.102)
D1	-3.816*** (0.388)	-4.010*** (0.565)
D1*DMB		0.350 (0.742)
Adjusted R-squared	0.69	0.69
Durbin-Watson stat	2.16	2.16
*, **, *** indicates significance at 10%, 5% and 1% levels, respectively and the values in parenthesis shows standard errors.		

The results are again similar to those reported in Table 1, with two exceptions. One is the effect of gross domestic savings which becomes significant while other is of population growth that appears to be insignificant now. The overall negative effect of crisis is again found, without having a differential effect across developed and underdeveloped categories.

The results of analysis from different perspectives suggest that the global financial crisis negatively affected the sample economies. The effect, however, didn't significantly differ across countries of diverse financial structure and development level. The results show that the structure of financial system doesn't matter much in modern and globally integrated world.

5. CONCLUSION

In this study, the comparative financial systems are observed in terms of effect of global financial crisis. The top 50 countries of world are selected for study and are categorized on the basis of financial structure and economic development level. The structure

 ISSN 2414-8393

index is formulated by using the indicators applied by researchers in past. The indexation scheme relatively places the sample countries into bank and market based categories. The data is collected from reliable sources and analysed empirically by using panel data methodology. The dummy and interactive dummy variables are inserted in panel regression model to capture overall as well as relative effect of crisis. The comparative effect is initially examined across countries of distinct financial structure and with different level of economic development. It then further extended to developed and underdeveloped categories of each bank and market based country, separately. The overall results show a negative and significant effect of global financial crisis on economic growth of sample economies in each category. The significant differential effect across the categories is, however, not observed.

The results of study, therefore, suggests that the structure of financial system and stage of economic development is not much relevant for comparing the financial systems in contemporary, integrated, and globalized world. The similar results regarding irrelevance of financial structure for economic growth were earlier proposed by Levine (2002), Beck and Levine (2002), Ergungor (2008), Solo (2013). The study suggests for strengthening of both banks and markets to achieve rapid sustainable growth. Their coexistence can enable to cope with crisis more effectively. It should, therefore, be attempted to improve overall financial system and strengthen internal systems. The study can be extended in future though stock markets and firm level analysis for further comprehensive and conclusive evidences.

REFERENCES

Ali, S., Chaudhry, I.S., & Farooq, F. (2012). Human capital formation and economic growth in Pakistan. *Pakistan Journal of Social Sciences (PJSS), 32* (1), 229-240.

Allen, F. (1993). Stock markets and resource allocation. In C. Mayer, & X. Vives (Eds.),*Capital markets and financial intermediation*(pp.81-108). Cambridge: Cambridge University Press.

Allen, F., & Gale, D. (1995). A welfare comparison of intermediaries and financial markets in Germany and the US. *European Economic Review, 39*, 179-209.

Allen, F., & Gale, D. (2000). *Comparing financial systems.* Cambridge, MA: MIT Press.

Allen, F., Gu, X., &Kowalewski, O. (2012). Financial crisis, structure and reform. *Journal of Banking & Finance, 36*, 2960-2973.

Allen, F., &Santomero, A.M. (1998). The theory of financial intermediation. *Journal of Banking & Finance, 21*, 1461-1485.

Allen, F., &Santomero, A.M. (2001). What do financial intermediaries do? *Journal of Banking & Finance, 25*, 271-294.

Apergis, N., Artikis, P.G., &Kyriazis, D. (2015). Does stock market liquidity explain real economic activity? New evidence from two large European stock markets. *Journal of International Financial Markets, Institutions & Money, 38*, 42-64.

Arshad, M., & Khan, S. (2007). Financial sector restructuring in Pakistan. *The Lahore Journal of Economics, Special Edition (*September*)*, 97-125.

Ashraf, M., Kayani, J., &Rafiq, K. (2012). An investigation into the global financial crisis factors and a snap shot of their impact on different segments of economy in a developing country: A case of Pakistan. *International Journal of Academic Research in Business and Social Sciences, 2* (9), 384-390.

Asteriou, D., & Hall, S.G. (2007). *Applied econometrics: A modern approach using e-views and microfit* (Rev. ed.). New York, NY: Palgrave Macmillan.

Bagehot, W. (1873). *Lombard street: A description of the money market* (3rd ed.). London: Henry S. King & Co.

 ISSN 2414-8393

Bahiti, R., Shkurti, R., &Babasuli, J. (2011). Impact of the latest financial crises on a bank-based financial system: Case of Albania. *The Romanian Economic Journal, 14* (39), 3-23.

Beck, T., & Levine, R. (2002). Industry growth and capital allocation: Does having a market- or bank-based system matter? *Journal of Financial Economics, 64*, 147-180.

Beck, T., & Levine, R. (2004). Stock markets, banks, and growth: Panel evidence. *Journal of Banking & Finance, 28*, 423-442.

Bencivenga, V.R., & Smith, B.D. (1991). Financial intermediation and endogenous growth. *Review of Economic Studies, 58*, 195-209.

Benston, G.J., & Smith, C.W. (Jr.) (1976). A transaction cost approach to the theory of financial intermediation. *The Journal of Finance, 31* (2), 215-231.

Bertocco, G. (2008). Finance and development: Is Schumpeter's analysis still relevant? *Journal of Banking & Finance, 32*, 1161-1175.

Borensztein, E., De Gregorio, J., & Lee, J.-W. (1998). How does foreign direct investment affect economic growth? *Journal of International Economics, 45* (1), 115-135.

Boyd, J.H., & Smith, B.D. (1998). The evaluation of debt and equity markets in economic development. *Economic Theory, 12* (3), 519-560.

Brooks, C. (2008). *Introductory econometrics for finance* (2nd ed.). New York, NY: Cambridge University Press.

Caporale, G.M., Howells, P.G.A., &Soliman, A.M. (2004). Stock market development and economic growth: The causal linkage. *Journal of Economic development, 29* (1), 33-50.

Cardarelli, R., Elekdag, S., &Lall, S. (2011). Financial stress and economic contractions. *Journal of Financial Stability, 7* (2), 78-97.

Cevik, E.I., Dibooglu, S., &Kenc, T. (2016). Financial stress and economic activity in some emerging Asian economies. *Research in International Business and Finance, 36*, 127-139.

Chakraborty, S., & Ray, T. (2006). Bank-based versus market-based financial systems: A growth-theoretic analysis. *Journal of Monetary Economics, 53*, 329-350.

Chudik, A., &Fratzscher, M. (2011). Identifying the global transmission of the 2007-2009 financial crisis in a GVAR model. *European Economic Review, 55* (3), 325-339.

Coale, A.J., & Hoover, E.M. (1958). *Population growth and economic development in low income countries*.Princeton, NJ: Princeton University Press.

Deidda, L., &Fattouh, B. (2008). Banks, financial markets and growth. *Journal of Financial Intermediation, 17* (1), 6-36.

Deltuvaite, V., &Sineviciene, L. (2014). Research on the relationship between the structure of financial system and economic development. *Procedia-Social and Behavioral Sciences, 156*, 533-537.

Demirguç-Kunt, A., & Levine, R. (1999). Bank-based and market-based financial systems: Cross-country comparisons. *Policy Research Working Paper # 2143*, World Bank, Washington, DC. Retrieved from http://go.worldbank.org/ZY81NY 9OE0

Diamond, D. W. (1984). Financial intermediation and delegated monitoring. *Review of Economic Studies, 51*(3), 393-314.

Diamond, D.W., &Dybvig, P.H. (1983). Bank runs, deposit insurance, and liquidity. *Journal of Political Economy, 91* (3), 401-419.

Dima, B., Dinca, M.S., &Spulbar, C. (2014). Financial nexus: Efficiency and soundness in banking and capital markets. *Journal of International Money and Finance, 47*, 100-124.

Domar, E.D. (1946). Capital expansion, rate of growth, and employment. *Econometrica, 14* (2), 137-147.

 ISSN 2414-8393

Ergungor, O.E. (2008). Financial system structure and economic growth: Structure matters. *International Review of Economics & Finance, 17* (2), 292-305.

Fink, F., &Schüler, Y.S. (2015). The transmission of US systemic financial stress: Evidence for emerging market economies. *Journal of International Money and Finance, 55*, 6-26.

Fisher, I. (1933). The debt-deflation theory of great depressions. *Econometrica, 1* (4), 337-357.

Fry-McKibbin, R., Hsiao, C.Y.-L., & Tang, C. (2014). Contagion and global financial crises: Lessons from nine crisis episodes. *Open Economies Review, 25* (3), 521-570.

Gokmenoglu, K.K., Amin, M.Y., &Taspinar, N. (2015). The relationship among international trade, financial development and economic growth: The case of Pakistan. *Procedia Economics and Finance, 25*, 489-496.

Goldsmith, R. W. (1969). *Financial structure and development (studies in comparative economics)*. New Haven, CT: Yale University Press.

Greenwood, J., & Smith, B.D. (1997). Financial markets in development, and the development of financial markets. *Journal of Economic Dynamics and Control*, *21* (1), 145-181.

HAO, C. (2006). Development of financial intermediation and economic growth: The Chinese experience. *China Economic Review, 17*, 347-362.

Harrod, R.F. (1939). An essay in dynamic theory. *The Economic Journal, 49* (193), 14-33.

Hassan, M.K., Sanchez, B., & Yu, J.-S. (2011). Financial development and economic growth: New evidence from panel data. *The Quarterly Review of Economics and Finance, 51*, 88-104.

Hondroyiannis, G., Lolos, S., &Papapetrou, E. (2005).Financial markets and economic growth in Greece, 1986-1999. *Journal of International Financial Markets, Institutions and Money, 15* (2), 173-188.

International Monetary Fund. (2013). *World economic outlook*. Washington, DC. Retrieved from http://www.imf.org/external/pubs/ft/weo/2013/02/pdf/text.pdf

Katircioglu, S.T., &Naraliyeva, A. (2006). Foreign direct investment, domestic savings and economic growth in Kazakhstan: Evidence from co-integration and causality tests.*Investment Management and Financial Innovations, 3* (2), 34-45.

King, R.G., & Levine, R. (1993). Finance and growth: Schumpeter might be right. *Quarterly Journal of Economics, 108* (3),717-737.

Klemkosky, R.C. (2013). Financial system fragility. *Business Horizons, 56*, 675-683.

Ksantini, M., Boujelbène, Y. (2014). Impact of financial crises on growth and investment: An analysis of panel data.*Journal of International and Global Economic Studies, 7* (1), 32-57.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., &Vishny, R.W. (1998). Law and finance. *Journal of Political Economy, 106* (6), 1113-1155.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., &Vishny, R.W. (2000). Investor protection and corporate governance. *Journal of Financial Economics, 58* (1-2), 3-27.

Landau, D. (1983). Government expenditure and economic growth: A cross-country study. *Southern Economic Journal, 49* (3), 783-792.

Lartey, E.K.K., &Farka, M. (2011). Financial development, crises and growth. *Applied Economics Letters, 18*, 711-714.

Law, S.H., & Singh, N. (2014). Does too much finance harm economic growth? *Journal of Banking & Finance, 41*, 36-44.

Lee, B.-S. (2012). Bank-based and market-based financial systems: Time-series evidence. *Pacific-Basin Finance Journal, 20*, 173-197.

 ISSN 2414-8393

Leland, H.E., & Pyle, D.H. (1977). Informational asymmetries, financial structure, and financial intermediation. *Journal of Finance, 32* (2),371-387.

Levine, R. (2002). Bank-based or market-based financial systems: Which is better? *Journal of Financial Intermediation, 11*, 398-428.

Levine, R., &Zervos, S. (1998). Stock market, banks, and economic growth. *The American Economic Review, 88* (3), 537-558.

Long, W., Li, N., Wang, H., & Cheng, S. (2012). Impact of US financial crisis on different countries: Based on the method of functional analysis of variance. *Procedia Computer Science, 9*, 1292-1298.

Menyah, K., Nazlioglu, S., &Wolde-Rufael, Y. (2014). Financial development, trade openness and economic growth in African countries: New insights from a panel causality approach. *Economic Modelling, 37*, 386-394.

Merton, R. C., &Bodie, Z. (1995). A conceptual framework for analyzing the financial environment. In D. B. Crane, K. A. Froot, S. P. Mason, A. F. Perold, R. C. Merton, Z. Bodie, E. R. Sirri, & P. Tufano (Eds.),*The global financial system: A functional perspective* (pp.3-31). Boston: Harvard Business School Press.

Minsky, H. P. (1977). A theory of systemic fragility. In E.I. Altman and A.W. Sametz (Eds.), *Financial crises: Institutions and markets in a fragile environment* (pp.138-152). New York, NY: John Wiley and Sons.

Modigliani, F., &Perotti, E. (2000). Security markets versus bank finance: Legal enforcement and investors' protection. *International Review of Finance, 1* (2), 81-96.

Moroianu, N., &Belingher, D. (2011). The economic theory and the global crisis, between theoretical solutions and the economic reality. *Theoretical and Applied Economics, 18* (6), 157-164.

Naceur, S.B., &Ghazouani, S. (2007). Stock markets, banks, and economic growth: Empirical evidence from the MENA region. *Research in International Business and Finance, 21*, 297-315.

Ngare, E., Nyamongo, E.M., &Misati, R.N. (2014). Stock market development and economic growth in Africa. *Journal of Economics and Business, 74*, 24-39.

Nyasha, S., &Odhiambo, N.M. (2015). Economic growth and market-based financial systems: A review. *Studies in Economics and Finance, 32* (2), 235-255.

Poshakwale, S., &Ganguly, G. (2015). International shocks and growth in emerging markets. *Global Finance Journal, 26*, 29-46.

Rabiul, M. (2010). Banks, stock markets and economic growth: Evidence from selected developing countries. *Decision, 37* (3), 5-29.

Ram, R. (1999). Financial development and economic growth: Additional evidence. *The Journal of Development Studies, 35* (4), 164-174.

Rajan, R.G. (1992). Insiders and outsiders: The choice between informed and arm's-length debt. *Journal of Finance, 47* (4), 1367-1400.

Rajan, R.G., &Zingales, L. (1998). Which capitalism? Lessons from the East Asian crisis. *Journal of Applied Corporate Finance, 11* (3), 40-48.

Raz, A.F., Indra, T.P.K., Artikasih, D.K., & Citra, S. (2012). Global financial crises and economic growth: Evidence from East Asian economies. *Bulletin of Monetary, Economics and Banking, 15* (2), 35-54.

Robinson, J. (1952). *The rate of interest and other essays*. London: Macmillan.

Sahoo, S. (2014). Financial intermediation and growth: Bank-based versus market-based systems.*The Journal of Applied Economic Research, 8* (2), 93-114.

Schumpeter, J. A. (1934). *The theory of economic development: An Inquiry into profits, capital, credit, interest, and the business cycle* (R. Opie, Trans.). Cambridge, MA: Harvard University Press. (Original work published 1911).

 ISSN 2414-8393

Sehrawat, M., &Giri, A.K. (2015). Financial development and economic growth: Empirical evidence from India. *Studies in Economics and Finance, 32* (3), 340-356.

Shen, C.-H., & Huang, A.-H. (2003). Are performances of banks and firms linked? And if so, why? *Journal of Policy Modeling, 25*, 397-414.

Siddiqi, A.H. (2003). *Practice and Law of banking in Pakistan* (7th ed.). Karachi: Royal Book Company.

Silipo, D.B. (2011). It happened again: A Minskian analysis of the subprime loan crisis. *Journal of Economics and Business, 63*, 441-455.

Solo, P. (2013). Does financial structure affect economic growth? Evidence from African countries. *Journal of Contemporary Management, 2* (2), 13-26.

Song, F., &Thakor, A.V. (2010). Financial system architecture and the co-evolution of banks and capital markets. *The Economic Journal, 120*, 1021-1055.

Stiglitz, J.E. (1985). Credit markets and the control of capital. *Journal of Money, Credit, and Banking, 17* (2), 133-152.

Tabb, W. K. (2010). Marxism, crisis theory and the crisis of the early 21st century. *Science & Society, 74* (3), 305-323.

Tadesse, S. (2002). Financial architecture and economic performance: International evidence. *Journal of Financial Intermediation, 11*, 429-454.

Thakor, A.V. (1996). The design of financial systems: An overview. *Journal of Banking & Finance, 20*, 917-948.

Uneze, E. (2013). The relation between capital formation and economic growth: Evidence from sub-Saharan African countries. *Journal of Economic Policy Reform, 16* (3), 272-286.

Uzunkaya, M. (2012). Economic performance in bank-based and market-based financial systems: Do non-financial institutions matter? *Journal of Applied Finance & Banking, 2* (5), 159-176.

Wang, S., & Ma, J. (2009). Comparison of bank-oriented or market-oriented financial system and inspiration. *Asian Social Science, 5* (8), 119-122.

Wolfson, M.H. (2002). Minsky's theory of financial crisis in a global context. *Journal of Economic Issues, 36* (2), 393-400.

Yeh, C.-C., Huang, H.-C. (River), & Lin, P.-C. (2013). Financial structure on growth and volatility. *Economic Modelling, 35*, 391-400.

 ISSN 2414-8393

APPENDIXA
Classification of Bank Based and Market Based Countries

S. No.	Name of the Country	S. No.	Name of the Country
Developed and Bank Based Countries			
1.	Austria	2.	Belgium
3.	Czech Republic	4.	France
5.	Germany	6.	Greece
7.	Ireland	8.	Israel
9.	Italy	10.	Japan
11.	New Zealand	12.	Norway
13.	Portugal	14.	Spain
Underdeveloped and Bank Based Countries			
1.	Argentina	2.	Bangladesh
3.	Colombia	4.	Egypt, Arab Rep.
5.	Hungary	6.	India
7.	Indonesia	8.	Kazakhstan
9.	Pakistan	10.	Poland
11.	Romania	12.	Thailand
13.	Ukraine	14.	Vietnam
Developed and Market Based Countries			
1.	Australia	2.	Canada
3.	Denmark	4.	Finland
5.	Hong Kong SAR, China	6.	Korea, Rep.
7.	Netherlands	8.	Singapore
9.	Sweden	10.	Switzerland
11.	United Kingdom	12.	United States
Underdeveloped and Market Based Countries			
1.	Brazil	2.	Chile
3.	China	4.	Malaysia
5.	Mexico	6.	Peru
7.	Philippines	8.	Russian Federation
9.	South Africa	10.	Turkey

(Source: Global Financial Development Database, and author's own calculations)

 ISSN 2414-8393