THE NEXUS BETWEEN FINANCIAL DEVELOPMENT, INSTITUTIONS AND ECONOMIC GROWTH: EVIDENCE FROM HIGH-, MIDDLE- AND LOW-INCOME COUNTRIES

Babar Hussain[1], Kifayat Ullah[2], Sajjad Haider[3], Muhammad Usman[4], Sarah Anwar[5], Touqeer Ahmad[6]

[1,5]Assistant Professor, International Institute of Islamic Economics, International Islamic University, Islamabad.

[3]Assistant Professor, Department of Business Management, Karakoram International University, Gilgit.

[6]Department of Economics and Agriculture Economics, PMAS Arid Agriculture University, Rawalpindi.

Corresponding Author: [2]Lecturer, Department of Economics, Karakoram International University, Gilgit. Email: [2]kifayat@kiu.edu.pk

Corresponding Author: [4]Department of Economics and Agriculture Economics, PMAS Arid Agriculture University, Rawalpindi. Email: [4]usmanhsp56@gmail.com

ABSTRACT
This study highlights the impact of financial development on economic growth by exploring the role of different institutions. Regarding this context, we utilized balanced panel dataset of 57countries categorized into (high-income, middle-income and low-income) from 1980-2017 and analyzed it by using 2 step system GMM. The overall results showed that there is a conclusive impact of financial development on economic growth of the countries. Findings showed that financial development is more strongly playing its role in middle income countries as compared to high-income countries where more finance negatively affects the growth and in low-income countries the impact of financial sector development is weakest. But under the

presence of sound institutions which are political stability, government effectiveness, corruption and law and order the impact of financial development in high-income economies as well as in middle-income countries is positive as well as significant except in the low-income countries so, increase in finance in the absence of strong institutions may not successfully contributing towards economic benefits.

JEL Classification: E44, G20, O40, O57

INTRODUCTION

A well-functioning financial system embedded in a sound institutional framework promotes economic growth, but at the same time more finance hampers economic growth. The proposition that "better finance better growth" is more appropriate instead of "more finance more growth" by Law and Singh (2014). There is a wide consent on the positive impacts of finance on the performance of growth. Furthermore, developing a well-stable and strong financial system is necessary to overcome or decrease the negative and harmful impacts of financial crises in economies.

Development and improvement in financial systems assists to enhance the efficient resource allocation and growth productivity, thereby promoting long-run economic growth. Furthermore, various contributions and addition in theoretical perspective suggested that the relationship between finance and growth performance is possibly non-linear (Deidda, 2006: Khan 2001; Acemoglu & Zilibotti, 1997; Grenwood & Jovanovic, 1990). The financial system of a country affects saving and investment decisions which are the major determinants of long run economic growth. At the country level, government policies and legislation can help to mobilize savings. Government policies and legislation are requiring greater information to help individuals and firms to make informed investment decisions (Kendall 2012; Rahaman 2011; Jalil et al., 2010; Hasan et al., 2009; Bertocco 2008; Beck and Levine 2004; Levine et al., 2000; Rajan & Zingales, 1998; Levine, 1999; 2003, Demetriades & Hussein, 1996; King and Levine.1993a, 1993b).

By and large, the empirical evidence has suggested that there is a positive long-run association between indicators of financial development and economic growth. According to Levine (1997), financial intermediaries enhance economic efficiency, and ultimately economic growth, by helping allocate capital to its best uses. Moreover, the existing evidence also demonstrates that this relationship is very likely to be nonlinear where the effect of finance on growth may vary by stage and level of economic development. Interaction between institutions and financial development showed that there is decrease in output volatility only due to the presence of sound institutions in which financial system embedded. Institutional reform must be improved so that to boost the growth volatility-reducing impact of financial development. Specifically, institutions need to be strengthened along the output growth would boost by capturing multiple dimensions (Raheem et al, 2016).

More developed financial structure accelerates an economy's speed towards its steady-state income level. If so, then financial development is a convergence factor in the economic growth process of countries (Ranjbar & Rassekh 2017).

Various studies have explored the contribution of financial development and institutions in economic growth performance. King along Levine (1993) were the pioneer to who demonstrate that financial depth is essential to predicting economic growth also examined that financial development makes a positive impact on economic growth. In addition, Demetriades and Law (2006) analyzed that when financial framework is embedded within a sound framework of institutions, the financial development has greater impact on GDP per capita. Alexiou et al. (2018) explained that benefits of financial development, recognizing the value of financial intermediation in mobilizing savings, reducing information asymmetries, and acting as a catalyst for investment. The development of the financial sector has been an indispensable component of economic growth and the quality of the institutional framework is instrumental in stimulating economic growth. The present study examines how different indicators of financial development response differently to institutional quality, and whether different institutions might have dissimilar impact on financial development? The present study is aimed to explore the answers to these questions. This research also explores the interrelationship between financial development, institutions and economic growth according to the income level across 57 countries (high-income countries, middle-income countries and low-income countries). The major objectives of the study are given as under:

1.   To explore the impact of financial development on economic growth.
2.   To investigate the role of financial development on growth across the institutional quality.
3.   To examine the interrelationship between financial development, institutions and growth according to the income level.

LITERATURE REVIEW

Multiple studies in the literature of financial development have investigated the relationship between financial development and economic growth by using cross country, time series, panel data as well as firm level analysis. Financial sectors importance cannot be neglected; it is essential for an economy because financial development causes economic growth (King & Levine 1993). For deeper understanding of literature this section has been divided into three subsections. Section 2.1 explains the literature on financial development with relation to economic growth. Section 2.2 give the explanation of literature regarding institutions and economic growth and section 2.3 enlightens the literature on financial development, institutions and economic growth.

Financial Development and Economic Growth

Asteriou and Spanos (2019) examine the impact of financial development on economic growth by use of a panel data of 26 European Union nations of time span from 1990 to 2016. The empirical method uses multiplicative dummies to compare two separate sub-periods before and after the crisis. The results of this research demonstrate that since crisis, financial development promoted economic growth when there are no crises but in the presence of crisis it hampers the economic activity.

Biplob and Halder (2018) made an empirical analysis in Bangladesh for the time period 1977-2016 to investigate the relationship between financial development and economic growth. They applied Johansen Co-integration test and Granger-causality test in Vector Error Correction Model (VECM) framework which showed significant and demonstrated that overall causality in Bangladesh across financial development to economic growth. The outcome of this research have come an across about the dynamic aspect of financial development, specifically, circulation of credit to private sector, in economic sector of Bangladesh. Abid et al. (2016) used the non-parametric stochastic dominance method and examined the comparative performance of ten MENA countries in accordance with GDP growth and stock market return indicators. They used multivariate vector autoregressive (VAR) model to examine the shock transformation for the most performing economies to another dominated economy. Outcome, covering the period from June 2005 to December 2013, explain that the dominance of MENA countries varies across the indicators but lastly, this result indicates that the GDP growth dominance has the greater effect instead of the stock market dominance.

Samargandi et al. (2015) made analysis of 52 middle-income economies covering the time span from 1980-2008 and investigate the relationship between financial development and economic growth. By using pooled mean group method in a dynamic heterogeneous panel set, they showed that in long run relationship among finance and growth is an inverted U-shaped. Against long run there is insignificant linkage in short run. This indicates that more finance can exert an adverse impact on growth in case of middle-income economies. The finding of a non-monotonic effect of financial development on growth is confirmed by estimating a threshold model. Beck et al. (2014) used the sample data set of 132 economies during the time span of 1980-2005 and using system GMM estimation method. Findings of this study found that an increase in credit cause positive impact on per capita output growth just to a certain level. After this threshold level the importance of finance towards growth is statistically insignificant. However, the estimated non-linear relationship could stem from the exclusion of factors may not consider in the literature so far. These aspects possibly have not positive impact on growth in strong financial framework, and include the magnitude of the level of financial cycles as well as the significance of non-intermediation activities in bank's business models.

Institutions and Economic Growth

Aziz and Ahmad (2018) examined whether a country's level of income matters to the efficiency of institutions in promoting economic growth. The data set categorized according to the income level based on World Bank criterion. The overall findings signify those institutional variables have offsetting effect on economic performance. On the other hand, corruption affects GDP negatively in high- and middle-income countries, but remains positive while, insignificant in low-income economies. Democracy has mixed effect on economic growth, positive in middle-income economies and negative in high as well as in low-income economies. Armed conflicts appear as a significant but negative in low-income economies, on the other hand it is statistically insignificant effect on growth in case of middle and high-income countries.

Asghar et al. (2015) explored the significance of institutional quality on economic growth in developing countries of Asia. This research uses panel data set for the time span from 1990 to 2013 for 13 developing countries of Asia. Institutional quality index has been formulated by using principal component analysis. The findings using Panel ARDL demonstrate that institutional reform has positive impact on economic growth. The results of panel causality test illustrated that there is causality from institutional reform to economic growth. Finally, this study stresses to improve institutional quality in these specific Asian developing countries for the increase in economic growth. Additionally, Alexiou et al. (2014) explored the area on which conventional techniques employed in most of the important growth regarding studies that can productively explain the economic growth of a highly developing African economy like Sudan. By the use of an ARDL bounds-testing technique to co-integration on the data set consist on the time period of 1972 to 2008. By the consideration of short run as well as long-run interactions among the institutional quality and economic growth, the empirical findings suggested that, for the Sudanese economy, the sound environment of institutional quality is one of the most significant factors in defining economic prosperity.

Siddiqui and Ahmed (2013) examined how institutions affect economic growth in 84 countries over a time span of 5 years specify aspects which based on principal component testing. Measures are categorized as institutional, policy rents, political rents and risk-reducing mechanisms. These measures are then used in a formal growth framework by using panel OLS and GMM estimators. Result suggests that institutional reform affect economic growth in a positive dimension. This research further reveals for developing economies the sound institutions and policy rent is more significant instead of both indices that restrain political rents and those that decrease risks. This research further emphasizes on positive relationship between political rents index and index of risk-reduction methods.

Financial Development, Institutions and Economic Growth

Raheem et al. (2016) examined the significance of institutional quality in the financial development, output-growth volatility relation by using system GMM technique consisting of 71 economies divided into developing, emerging and developed economies over the time period 1996 to 2012. Firstly, results demonstrate that volatility decreasing the impact of financial development. Secondly, institutional reform has the dissimilar reducing impact on output growth volatility. In the last, the relationship between institutional measure and financial development indicators illustrated that the output volatility reduction arising from financial development is improved in the existence of sound institutions.

Yildrim and Gokalp (2016) examined the interrelationship between institutions and macro-economic progress in respect of growing economies. The data set comprises on 38 developing countries covering the years from 2000 to 2011. Twenty-three institutional structure variables are used in this research, the relationship between the institutional structure and macro-economic growth

examined by using the Panel Data Analysis. Findings of this study discovered that a few institutional measures have a positive impact on the macro-economic efficiency of the growing economies. on the other hand, some institutional structure measures have a negative effect on the macro-economic efficiency of developing economies. Further, Effiong (2015) explored the impact of financial development on economic growth under the presence of institutions for a panel of 21 Sub-Saharan African economies for the time span 1986 to 2010. An ordinary growth regression is estimated with linear regression among financial development indicators and institutional measures. Result of this study demonstrated that financial development has not significant effect on economic growth in SSA economies while, the significant positive affect of institutional reform. The interaction impact between financial development and institutional measures is positive but not significant. These facts suggest that the existing institutions have not increased the finance-growth relationship in this specific region. Consequently, improving institutions relevant to the financial sector is most desired.

Law et al. (2013) examined whether there is the presence of institutional threshold in financial development and economic growth by using data set of 85 nations ranging from 1980 to 2008. The study showed that the impact of finance on growth performance is positive and statistically significant just to a specific threshold level of institutional development. Results proposed that the financial development and growth relationship is depend on the institutional reform, thus promoting the concept that better finance, better growth is more suitable in the contribution of long-run economic growth benefits.

Akpan and Effiong (2012) investigating the relationship between governance and development performance by using panel data study of 21 Sub-Saharan Africa (SSA) economies for the time span 1998 to 2007, data collected from the Worldwide Governance Indicators (WGI) to estimate the governance quality and examine the hypothesis that governance matters for development. Results of the study show that governance indicators are positively and significantly related with development. The findings also recommend that governance related to SSA has to do with strong rule of law, regulatory framework and political stability with the standard policy of sound institutions for re-invigorating the development in the region.

RESEARCH METHODOLOGY

Model Specification

In this section an empirical model is presented which is establish on the base of King and Levine (1993a, 1993b) and Levine and Zervos (1998) who suggest the linear equation model to examine the relationship between financial development and economic growth. Growth is a function of financial development the general form is as follows:

$$GRW_{it} = \beta_0 + \beta_1 FD_{it} + \gamma X_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where Eq. (1) illustrate that the growth (GRW) is dependent variable while financial development represented by (FD) is independent variable X represents the vector of controls variables which are initial income, human capital, population growth, trade openness, inflation, government expenditure and the last gross capital formation. The linear function explains how financial development effect growth, control variables are included to check the external impacts, besides the direct effect of financial development.

To estimate the relationship between financial development, institutions and growth, dynamic panel model has been used. Empirical specification of the model has been shown below:

$$GRW_{it} = \beta_0 + \beta_1 FD_{it} + \beta_2 INST_{it} + \gamma X_{it} + V_i + \theta_t + \varepsilon_{it} \quad ...... (2)$$

Eq. (2) is the extended form of Eq. (1) which includes the institutions represented by (INST) here "i" in subscript shown country effect and similarity "t" in subscript represents time period. Furthermore, V_i explains the panel level effects, θt shows time effect and εit represents the error term.

Another empirical specification of the model having interaction term of financial development and institutions has been written below:

$$GRW_{it} = \beta_0 + \beta_1 FD_{it} + \beta_2 INST_{it} + \beta_3 FD_{it} * INST_{it} + \gamma X_{it} + V_i + \theta_t + \varepsilon_{it}$$
$$.. (3)$$

In Eq. (3) FD*INST is the interaction between financial development and institutions. According to this model we interact financial development indicators with different institutions one by one.

Description of Variables and Data Sources

For empirical investigation of the proposed model given in equation (3) the study employed Annual data of 36 developed and developing countries for the time period 2002-2017. Data were obtained from different sources i.e. World Development Indicators (WDI), World Governance Indicators (WGI), Global Entrepreneurship Monitor (GEM), Penn World Table (PWT) and Economic Freedom of the World (EFW).

RESULTS & DISCUSSIONS

In the following section, discussion of the estimated results for this work is presented. Firstly, we show the results of whole variables their summary statistics and relationship results. After this we present the results of System GMM regression for overall sample and then income wise. All variables which are used in this study are listed in the following summary statistics table. Most of the variables and their relationship with other variables are according to the study's expectation and statistically significant. This is specified by control variables, which are related as well.

Table 1 Descriptive Statistics

VARIABLES	N	MEAN	SD	MIN	MAX
GRW	447	.015	.029	-.171	.106
INIT	445	8.249	1.506	5.683	11.518
HC	456	2.22	.697	1.017	3.73
POP	456	2.022	1.191	-.133	12.576
TRA	450	65.861	33.672	12.876	219.242
INF	446	26.725	165.66	-3.016	2414.346
GEXP	449	14.547	5.14	3.468	40.591
GCF	448	23.894	6.971	4.84	47.625
DCP	451	49.62	44.579	1.919	235.425
DCPB	450	44.451	37.714	1.919	235.422
LL	453	49.598	36.953	6.571	215.351
PS	285	-.23	.857	-2.634	1.543
GEF	285	.104	.889	-1.951	2.058
COR	451	2.902	1.247	0	6
LO	451	3.411	1.365	.767	6

Source: Authors calculations

In table 1, all variables are shown in first column, next column indicate the total observation of all variables, third column explains the mean figures of all variables, fourth column is of standard deviation that demonstrates that the spreading values of all variables which are useful for the purpose of comparison, finally fifth and sixth" column describes lowest and highest values.

EMPIRICAL RESULTS

GMM is used to overcome the endogeneity problem. MM method gives reasonable as well as logical results even in the presence of heterogeneity and endogeneity. Blundell and Bond (1998) introduced dynamic panel system GMM technique which is used to estimate the System GMM model and Stata xtabond2 command was introduced by Roodman (2009). We started our estimations by OLS then we applied fixed and random effect, the results were not reliable therefore we applied system GMM. The findings of two 2 step system GMM improves the estimated baseline model which used instrumental variables to detect the indigeneity problem, and give us valuable and reliable results as compared to fixed and random effect so relaying on two step system GMM to report the findings one by one for all the proxies of Growth.

As previously discussed, the objective of this research is to study the impact of financial development on growth by exploring the role of institutions. Due to unavailability of data limited us to choose only those variables which are reliable and useful, covering the time span 1980-2017 in averages of five years. Date consists of 57 countries and it is balanced panel data.

Growth is the dependent variable; GDP per capita is used as an indicator of growth in our study. It is most common macroeconomic variable and also used to check the effect of growth. (Aparicio et al., 2016). The experimental variable is financial development which is estimated by their three proxies first (DCP), domestic credit to private sector, (% of GDP). Second (DCPB), domestic credit to private sector by banks, (% of GDP) and the last one is (LL), liquid liabilities, (% of GDP). Financial development contributes as a significant part towards growth in the presence of institutional reform.

Table 2, table 3 and table 4 reports that the control variables which include initial which is negative but statistically significant in all three tables. Human capital, trade and gross capital formation are positive and statistically significantly contribute towards the determination of growth. Population shows negative and significant results towards the growth in most of the cases. Inflation and government expenditure shows positive as well negative but significantly correlated with growth in most of the cases.

Table 2 and table 3 reports that impact of DCP and DCPB has positive and statistically significant effect on growth performance. Table 4 reports that the effect of LL is significant and positive except in model 2 and 3. Similarly, the impact of institutions which are PS, GEF, COR and LO on growth in above mentioned three tables are mostly positive and significant represented by column 2, 4, 6 and 8. The impact of PS in all three tables is consistently negative but significant.

While in table 3 the impact of GEF is negative but significant. In the last we observe the impact of interrelation of financial development and institutions on growth. In table 2, table 3 and table 4 column 3, 5, 7 and 9 shows the relations among financial development and institutions which are statistically significant but negative consistently. So, for this purpose we are going to check the partial effect by taking partial derivatives, of financial development and institutions on growth.

Robust standard errors in parentheses; + p<0.1; * p<0.05; ** p<0.01. Dependent variable: Growth. DCP is the proxy of financial development. INIT, HC, POP, TRA, INF, GEXP and GCF are control variables. PS, GEF, COR, LO are institutions and regressed one by one from second column. "Hansen is a test to check over identifying restrictions for instruments. AR (1) and AR (2) are tests to check the existence of auto correlation in the residual terms

Table 2 Financial Development, Institutions and their Interaction using two step system GMM

VAR	(1) Baseline	(2) PS	(3) DCP*PS	(4) GEF	(5) DCP*GEF	(6) COR	(7) DCP*COR	(8) LO	(9) DCP*LO
INIT	-0.0136***	-0.00669***	-0.00761***	-0.00942***	-0.00871***	-0.0141***	-0.0143***	-0.0149***	-0.0145***
	(0.00104)	(0.00128)	(0.00142)	(0.00159)	(0.00155)	(0.00104)	(0.00109)	(0.000959)	(0.00104)
HC	0.0155***	0.000752	0.000554***	0.00255**	0.00119*	0.0145***	0.0148***	0.0154***	0.0152***
	(0.00182)	(0.00222)	(0.00256)	(0.00320)	(0.00251)	(0.00218)	(0.00220)	(0.00163)	(0.00172)
POP	-0.0109***	-0.00993***	-0.00864***	-0.00963***	-0.00865***	-0.0109***	-0.0104***	-0.0108***	-0.0104***
	(0.000327)	(0.000433)	(0.000624)	(0.000450)	(0.000591)	(0.000435)	(0.000433)	(0.000240)	(0.000374)
TRA	0.000105***	5.84e-05**	-4.16e-05	4.16e-05**	-1.12e-05	0.000117***	0.000101***	0.000125***	8.73e-05***
	(1.81e-05)	(2.46e-05)	(3.84e-05)	(2.60e-05)	(3.28e-05)	(1.77e-05)	(1.78e-05)	(1.83e-05)	(2.32e-05)
INF	1.58e-06***	-0.000231**	-0.000201*	-0.000135**	-0.000262	1.22e-06***	1.78e-06*	3.47e-06	4.44e-06**
	(4.23e-06)	(0.000170)	(0.000168)	(0.000151)	(0.000163)	(3.91e-06)	(3.14e-06)	(4.19e-06)	(3.70e-06)
GEXP	6.80e-05*	-0.000341	-0.000778***	-0.000338*	-0.000691***	-5.02e-05*	-0.000128**	-6.45e-05*	-0.000155**
	(0.000122)	(0.000210)	(0.000211)	(0.000186)	(0.000225)	(0.000137)	(0.000124)	(0.000121)	(0.000106)
GCF	0.00109***	0.000573**	0.000311**	0.000402*	0.000179	0.00107***	0.000977***	0.00106**	0.000953***
	(6.51e-05)	(0.000128)	(0.000118)	(0.000210)	(0.000171)	(6.78e-05)	(7.78e-05)	(0.000106)	(0.000114)
DCP	6.18e-05**	4.89e-05***	0.000197***	5.82e-05**	0.000270***	6.21e-05**	0.000311***	1.79e-06	0.000390***
	(2.42e-05)	(1.72e-05)	(6.31e-05)	(2.34e-05)	(7.59e-05)	(2.48e-05)	(6.96e-05)	(2.55e-05)	(7.34e-05)
INST		-0.00225*	0.0109**	0.00260*	0.0165***	0.00182***	0.00694***	0.00465***	0.00811***
		(0.00267)	(0.00447)	(0.00465)	(0.00581)	(0.000518)	(0.00105)	(0.00113)	(0.00116)
DCP*INST			-0.000217***		-0.000244**		-7.22e-05***		-8.14e-05***

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
					*				
			(3.99e-05)		(3.16e-05)		(1.22e-05)		(1.14e-05)
Constant	0.0777***	0.0764***	0.0976***	0.0987***	0.105***	0.0808***	0.0704***	0.0766***	0.0652***
	(0.00700)	(0.0111)	(0.0137)	(0.0142)	(0.0141)	(0.00678)	(0.00601)	(0.00686)	(0.00650)
Observation	432	278	278	278	278	427	425	427	427
Countries	57	57	57	57	57	57	57	57	57
AR(1)	-4.66	-3.75	-3.88	-3.78	-3.92	-4.61	-4.53	-4.72	-4.72
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
AR(2)	-0.63	-0.95	-1.24	-1.07	-0.67	-1.12	-1.18	-1.24	-1.29
	(0.529)	(0.342)	(0.214)	(0.286)	(0.504)	(0.261)	(0.239)	(0.216)	(0.198)
Hansen	43.96	33.82	30.81	32.42	26.10	43.55	42.87	42.75	43.39
	(0.118)	(0.112)	(0.159)	(0.146)	(0.348)	(0.104)	(0.095)	(0.119)	(0.086)

Table 3 Financial Development, Institutions and their Interaction using two step system GMM

VAR	(1) Baseline	(2) PS	(3) DCPB*PS	(4) GEF	(5) DCPB*GEF	(6) COR	(7) DCPB*COR	(8) LO	(9) DCPB*LO
INIT	-0.0138***	-0.00779***	-0.00815***	-0.00828***	-0.00796***	-0.0143***	-0.0143***	-0.0148***	-0.0143***
	(0.00105)	(0.00128)	(0.00131)	(0.00166)	(0.00171)	(0.00108)	(0.00110)	(0.000975)	(0.00102)
HC	0.0145***	-0.000451	-0.00138**	0.00202*	0.000391	0.0138***	0.0139***	0.0141***	0.0138***
	(0.00175)	(0.00232)	(0.00256)	(0.00308)	(0.00277)	(0.00218)	(0.00209)	(0.00162)	(0.00177)
POP	-0.0106**	-0.00941	-0.00859***	-0.00945***	-0.00877***	-0.0106***	-0.0104***	-0.0106***	-0.0104***

945

	*	***							
	(0.000348)	(0.000435)	(0.000624)	(0.000478)	(0.000575)	(0.000439)	(0.000436)	(0.000288)	(0.000395)
TRA	8.16e-05***	2.13e-05	-6.40e-05*	1.67e-05**	2.56e-06	9.24e-05***	9.10e-05***	0.000104***	8.10e-05***
	(2.07e-05)	(2.62e-05)	(4.03e-05)	(2.69e-05)	(3.15e-05)	(2.03e-05)	(1.91e-05)	(1.93e-05)	(2.37e-05)
INF	1.22e-06***	-0.000209**	-0.000203***	-0.000146*	-0.000223	9.46e-07**	1.52e-06	2.71e-06**	4.18e-06*
	(4.05e-06)	(0.000171)	(0.000173)	(0.000152)	(0.000161)	(3.75e-06)	(3.22e-06)	(4.09e-06)	(3.70e-06)
GEXP	4.54e-05	-0.000412*	-0.000804***	-0.000427**	-0.000638***	-6.75e-05	-0.000118***	-6.36e-05	-0.000146**
	(0.000138)	(0.000221)	(0.000220)	(0.000208)	(0.000217)	(0.000144)	(0.000133)	(0.000130)	(0.000118)
GCF	0.00105***	0.000455***	0.000215*	0.000234**	8.30e-05	0.00103***	0.000969***	0.00102**	0.000928***
	(7.12e-05)	(0.000130)	(0.000124)	(0.000190)	(0.000171)	(7.47e-05)	(7.83e-05)	(0.000111)	(0.000117)
DCPB	0.000128***	0.000174***	0.000295***	0.000188***	0.000359***	0.000125***	0.000320***	7.32e-05**	0.000432***
	(2.76e-05)	(2.54e-05)	(5.95e-05)	(2.94e-05)	(8.32e-05)	(2.59e-05)	(6.68e-05)	(3.25e-05)	(8.61e-05)
INST		-0.00161*	0.0116***	-0.00275**	0.0121**	0.00174***	0.00584***	0.00352***	0.00700***
		(0.00292)	(0.00423)	(0.00388)	(0.00559)	(0.000545)	(0.00101)	(0.00117)	(0.00106)
DCPB*INST			-0.000231***		-0.000255**		-6.26e-05***		-7.96e-05***

					*				
			(3.88e-05)		(3.47e-05)		(1.12e-05)		(1.26e-05)
Constant	0.0814***	0.0878***	0.107***	0.0915***	0.0973***	0.0837***	0.0745***	0.0814***	0.0691***
	(0.00670)	(0.0114)	(0.0124)	(0.0135)	(0.0149)	(0.00603)	(0.00578)	(0.00710)	(0.00665)
Observation	432	278	278	278	278	427	425	427	427
Countries	57	57	57	57	57	57	57	57	57
AR1	-4.68 (0.000)	-3.73 (0.000)	-3.85 (0.000)	-3.77 (0.000)	-3.84 (0.000)	-4.63 (0.000)	-4.53 (0.000)	-4.70 (0.000)	-4.70 (0.000)
AR2	-0.69 (0.491)	-0.98 (0.327)	-1.09 (0.277)	-1.07 (0.286)	-0.59 (0.554)	-1.18 (0.239)	-1.20 (0.229)	-1.24 (0.217)	-1.26 (0.209)
Hansen	43.45 (0.128)	34.44 (0.099)	29.97 (0.186)	32.48 (0.145	26.85 (0.312)	43.05 (0.113)	42.38 (0.104)	42.57 (0.123)	43.32 (0.087)

Robust standard errors in parentheses; + p<0.1; * p<0.05; ** p<0.01. Dependent variable: Growth. DCPB is the proxy of financial development. INIT, HC, POP, TRA, INF, GEXP and GCF are control variables. PS, GEF, COR, LO are institutions and regressed one by one from second column. "Hansen is a test to check over identifying restrictions for instruments. AR (1) and AR (2) are tests to check the existence of auto correlation in the residual terms

Table 4 Financial Development, Institutions and their Interaction using two step system GMM

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VAR	Baseline	PS	LL*PS	GEF	LL*GEF	COR	LL*COR	LO	LL*LO
INIT	-0.0135***	-0.00479***	-0.00331**	-0.0111***	-0.00863***	-0.0145***	-0.0145***	-0.0150***	-0.0143***
	(0.000978)	(0.00154)	(0.00139)	(0.00147)	(0.00114)	(0.00105)	(0.00104)	(0.000974)	(0.00114)
HC	0.0158***	0.00289*	0.00339	0.00114**	0.00444	0.0149***	0.0158***	0.0156***	0.0161***
	(0.00210)	(0.00264)	(0.00270)	(0.00341)	(0.00307)	(0.00205)	(0.00198)	(0.00197)	(0.00179)
POP	-0.0110***	-0.0106***	-0.0100***	-0.00920***	-0.00917***	-0.0108***	-0.0104***	-0.0108***	-0.0106***
	(0.000314)	(0.000436)	(0.000447)	(0.000477)	(0.000401)	(0.000424)	(0.000468)	(0.000338)	(0.000320)
TRA	0.000106***	6.32e-05***	2.70e-05	1.02e-05*	1.89e-05	0.000118***	0.000111***	0.000131***	1.00e-04***
	(1.93e-05)	(2.31e-05)	(3.25e-05)	(2.07e-05)	(2.94e-05)	(1.87e-05)	(2.10e-05)	(2.12e-05)	(2.45e-05)
INF	2.48e-06**	-0.000329*	-0.000368**	-9.11e-05	-0.000407**	2.20e-06	1.83e-06**	3.89e-06	6.54e-06***
	(4.54e-06)	(0.000191)	(0.000175)	(0.000138)	(0.000202)	(4.08e-06)	(2.79e-06)	(4.37e-06)	(4.22e-06)
GEXP	6.10e-05	-0.000132*	-0.000588***	-0.000309*	-0.000544**	-8.88e-05	-0.000226*	-4.68e-05**	-0.000130
	(0.000113)	(0.000212)	(0.000189)	(0.000172)	(0.000260)	(0.000124)	(0.000123)	(0.000113)	(9.97e-05)

GCF	0.00107***	0.000830***	0.000456***	0.000665***	0.000264	0.00104***	0.000924***	0.00101***	0.000905***
	(5.41e-05)	(0.000136)	(0.000123)	(0.000160)	(0.000163)	(6.31e-05)	(6.09e-05)	(5.71e-05)	(8.16e-05)
LL	7.37e-05**	-9.31e-05*	-7.39e-05**	8.01e-05*	0.000114*	9.28e-05***	0.000375***	9.56e-06	0.000473***
	(3.60e-05)	(8.41e-05)	(7.84e-05)	(8.90e-05)	(9.78e-05)	(3.33e-05)	(8.92e-05)	(5.26e-05)	(6.33e-05)
INST		-0.00567*	0.00551*	0.00799**	0.0241***	0.00253***	0.00881***	0.00432***	0.00970***
		(0.00292)	(0.00324)	(0.00368)	(0.00597)	(0.000507)	(0.00150)	(0.00109)	(0.00183)
LL*INST			-0.000215***		-0.000327***		-9.85e-05***		-0.000115***
			(3.75e-05)		(6.83e-05)		(1.60e-05)		(1.19e-05)
Constant	0.0763***	0.0549***	0.0599***	0.109***	0.0990***	0.0804***	0.0658***	0.0783***	0.0576***
	(0.00641)	(0.0127)	(0.0118)	(0.0135)	(0.0122)	(0.00593)	(0.00651)	(0.00705)	(0.00788)
Observation	432	278	278	278	278	427	425	427	427
Countries	57	57	57	57	57	57	57	57	57
AR1	-4.65	-3.72	-3.82	-3.69	-3.87	-4.60	-4.50	-4.69	-4.61
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
AR2	-0.61	-0.92	-1.18	-1.15	-0.88	-1.13	-1.22	-1.23	-1.21
	(0.539)	(0.358)	(0.240)	(0.250)	(0.380)	(0.259)	(0.221)	(0.220)	(0.228)
Hansen	43.35	35.70	31.36	35.22	30.56	42.69	40.91	42.62	42.65
	(0.131)	(0.076)	(0.144)	(0.084)	(0.167)	(0.120)	(0.134)	(0.122)	(0.099)

Robust standard errors in parentheses; + p<0.1; * p<0.05; ** p<0.01. Dependent variable: Growth. LL is the proxy of financial development. INIT, HC, POP, TRA, INF, GEXP and GCF are control variables. PS, GEF, COR, LO are institutions and regressed one by one from second column. "Hansen is a test to check over identifying restrictions for instruments. AR (1) and AR (2) are tests to check the existence of auto correlation in the residual terms

High Income Countries

In high income category there are 16 countries Australia, Bahrain, Canada, Chile, Iceland, Israel, Japan, Korea Republic, Norway, Panama, Saudi Arabia, Switzerland, United Arab Emirates, United Kingdom, United State and Uruguay. These countries are selected according to the availability of data.

Now further explained the results of System GMM, demonstrated in table 5, table 6 and table 7. In table 5, table 6 and 7 the results of system GMM are described, the impact of financial development (DCP, DCPB and LL) in these tables are consistently significantly negatively affected the growth of these countries (High Income). As literature supports in this regard that more finance after the maximum level negatively have affect the growth. More finance more growth is not an appropriate term in this regard instead of this better finance better growth is more appropriate towards the growth.

In table 5, table 6 and table 7 column 2, 4, 6 and 8 shows the impact of institutions (PS, GEF, COR and LO) are positively correlated with growth and also statistically significant consistently. It means the institutions in these countries are efficiently performing their functions.

Finally, the interaction behavior among financial development and institutions is explained in table 5, table 6 and 7 by column 3, 5, 7 and 9. The interaction between DCP*PS is significantly positive, DCPB*PS and LL*PS are also significantly positive effect on growth. The interaction between DCP*GEF, DCPB*GEF and LL*GEF are significantly negatively towards the growth. The interaction between DCP*COR, DCPB*COR and LL*COR showing the significantly positive results. In the last explaining the interaction between the DCP*LO, DCPB*LO and LL*LO are significantly positive.

Table 5 Financial Development, Institutions and their Interaction using two step system GMM

VAR	(1) Baseline	(2) PS	(3) DCP*PS	(4) GEF	(5) DCP*GEF	(6) COR	(7) DCP*COR	(8) LO	(9) DCP*LO
INIT	-0.00792*	-0.0183**	-0.00402	-0.0129***	-0.0119***	-0.0201	-0.0224**	-0.0397*	-0.0401
	(0.0127)	(0.00787)	(0.0166)	(0.00257)	(0.00384)	(0.0191)	(0.0237)	(0.0254)	(0.0293)
HC	0.0208**	0.0212***	0.0463**	0.0101**	-0.00290	0.0221*	0.105***	0.0332	0.0476*
	(0.00747)	(0.00692)	(0.0379)	(0.00404)	(0.0148)	(0.0114)	(0.0310)	(0.0225)	(0.0274)
POP	-0.00997***	-0.00751***	-0.0113***	-0.00771***	-0.00683***	-0.00796**	-0.0156***	-0.00696**	-0.00731*
	(0.00153)	(0.00148)	(0.00257)	(0.000940)	(0.00142)	(0.00316)	(0.00406)	(0.00278)	(0.00355)
TRA	0.000106**	0.000286***	4.30e-05	0.000143***	0.000150***	0.000178**	0.000314	0.000229*	0.000354
	(6.45e-05)	(7.71e-05)	(0.000229)	(3.26e-05)	(4.21e-05)	(6.97e-05)	(0.000239)	(0.000124)	(0.000236)
INF	3.15e-05	0.00105*	0.000303*	0.00109**	0.00153*	-4.83e-06	2.82e-05*	0.000123**	2.47e-05
	(0.000128)	(0.000503)	(0.000683)	(0.000443)	(0.000768)	(0.000193)	(0.000135)	(0.000288)	(0.000350)
GEXP	-0.000830***	0.00120*	-0.00241*	0.000377	0.000551*	-0.000569**	0.000734*	9.74e-05**	0.000870*
	(0.000854)	(0.000734)	(0.00237)	(0.000281)	(0.000528)	(0.00116)	(0.00100)	(0.00119)	(0.00168)
GCF	0.00160*	0.000741***	0.00115*	0.00120***	0.00116***	0.00113	0.00144*	0.000407	0.00149**
	(0.000820)	(0.000223)	(0.000643)	(0.000177)	(0.000288)	(0.000933)	(0.000815)	(0.000898)	(0.00146)
DCP	-0.000270*	-0.000148***	-0.00104**	-0.000205***	0.000247**	-9.53e-05	-0.00439***	3.37e-05	-0.00403*

	(0.000232)	(2.70e-05)	(0.000631)	(2.48e-05)	(0.000537)	(0.000333)	(0.00135)	(0.000385)	(0.00295)
INST		0.0178**	-0.0580**	0.0132***	0.0395*	0.00459*	-0.0797***	0.0108*	-0.0424*
		(0.00810)	(0.0589)	(0.00184)	(0.0266)	(0.00530)	(0.0250)	(0.0201)	(0.0422)
DCP*INST			0.000653**		-0.000261*		0.000883***		0.000780**
			(0.000499)		(0.000312)		(0.000296)		(0.000568)
Constant	0.0401**	0.0896*	0.0268	0.0827**	0.0670	0.122*	0.249	0.241**	0.415
	(0.109)	(0.0487)	(0.0903)	(0.0297)	(0.0457)	(0.159)	(0.180)	(0.185)	(0.255)
Observation	115	75	75	75	75	115	115	115	115
Countries	16	16	16	16	16	16	16	16	16
AR1	-2.32	-2.24	-2.00	-2.13	-2.13	-3.13	-2.03	-2.31	-1.92
	(0.020)	(0.025)	(0.046)	(0.034)	(0.034)	(0.002)	(0.042)	(0.021)	(0.055)
AR2	-1.60	-0.32	0.65	0.26	0.49	-1.69	-1.54	-1.51	-1.00
	(0.110)	(0.751)	(0.518)	(0.794)	(0.626)	(0.092)	(0.125)	(0.132)	(0.317)
Hansen	6.01	9.39	4.88	5.82	6.19	5.71	4.31	4.91	4.41
	(0.538)	(0.153)	(0.431)	(0.444)	(0.288)	(0.456)	(0.505)	(0.555)	(0.492)

Robust standard errors in parentheses; + $p<0.1$; * $p<0.05$; ** $p<0.01$. Dependent variable: Growth. DCP is the proxy of financial development. INIT, HC, POP, TRA, INF, GEXP and GCF are control variables. PS, GEF, COR, LO are institutions and regressed one by one from second column. "Hansen is a test to check over identifying restrictions for instruments. AR (1) and AR (2) are tests to check the existence of auto correlation in the residual terms

Table 6 Financial Development, Institutions and their Interaction using two step system GMM

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VAR	Baseline	PS	DCPB*PS	GEF	DCPB*GEF	COR	DCPB*COR	LO	DCPB*LO
INIT	-0.0181**	-0.0174*	-0.0305	-0.0143***	-0.0131***	-0.0256*	-0.0354	-0.0355*	-0.0235
	(0.0165)	(0.00826)	(0.0183)	(0.00320)	(0.00249)	(0.0198)	(0.0205)	(0.0198)	(0.0237)
HC	0.0265**	0.0233***	0.0860	0.00805*	-0.00135*	0.0262*	0.108***	0.0289*	0.0465**
	(0.0112)	(0.00783)	(0.0497)	(0.00383)	(0.0135)	(0.0139)	(0.0322)	(0.0161)	(0.0205)
POP	-0.00895***	-0.00748***	-0.0105***	-0.00782***	-0.00778***	-0.00745*	-0.0128***	-0.00706**	-0.00891**
	(0.00273)	(0.00156)	(0.00206)	(0.00113)	(0.00112)	(0.00392)	(0.00372)	(0.00310)	(0.00349)
TRA	0.000192*	0.000342***	0.000541**	0.000216***	0.000196**	0.000203*	0.000584***	0.000212	0.000333*
	(9.56e-05)	(6.66e-05)	(0.000213)	(3.40e-05)	(7.54e-05)	(0.000115)	(0.000161)	(0.000129)	(0.000212)
INF	2.25e-06*	0.00137**	0.00106	0.00137***	0.00152**	-3.46e-05*	-9.58e-07**	8.42e-05	0.000158*
	(0.000156)	(0.000471)	(0.000748)	(0.000419)	(0.000560)	(0.000182)	(0.000167)	(0.000208)	(0.000221)
GEXP	-0.000234	0.00147**	0.000701	0.000672**	0.000619*	-2.83e-05	0.00117**	0.000118*	-0.000587**
	(0.00109)	(0.000670)	(0.00180)	(0.000289)	(0.000322)	(0.00122)	(0.00102)	(0.00122)	(0.00151)
GCF	0.000990*	0.000887**	0.000966*	0.00128***	0.00126***	0.000687	0.00113*	0.000400**	0.00175*
	(0.00106)	(0.000266)	(0.00114)	(0.000172)	(0.000184)	(0.00111)	(0.000697)	(0.00105)	(0.00143)
DCPB	-0.000199**	-0.000227***	-0.00169*	-0.000221***	7.88e-05*	-5.07e-05	-0.00465***	2.58e-05	-0.00289*

	(0.000399)	(2.31e-05)	(0.000923)	(6.38e-05)	(0.000392)	(0.000487)	(0.00146)	(0.000423)	(0.00195)
INST		0.0190*	-0.0760*	0.0169***	0.0327**	0.00270*	-0.0730***	0.00856**	-0.0191*
		(0.00891)	(0.0629)	(0.00446)	(0.0211)	(0.00564)	(0.0238)	(0.0125)	(0.0239)
DCPB*INST			0.00115*		-0.000174**		0.000952*		0.000463**
			(0.000718)		(0.000233)		(0.000281)		(0.000346)
Constant	0.111**	0.0639	0.112*	0.0849**	0.0795**	0.167	0.315*	0.225**	0.200*
	(0.149)	(0.0546)	(0.109)	(0.0308)	(0.0353)	(0.174)	(0.163)	(0.165)	(0.208)
Observation	115	75	75	75	75	115	115	115	115
Countries	16	16	16	16	16	16	16	16	16
AR1	-2.67	-2.24	-0.77	-2.05	-2.09	-2.71	-1.86	-2.34	-2.76
	(0.008)	(0.025)	(0.444)	(0.040)	(0.036)	(0.007)	(0.063)	(0.020)	(0.006)
AR2	-1.30	-0.24	-0.35	0.21	0.38	-1.32	-1.93	-1.35	-0.78
	(0.193)	(0.811)	(0.728)	(0.834)	(0.707)	(0.187)	(0.054)	(0.176)	(0.438)
Hansen	5.98	8.27	3.44	5.87	6.25	5.52	4.06	5.00	5.45
	(0.542)	(0.219)	(0.632)	(0.438)	(0.283)	(0.479)	(0.540)	(0.544)	(0.363)

Robust standard errors in parentheses; + p<0.1; * p<0.05; ** p<0.01. Dependent variable: Growth. DCPB is the proxy of financial development. INIT, HC, POP, TRA, INF, GEXP and GCF are control variables. PS, GEF, COR, LO are institutions and regressed one by one from second column. "Hansen is a test to check over identifying restrictions for instruments. AR (1) and AR (2) are tests to check the existence of auto correlation in the residual terms

Table 7 Financial Development, Institutions and their Interaction using two step system GMM

VAR	(1) Baseline	(2) PS	(3) LL*PS	(4) GEF	(5) LL*GEF	(6) COR	(7) LL*COR	(8) LO	(9) LL*LO
INIT	-0.0213	-0.0220**	-0.0192*	-0.00953	-0.0127	-0.0518*	-0.0477	-0.0605*	-0.0335
	(0.0159)	(0.0302)	(0.0409)	(0.0160)	(0.0145)	(0.0276)	(0.0297)	(0.0308)	(0.0293)
HC	0.0224**	0.0375*	0.0307	0.0235*	0.0154	0.0357**	0.0449**	0.0379	0.0369*
	(0.00944)	(0.0202)	(0.0225)	(0.0204)	(0.0109)	(0.0152)	(0.0209)	(0.0262)	(0.0222)
POP	-0.00836***	-0.00683*	-0.00623**	-0.00848***	-0.00779***	-0.00210**	-0.00321***	-0.00391**	-0.00581*
	(0.00235)	(0.00345)	(0.00495)	(0.00213)	(0.00232)	(0.00518)	(0.00571)	(0.00399)	(0.00431)
TRA	0.000189**	0.000522**	0.000444	0.000290**	0.000264***	0.000285	0.000350	0.000217	0.000160
	(8.43e-05)	(0.000216)	(0.000329)	(0.000129)	(7.91e-05)	(0.000201)	(0.000249)	(0.000228)	(0.000225)
INF	1.01e-06*	0.000256	0.000672**	0.000829	0.00177*	-9.71e-05*	-5.38e-05	0.000259**	-2.20e-05
	(0.000155)	(0.00136)	(0.00121)	(0.000867)	(0.000856)	(0.000198)	(0.000208)	(0.000325)	(0.000498)
GEXP	0.000331	0.00194*	0.00131	0.000467	-0.000461*	0.00101	0.000991	0.00116	0.000676**
	(0.000836)	(0.00281)	(0.00366)	(0.000779)	(0.000900)	(0.00110)	(0.00112)	(0.00109)	(0.00117)
GCF	0.00105	0.000634**	0.000784	0.000994***	0.000132	0.000424	0.000432*	0.000314	0.00137
	(0.000695)	(0.000233)	(0.000486)	(0.000312)	(0.000294)	(0.000884)	(0.000952)	(0.000897)	(0.00103)
LL	-7.59e-05*	-0.000504**	-0.000449	-0.000451*	0.00141***	0.000358	-0.000720*	0.000347*	-0.00247*

	(0.000334)	(0.000580)	(0.000918)	(0.000417)	(0.000457)	(0.000561)	(0.00163)	(0.000781)	(0.00418)
INST		0.0254*	0.0248**	0.00737	0.0705***	0.0113	-0.00614	0.0194*	-0.0263
		(0.0269)	(0.0608)	(0.0123)	(0.0131)	(0.00692)	(0.0257)	(0.0203)	(0.0581)
LL*INST			3.42e-05*		-0.00101***		0.000220**		0.000514*
			(0.000428)		(0.000214)		(0.000300)		(0.000902)
Constant	0.135	0.0686	0.0611*	0.0204	-0.00129*	0.306**	0.312	0.347	0.308*
	(0.126)	(0.184)	(0.235)	(0.158)	(0.121)	(0.218)	(0.229)	(0.221)	(0.294)
Observation	114	74	74	74	74	114	114	114	114
Countries	16	16	16	16	16	16	16	16	16
AR1	-2.59	-1.94	-1.83	-1.96	-1.32	-1.71	-1.84	-2.39	-1.94
	(0.010)	(0.053)	(0.067)	(0.050)	(0.187)	(0.088)	(0.065)	(0.017)	(0.052)
AR2	-1.83	-0.24	-0.26	0.20	0.66	-2.22	-2.11	-1.51	-1.21
	(0.068)	(0.808)	(0.797)	(0.839)	(0.509)	(0.026)	(0.035)	(0.130)	(0.225)
Hansen	7.78	7.01	5.98	6.71	10.74	5.22	4.47	5.45	5.31
	(0.352)	(0.319)	(0.308)	(0.348)	(0.057)	(0.515)	(0.484)	(0.488)	(0.379)

Robust standard errors in parentheses; + $p<0.1$; * $p<0.05$; ** $p<0.01$. Dependent variable: Growth. LL is the proxy of financial development. INIT, HC, POP, TRA, INF, GEXP and GCF are control variables. PS, GEF, COR, LO are institutions and regressed one by one from second column. "Hansen is a test to check over identifying restrictions for instruments. AR (1) and AR (2) are tests to check the existence of auto correlation in the residual terms

Middle Income Countries

In middle income category there are 17 countries Algeria, Botswana, Brazil, China, Costa Rica, Dominican Republic, Ecuador, Gabon, Iran Islamic Republic, Jamaica, Jordon, Malaysia, Mexico, Peru, South Africa, Thailand, Turkey. These countries are selected according to the availability of data.

Results of System GMM, are demonstrated by table 8, table 9 and table 10, the impact of financial development (DCP, DCPB and LL) in all three tables is significantly positive consistently, its mean that financial development encourages the economic performance in these economies.

Column 2, 4, 6 and 8 in table 8, 9 and 10 explains the role of institutions (PS, GEF, COR and LO) their impact is significantly positive which means that the institutional reforms play the vital role towards the growth. When the country is politically stable the growth of that country will boost similarly when there is no and least corruption and proper check and balance it will strengthen the country economically as well as financially
.

Remaining columns 3, 5, 7 and 9 in table 8, table 9 and table 10 shows the findings of financial development when it is emended in the sound institutions. DCP*PS, DCPB*PS and LL*PS are significantly positive consistently in all three tables. DCP*GEF significantly negative in table 8 while DCPB*GEF and LL*GEF are significantly positive in tables 9 and 10. COR and LO gives the significantly negative results consistently in table 8, 9 and 10.

Table 8 Financial Development, Institutions and their Interaction using two step system GMM

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VAR	Baseline	PS	DCP*PS	GEF	DCP*GEF	COR	DCP*COR	LO	DCP*LO
INIT	-0.0288***	-0.0238***	-0.0225***	-0.0244***	-0.0230*	-0.0241***	-0.0211***	-0.0233***	-0.0238***
	(0.00360)	(0.00463)	(0.00538)	(0.00626)	(0.0117)	(0.00301)	(0.00349)	(0.00342)	(0.00340)
HC	0.000184*	-0.000753	0.00118*	0.000404	0.000501*	0.00824	0.00196*	0.00627	0.0117**
	(0.00763)	(0.00755)	(0.0108)	(0.00749)	(0.0181)	(0.00555)	(0.00717)	(0.00572)	(0.00445)
POP	-0.00810***	-0.00847	-0.00976*	-0.00598	-0.00504	-0.00854**	-0.0106**	-0.00964**	-0.0103**
	(0.00257)	(0.00486)	(0.00487)	(0.00371)	(0.00331)	(0.00390)	(0.00435)	(0.00450)	(0.00455)
TRA	7.78e-05*	-0.000115	-9.02e-05	-0.000162**	-0.000162	3.69e-05	0.000184**	6.29e-05	0.000123

	(8.49e-05)	(8.00e-05)	(8.02e-05)	(7.19e-05)	(0.000305)	(9.67e-05)	(0.000152)	(0.000110)	(0.000116)
INF	2.01e-06	-0.000216**	-0.000217**	-0.000284	-0.000263*	7.66e-07	7.33e-06	4.13e-06	1.76e-05*
	(3.07e-06)	(0.000231)	(0.000231)	(0.000216)	(0.000238)	(3.63e-06)	(4.84e-06)	(3.46e-06)	(8.77e-06)
GEXP	-0.000675	-0.00159	-0.00109	-0.00181*	-0.00197*	-0.00148**	-0.000901**	-0.00131**	-0.00217**
	(0.000490)	(0.00107)	(0.00116)	(0.000948)	(0.00112)	(0.000525)	(0.000421)	(0.000616)	(0.000897)
GCF	0.000635*	0.000455**	0.000445	0.000322*	0.000185	0.000771*	0.00111**	0.000644	0.00148**
	(0.000435)	(0.000561)	(0.000503)	(0.000496)	(0.000626)	(0.000424)	(0.000430)	(0.000435)	(0.000615)
DCP	0.000502***	0.000322*	0.000350**	0.000307*	0.000336***	0.000456*	0.00165*	0.000395**	0.00175*
	(0.000228)	(0.000159)	(0.000226)	(0.000219)	(0.000272)	(0.000234)	(0.000977)	(0.000247)	(0.000911)
INST		0.00819*	0.00266	0.00846**	0.0132	0.00446*	0.0318*	0.00496**	0.0291*
		(0.0110)	(0.0194)	(0.0161)	(0.0405)	(0.00515)	(0.0201)	(0.00548)	(0.0162)
DCP*INST			5.96e-05*		0.000118***		-0.000552**		0.000457*
			(0.000356)		(0.000930)		(0.000403)		(0.000288)
Constant	0.241***	0.248***	0.223***	0.256***	0.249***	0.185***	0.0901	0.183***	0.0932
	(0.0268)	(0.0391)	(0.0683)	(0.0511)	(0.0708)	(0.0315)	(0.0714)	(0.0320)	(0.0712)
Observation	134	84	84	84	84	133	133	133	133

Countries	17	17	17	17	17	17	17	17	17
AR1	-2.86	-2.53	-2.57	-2.61	-2.46	-2.90	-3.31	-2.99	-2.85
	(0.004)	(0.011)	(0.010)	(0.009)	(0.014)	(0.004)	(0.001)	(0.003)	(0.004)
AR2	0.00	-0.75	-0.66	-0.70	-0.77	-0.02	-0.77	0.07	0.81
	(0.998)	(0.453)	(0.507)	(0.486)	(0.443)	(0.982)	(0.443)	(0.942)	(0.421)
Hansen	7.30	4.57	4.24	5.14	5.36	6.92	5.12	6.76	5.00
	(0.399)	(0.600)	(0.516)	(0.525)	(0.374)	(0.328)	(0.402)	(0.343)	(0.416)

Robust standard errors in parentheses; + p<0.1; * p<0.05; ** p<0.01. Dependent variable: Growth. DCP is the proxy of financial development. INIT, HC, POP, TRA, INF, GEXP and GCF are control variables. PS, GEF, COR, LO are institutions and regressed one by one from second column. "Hansen is a test to check over identifying restrictions for instruments. AR (1) and AR (2) are tests to check the existence of auto correlation in the residual terms

Robust standard errors in parentheses; + p<0.1; * p<0.05; ** p<0.01. Dependent variable: Growth. DCPB is the proxy of financial development. INIT, HC, POP, TRA, INF, GEXP and GCF are control variables. PS, GEF, COR, LO are institutions and regressed one by one from second column. "Hansen is a test to check over identifying restrictions for instruments. AR (1) and AR (2) are tests to check the existence of auto correlation in the residual terms

Robust standard errors in parentheses; + p<0.1; * p<0.05; ** p<0.01. Dependent variable: Growth. LL is the proxy of financial development. INIT, HC, POP, TRA, INF, GEXP and GCF are control variables. PS, GEF, COR, LO are institutions and regressed one by one from second column. "Hansen is a test to check over identifying restrictions for instruments. AR (1) and AR (2) are tests to check the existence of auto correlation in the residual terms

Low Income Countries

In low-income category there are 24 countries Bangladesh, Bolivia, Burkina Faso, Cameroon, Egypt, Gambia The, Ghana, Haiti, Honduras, India, Indonesia, Kenya, Madagascar, Mali, Morocco, Niger, Nigeria, Pakistan, Philippines, Senegal, Sri Lanka, Togo, Tunisia, Uganda. These countries are selected according to the availability of data.

Results of System GMM, are demonstrated by table 11, table 12 and table 13, firstly the impact of financial development (DCP, DCPB and LL) are giving mixed results positive as well as negative on the other hand in some models it gives statistically significant results as well as insignificant results respectively.

In table 11 the impact of PS is negative and insignificant, GEF is positive and significant, COR negatively significant and LO is positively insignificant. In table 12 PS and COR are negatively insignificant, GEF and LO are positive significant. In table 13 PS is negatively significant, GEF is positively significant, COR negatively insignificant and LO is positively insignificant.

Now we are going to explain the interaction between financial development and institutions so DCP*PS, DCPB*PS and LL*PS are negatively significant in all three tables 11, 12 and 13 respectively.

Similarly, DCP*GEF, DCPB*GEF and LL*GEF are also negatively significant consistently. The interaction of financial development (DCP, DCPB and LL) with COR is positively insignificant in table 11, 12 and 13 respectively. DCP*LO and DCPB*LO in table 11 and 12 are

Table 9 Financial Development, Institutions and their Interaction using two step system GMM

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VAR	Baseline	PS	DCPB*PS	GEF	DCPB*GEF	COR	DCPB*COR	LO	DCPB*LO
INIT	-0.0273***	-0.0213***	-0.0199***	-0.0208**	-0.0219	-0.0229***	-0.0227***	-0.0226***	-0.0241***
	(0.00317)	(0.00480)	(0.00566)	(0.00815)	(0.0127)	(0.00281)	(0.00420)	(0.00326)	(0.00274)
HC	5.34e-05*	-0.00186	-0.000239**	-0.000863	0.00293*	0.00703**	-0.00124	0.00571	0.0127**
	(0.00745)	(0.00726)	(0.0111)	(0.00841)	(0.0135)	(0.00560)	(0.00786)	(0.00614)	(0.00452)
POP	-0.00990***	-0.00849	-0.0103*	-0.00748**	-0.00616*	-0.00917**	-0.00888*	-0.0105**	-0.0113**
	(0.00174)	(0.00502)	(0.00491)	(0.00347)	(0.00340)	(0.00322)	(0.00488)	(0.00404)	(0.00397)
TRA	7.49e-05**	-0.000122**	-8.35e-05*	-0.000130	-0.000195	1.19e-05**	0.000277	4.59e-05**	0.000102

	(7.21e-05)	(8.01e-05)	(8.71e-05)	(7.62e-05)	(0.000302)	(8.65e-05)	(0.000176)	(0.000116)	(0.000118)
INF	8.36e-08*	-0.000286**	-0.000294*	-0.000304	-0.000247**	-8.99e-07	1.39e-05*	2.33e-06	1.81e-05*
	(2.83e-06)	(0.000232)	(0.000226)	(0.000197)	(0.000193)	(3.56e-06)	(7.69e-06)	(3.78e-06)	(1.01e-05)
GEXP	-9.47e-05	-0.00119*	-0.000709	-0.00144**	-0.00168	-0.000918**	-0.000949**	-0.000888**	-0.00172**
	(0.000545)	(0.000842)	(0.000925)	(0.000670)	(0.00100)	(0.000389)	(0.000369)	(0.000401)	(0.000724)
GCF	0.000381	8.73e-05**	9.13e-05	-6.71e-05*	-0.000112	0.000439**	0.00112**	0.000437	0.00120*
	(0.000448)	(0.000614)	(0.000517)	(0.000629)	(0.000691)	(0.000484)	(0.000515)	(0.000486)	(0.000638)
DCPB	0.000485**	0.000370**	0.000375**	0.000402*	0.000392**	0.000496*	0.00261**	0.000434	0.00228**
	(0.000204)	(0.000168)	(0.000232)	(0.000256)	(0.000317)	(0.000236)	(0.00122)	(0.000263)	(0.00104)
INST		0.00267*	-0.00140	-0.00207***	-0.00279	0.00323**	0.0405*	0.00337	0.0329*
		(0.0126)	(0.0200)	(0.0198)	(0.0393)	(0.00510)	(0.0202)	(0.00555)	(0.0172)
DCPB*INST			2.10e-05*		5.82e-05**		-0.000925*		0.000595*
			(0.000348)		(0.000907)		(0.000480)		(0.000323)
Constant	0.235***	0.232***	0.208***	0.230***	0.237**	0.185***	0.0803	0.186***	0.0863
	(0.0239)	(0.0419)	(0.0688)	(0.0603)	(0.0865)	(0.0277)	(0.0696)	(0.0283)	(0.0680)

Observations	134	84	84	84	84	133	133	133	133
Countries	17	17	17	17	17	17	17	17	17
AR1	-2.87	-2.60	-2.68	-2.61	-2.45	-2.87	-3.30	-2.97	-2.68
	(0.004)	(0.009)	(0.007)	(0.009)	(0.014)	(0.004)	(0.001)	(0.003)	(0.007)
AR2	-0.05	-0.67	-0.60	-0.62	-0.72	-0.02	-0.97	0.05	0.79
	(0.963)	(0.502)	(0.547)	(0.533)	(0.474)	(0.985)	(0.332)	(0.964)	(0.427)
Hansen	6.72	4.64	4.08	4.87	5.26	6.46	3.28	6.20	4.78
	(0.459)	(0.591)	(0.538)	(0.561)	(0.385)	(0.373)	(0.658)	(0.401)	(0.443)

Table 10 Financial Development, Institutions and their Interaction using two step system GMM

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VAR	Baseline	PS	LL*PS	GEF	LL*GEF	COR	LL*COR	LO	LL*LO
INIT	-0.0219***	-0.0191**	-0.0117	-0.0199*	-0.0209	-0.0199***	-0.0239***	-0.0196***	-0.0266***
	(0.00485)	(0.00815)	(0.0101)	(0.0101)	(0.0141)	(0.00599)	(0.00715)	(0.00510)	(0.00459)
HC	0.000634**	-0.00249*	-0.00307**	-0.00202	-0.00156	0.00611**	0.00568**	0.00433	0.0244**
	(0.00902)	(0.00956)	(0.00879)	(0.0101)	(0.0104)	(0.00667)	(0.00724)	(0.00623)	(0.0105)
POP	-0.0126***	-0.0117**	-0.00855	-0.0103**	-0.0102**	-0.0136***	-0.00203	-0.0137***	-0.0117***
	(0.00338)	(0.00543)	(0.00593)	(0.00435)	(0.00449)	(0.00263)	(0.00722)	(0.00293)	(0.00350)
TRA	7.78e-05*	-7.91e-05**	-0.000231*	-0.000102	-0.000122**	3.32e-05	0.000356*	6.60e-05*	5.52e-05
	(0.000125)	(0.000110)	(0.000170)	(0.000107)	(0.000220)	(0.000120)	(0.000188)	(0.000107)	(0.000120)

INF	7.92e-06***	-0.000233	-0.000590**	-0.000259*	-0.000267	5.42e-06***	-4.01e-06	7.34e-06***	1.72e-05*
	(1.33e-06)	(0.000201)	(0.000388)	(0.000198)	(0.000220)	(1.73e-06)	(5.15e-06)	(1.48e-06)	(8.94e-06)
GEXP	-0.00137**	-0.00149	-0.000763*	-0.00154	-0.00140	-0.00145**	-0.000713	-0.00122*	-0.00188*
	(0.000628)	(0.000883)	(0.00141)	(0.000899)	(0.00189)	(0.000660)	(0.000604)	(0.000641)	(0.000894)
GCF	0.000443*	-9.19e-05**	-0.000294*	-0.000113	-7.05e-05*	0.000526**	0.000942**	0.000457	0.00111*
	(0.000561)	(0.000723)	(0.000919)	(0.000824)	(0.000913)	(0.000512)	(0.000383)	(0.000517)	(0.000603)
LL	0.000362**	0.000293*	0.000760*	0.000281***	0.000259*	0.000395	0.00324**	0.000279*	0.00305*
	(0.000300)	(0.000207)	(0.000416)	(0.000261)	(0.000345)	(0.000276)	(0.00152)	(0.000242)	(0.00172)
INST		0.00454*	-0.0529*	0.00608**	0.00253**	0.00556*	0.0604**	0.00537	0.0522*
		(0.0108)	(0.0468)	(0.0185)	(0.0482)	(0.00510)	(0.0264)	(0.00475)	(0.0270)
LL*INST			0.000918**		7.98e-05**		0.00124**		-0.000836*
			(0.000775)		(0.000911)		(0.000584)		(0.000487)
Constant	0.210***	0.225***	0.142	0.232***	0.238**	0.168***	0.0136	0.170***	0.0291
	(0.0285)	(0.0523)	(0.0873)	(0.0614)	(0.0891)	(0.0505)	(0.105)	(0.0387)	(0.103)
Observations	135	85	85	85	85	134	134	134	134

Countries	17	17	17	17	17	17	17	17	17
AR1	-2.98	-2.70	-3.56	-2.62	-2.35	-2.91	-2.49	-3.04	-2.51
	(0.003)	(0.007)	(0.000)	(0.009)	(0.019)	(0.004)	(0.013)	(0.002)	(0.012)
AR2	0.44	-0.83	-0.31	-0.79	-0.82	0.37	-0.90	0.38	1.27
	(0.658)	(0.409)	(0.759)	(0.432)	(0.412)	(0.711)	(0.370)	(0.707)	(0.203)
Hansen	7.61	6.12	5.85	6.25	6.22	7.44	3.33	7.92	6.37
	(0.369)	(0.410)	(0.321)	(0.396)	(0.285	(0.282)	(0.649)	(0.244)	(0.272)

Table 11: Financial Development, Institutions and their Interaction using two step system GMM

VAR	(1) Baseline	(2) PS	(3) DCP*PS	(4) GEF	(5) DCP*GEF	(6) COR	(7) DCP*COR	(8) LO	(9) DCP*LO
INIT	-0.0387***	-0.0146	0.00526	-0.0230***	0.0176	-0.0360***	-0.0381***	-0.0406***	-0.0525***
	(0.00927)	(0.00924)	(0.0128)	(0.00818)	(0.0214)	(0.0107)	(0.0100)	(0.00892)	(0.0168)
HC	0.0270**	0.00216	0.00119	0.0103	-0.0366	0.0215*	0.0192	0.0222**	0.0305*
	(0.0108)	(0.00851)	(0.0108)	(0.00738)	(0.0304)	(0.0120)	(0.0145)	(0.0100)	(0.0227)
POP	-0.00498*	-0.00398**	-0.0102*	-0.00501	-0.0288	-0.0117**	-0.00938*	0.000100*	0.0100
	(0.00491)	(0.00526)	(0.0106)	(0.00462)	(0.0178)	(0.00758)	(0.00767)	(0.00800)	(0.0152)
TRA	5.94e-07	-0.000143*	-5.93e-05	-0.000236**	0.000112	4.84e-05	2.10e-05*	3.47e-05*	-1.08e-06
	(0.000120)	(0.000150)	(0.000189)	(9.85e-05)	(0.000310)	(0.000143)	(0.000175)	(0.000127)	(0.000228)
INF	-5.41e-07	-7.22e-05*	-0.00158**	-0.000243	-0.00138*	-7.74e-06*	-8.47e-06	6.79e-06**	4.49e-06

	(6.14e-06)	(0.000555)	(0.000751)	(0.000468)	(0.000733)	(7.16e-06)	(9.60e-06)	(6.83e-06)	(1.14e-05)
GEXP	-0.000283*	-0.000308	0.000378	-0.000139*	7.04e-05**	4.89e-05	-0.000519*	-0.00133	-0.00219
	(0.000899)	(0.000796)	(0.00125)	(0.000932)	(0.00131)	(0.00140)	(0.00150)	(0.00149)	(0.00180)
GCF	0.000405	0.000187	5.78e-05*	0.000107	-0.000117**	0.000305	0.000118	0.000182*	-0.000180*
	(0.000452)	(0.000191)	(0.000399)	(0.000188)	(0.000542)	(0.000429)	(0.000464)	(0.000380)	(0.000667)
DCP	0.00145*	0.000950	-0.00135	0.000876	-0.00301*	0.00118	0.000364	0.00179**	4.31e-05
	(0.000748)	(0.000634)	(0.000971)	(0.000542)	(0.00214)	(0.000790)	(0.00271)	(0.000760)	(0.00318)
INST		-0.00733	0.0507***	0.0144**	0.158*	-0.0170*	-0.0302	0.00792	-0.0114
		(0.00528)	(0.0146)	(0.00680)	(0.0811)	(0.00881)	(0.0255)	(0.00587)	(0.0326)
DCP*INST			-0.00218***		-0.00473**		0.000463		0.000862
			(0.000547)		(0.00289)		(0.000932)		(0.00118)
Constant	0.208***	0.107**	0.0448	0.174***	0.151*	0.255***	0.306***	0.202***	0.300**
	(0.0561)	(0.0470)	(0.0712)	(0.0407)	(0.0752)	(0.0728)	(0.0852)	(0.0598)	(0.136)
Observations	183	119	119	119	119	179	177	179	179
Countries	24	24	24	24	24	24	24	24	24
AR1	-2.75	-1.98	-1.12	-2.03	-1.34	-2.56	-2.22	-2.63	-1.56
	(0.006)	(0.047)	(0.263)	(0.043)	(0.180)	(0.011)	(0.026)	(0.009)	(0.118)
AR2	-0.32	0.08	0.90	-0.02	0.36	-0.07	-0.40	-1.46	-1.59
	(0.747)	(0.933)	(0.367)	(0.988)	(0.715)	(0.946)	(0.691)	(0.143)	(0.113)
Hansen	7.76	7.42	2.15	8.41	3.83	4.90	4.60	6.33	3.50
	(0.354)	(0.284)	(0.828)	(0.210)	(0.574)	(0.557)	(0.466)	(0.387)	(0.623)

Robust standard errors in parentheses; + p<0.1; * p<0.05; ** p<0.01. Dependent variable: Growth. DCP is the proxy of financial development. INIT, HC, POP, TRA, INF, GEXP and GCF are control variables. PS, GEF, COR, LO are institutions and regressed one by one from second column. "Hansen is a test to check over identifying restrictions for instruments. AR (1) and AR (2) are tests to check the existence of auto correlation in the residual terms

Table 12 Financial Development, Institutions and their Interaction using two step system GMM

VAR	(1) Baseline	(2) PS	(3) DCPB*PS	(4) GEF	(5) DCPB*GEF	(6) COR	(7) DCPB*COR	(8) LO	(9) DCPB*LO
INIT	-0.0411***	-0.0153	0.00542	-0.0223**	0.0168	-0.0388***	-0.0411***	-0.0423***	-0.0494**
	(0.0104)	(0.00957)	(0.0138)	(0.00800)	(0.0220)	(0.0119)	(0.0117)	(0.00995)	(0.0186)
HC	0.0289**	0.00134	0.00109	0.00991*	-0.0308	0.0228*	0.0176*	0.0240**	0.0276
	(0.0115)	(0.00986)	(0.0113)	(0.00790)	(0.0277)	(0.0130)	(0.0173)	(0.0100)	(0.0269)
POP	-0.00276*	-0.000340	-0.00830**	-0.00369*	-0.0307	-0.00943	-0.00624*	0.00284*	0.0102
	(0.00569)	(0.00555)	(0.0132)	(0.00449)	(0.0199)	(0.00879)	(0.00955)	(0.00867)	(0.0168)
TRA	-8.14e-06*	-0.000107	-7.12e-05	-0.000242**	0.000103	2.46e-05*	-3.38e-05	3.81e-05*	2.68e-05
	(0.000144)	(0.000170)	(0.000199)	(9.98e-05)	(0.000275)	(0.000162)	(0.000188)	(0.000143)	(0.000249)
INF	9.89e-07	-1.64e-05**	-0.00163*	-0.000193	-0.00140*	-5.39e-06	-4.02e-06*	8.36e-06	8.26e-06*
	(6.12e-06)	(0.000580)	(0.000851)	(0.000465)	(0.000715)	(8.30e-06)	(1.30e-05)	(7.40e-06)	(1.40e-05)

GEXP	-0.000695	-0.000612**	0.000239	-0.000237*	0.000286	-0.000351	-0.00103**	-0.00173	-0.00242*
	(0.00107)	(0.000834)	(0.00142)	(0.000941)	(0.00149)	(0.00163)	(0.00188)	(0.00164)	(0.00205)
GCF	0.000211	3.64e-05*	4.90e-05**	2.70e-05	0.000179*	0.000155	-0.000102*	2.34e-05**	-0.000352*
	(0.000517)	(0.000231)	(0.000505)	(0.000210)	(0.000676)	(0.000464)	(0.000532)	(0.000427)	(0.000713)
DCPB	0.00189**	0.00127*	-0.00139	0.00104*	-0.00370	0.00164	0.00201	0.00221**	0.00110
	(0.000902)	(0.000732)	(0.00128)	(0.000597)	(0.00269)	(0.00101)	(0.00383)	(0.000901)	(0.00419)
INST		-0.00908	0.0535***	0.0137*	0.160*	-0.0166	-0.0211	0.00833*	-0.00268
		(0.00620)	(0.0166)	(0.00714)	(0.0811)	(0.0107)	(0.0316)	(0.00660)	(0.0399)
DCPB*INST			-0.00234***		-0.00506*		5.42e-05		0.000593
			(0.000644)		(0.00313)		(0.00118)		(0.00154)
Constant	0.217***	0.100*	0.0419	0.167***	0.156**	0.265***	0.299***	0.202***	0.260
	(0.0621)	(0.0510)	(0.0728)	(0.0399)	(0.0710)	(0.0791)	(0.0872)	(0.0674)	(0.155)
Observations	183	119	119	119	119	179	177	179	179
Countries	24	24	24	24	24	24	24	24	24
AR1	-2.71	-1.78	-1.33	-1.97	-1.12	-2.47	-2.30	-2.52	-1.37
	(0.007)	(0.075)	(0.184)	(0.049)	(0.261)	(0.014)	(0.022)	(0.012)	(0.172)
AR2	-0.53	0.47	0.72	0.22	-0.03	-0.31	-0.43	-1.58	-1.52
	(0.594)	(0.640)	(0.468)	(0.826)	(0.979)	(0.755)	(0.670)	(0.114)	(0.128)
Hansen	6.48	7.55	1.74	7.84	3.17	3.95	3.19	5.22	2.55
	(0.485)	(0.273)	(0.884)	(0.250)	(0.673)	(0.683)	(0.671)	(0.516)	(0.769)

Robust standard errors in parentheses; + p<0.1; * p<0.05; ** p<0.01. Dependent variable: Growth. DCPB is the proxy of financial development. INIT, HC, POP, TRA, INF, GEXP and GCF are control variables. PS, GEF, COR, LO are institutions and regressed one by one from second column. "Hansen is a test to check over identifying restrictions for instruments. AR (1) and AR (2) are tests to check the existence of auto correlation in the residual terms

Table 13: Financial Development, Institutions and their Interaction using two step system GMM

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VAR	Baseline	PS	LL*PS	GEF	LL*GEF	COR	LL*COR	LO	LL*LO
INIT	-0.0307***	-0.00406	-0.000188	-0.0320***	-0.0103	-0.0260***	-0.0282***	-0.0278***	-0.0261***
	(0.00680)	(0.0184)	(0.0230)	(0.0108)	(0.0216)	(0.00733)	(0.00770)	(0.00661)	(0.00738)
HC	0.0238***	-0.00457	-0.00924**	-0.00281	-0.0197	0.0184**	0.0235***	0.0200***	0.0187**
	(0.00754)	(0.0256)	(0.0324)	(0.0108)	(0.0198)	(0.00802)	(0.00814)	(0.00639)	(0.00784)
POP	-0.00291	-0.0421**	-0.0423**	0.0154*	0.00939	-0.00777**	-0.0121	-0.00439*	-0.00455
	(0.00513)	(0.0151)	(0.0156)	(0.00775)	(0.0218)	(0.00729)	(0.0120)	(0.00577)	(0.00644)
TRA	-2.16e-05	0.000573**	0.000609**	-9.79e-05	-3.86e-05	-1.95e-05*	9.22e-05	-9.23e-06	-3.03e-05
	(0.000148)	(0.000213)	(0.000272)	(0.000113)	(0.000167)	(0.000146)	(0.000141)	(0.000139)	(0.000144)
INF	2.68e-06	-0.00249***	-0.00261***	0.000486	-0.000330	-3.80e-06	-1.72e-05	1.58e-06*	1.08e-06
	(5.73e-06)	(0.000291)	(0.000437)	(0.000523)	(0.00107)	(7.79e-06)	(1.27e-05)	(5.56e-06)	(7.84e-06)
GEXP	-0.000230	0.00266*	0.00265	-0.00296**	-0.00265	-0.000293	0.000199*	-0.000318	-0.000494
	(0.000790)	(0.00155)	(0.00163)	(0.00111)	(0.00276)	(0.00109)	(0.00142)	(0.00112)	(0.00129)
GCF	0.000561	0.00105	0.00106	-0.00101***	-0.000968	0.000676	0.000462	0.000486**	0.000499

	(0.000468)	(0.000682)	(0.000695)	(0.000291)	(0.00103)	(0.000442)	(0.000384)	(0.000454)	(0.000462)
LL	0.00115**	-0.00217***	-0.00247*	0.00212***	0.000797	0.000825	-0.00250	0.000949*	0.001000
	(0.000549)	(0.000722)	(0.00139)	(0.000687)	(0.00146)	(0.000610)	(0.00203)	(0.000547)	(0.00107)
INST		-0.0338**	-0.0246	0.0549***	0.0816	-0.00678	-0.0529	0.00205	0.00308
		(0.0158)	(0.0442)	(0.0116)	(0.0984)	(0.00643)	(0.0324)	(0.00485)	(0.0122)
LL*INST			-0.000302**		-0.00113*		0.00128		-3.64e-05
			(0.00131)		(0.00147)		(0.000827)		(0.000313)
Constant	0.148***	0.135	0.125	0.226***	0.162	0.162***	0.286**	0.142***	0.136*
	(0.0445)	(0.104)	(0.107)	(0.0490)	(0.152)	(0.0491)	(0.103)	(0.0496)	(0.0691)
Observations	183	119	119	119	119	179	177	179	179
Countries	24	24	24	24	24	24	24	24	24
AR1	-2.31	-1.02	-1.05	0.02	-1.17	-2.29	-1.92	-2.23	-2.36
	(0.021)	(0.308)	(0.294)	(0.985)	(0.242)	(0.022)	(0.055)	(0.026)	(0.018)
AR2	-0.12	-0.02	-0.11	0.03	-0.11	-0.22	-0.16	-0.54	-0.53
	(0.902)	(0.981)	(0.910)	(0.974)	(0.912)	(0.826)	(0.872)	(0.592)	(0.595)
Hansen	9.29	5.04	4.93	3.93	5.84	8.63	3.57	9.80	10.71
	(0.232)	(0.539)	(0.424)	(0.686)	(0.322)	(0.195)	(0.612)	(0.133)	(0.057)

Robust standard errors in parentheses; + p<0.1; * p<0.05; ** p<0.01. Dependent variable: Growth. LL is the proxy of financial development. INIT, HC, POP, TRA, INF, GEXP and GCF are control variables. PS, GEF, COR, LO are institutions and regressed one by one from second column. "Hansen is a test to check over identifying restrictions for instruments. AR (1) and AR (2) are tests to check the existence of auto correlation in the residual terms

CONCLUSION
In the view of this research, we investigate the impact of financial development on economic progress by using different indicators of financial development named as domestic credit to private sector (DCP), domestic credit to private sector by banks (DCPB) and the last liquid liabilities (LL) and also examine the role of institutions (PS, GEFF, COR and LO) and finally, we analyze the relationship of financial development on growth in the presence of institutions. For this research we used data of 57 countries (high-income, middle-income and low-income) ranging as of 1980-2017 by taking five-year averages.

For the purpose, to measure the significance of financial development on growth by investigating the role of institutions, we have used different panel model alongside with two step system GMM as the central method. On the other hand, to see the greater reliability of results, we start our estimation with fixed effect and by using random effect. Along with it we have reached to system GMM. Yet, to check the fixed effect Hausman test has been applied and along with it we have used random effect too. Adding up to this, we have used Breusch and Pagan LM random effect test to take the decision of assortment between random and fixed effect. Findings of both models propose that the fixed effect and random effect will not be suitable to use. Hansen over identifying restrictions test and test for autocorrelation has also been used to examine GMM estimates consistency. According to the results of both tests, Hansen over identifying restrictions tests and test for autocorrelation, the estimates of GMM estimator is found to be consistent.

Overall results of this study are consistent and showing significance, but this correlation differs in accordance with income level while the impact of financial development in middle income economies has positive significant (Rioja and Valev 2004). But in high income economies case the financial development exerts the negative impact on economic growth because more finance is not necessarily playing an important role and it start negatively part towards growth. (Ductor and Grechyna 2015). In case of low-income countries, the effect of financial development is weakest and not defining the relationship (Demetriades and Law 2006).

But under the presence of sound institutions in these countries the impact of financial development towards growth is significantly positive except in the low-income countries' classification. So, results of this study are consistent with prior studies.

POLICY RECOMMENDATIONS

This study found that the financial development in the existence of sound institutions plays a significant part to increase the economic progress and the importance of financial development and institutions cannot be neglected. Both are significant for the growth of the economy as (King and Levine 1993) explains the importance of financial sector development while, (North 1991) explains the importance of institutions for the growth of the economy.

However, keeping in mind the aspects of financial development policy makers should design the policies which can create the environment where optimum level of financial development can be achieved. In order to make it possible new rules and regulation should be designed. Moreover, authorities should focus on the financial sector of the economy because the better increase instead of more increase may reduce the instability and improves the economic growth.

For this purpose, stable political environment and better law and order situation, proper government policies implementation and minimization of corruption should be promoted so that a good economic environment may be created which will promote the investment culture and increase in the economic performance and will causes more economic growth. Moreover, a mechanism needs to develop where interaction between the academic researchers, policy institutions and higher authorities should be increased in the policy matters. These all steps will make improvement in financial sector and boost the economy.

Limitations and Future Vision

Several aspects on which future research can be made to discover more determinants affecting the impact of financial development on economic growth by investigating the function of different institutions. Other researchers would cover the research by increasing the time span and including more number of countries by covering more institutional and structural variables.

The financial development variables may include domestic savings, bank assets, bank index, stock market return and institutional factors like, bureaucratic quality, voice and accountability, democracy quality, regulatory quality, and many other factors which have not been examined in our study can extend the additional prospects to researchers to do more research on the relationship among financial development and institutions, and their consequences on economic progress.

REFERENCES

Abid, F., Bahloul, S., &Mroua, M. (2016). Financial development and economic growth in MENA countries. Journal of Policy Modeling, 38(6), 1099-1117.
Abu-Bader, S., & Abu-Qarn, A. S. (2008). Financial development and economic growth: The Egyptian experience. Journal of Policy Modeling, 30(5), 887-898.

THE NEXUS BETWEEN FINANCIAL DEVELOPMENT, INSTITUTIONS AND ECONOMIC GROWTH: EVIDENCE FROM HIGH-, MIDDLE- AND LOW-INCOME COUNTRIES

PJAEE, 19 (1) (2022)

Abu-Bader, S., & Abu-Qarn, A. S. (2008). Financial development and economic growth: empirical evidence from six MENA countries. Review of Development Economics, 12(4), 803-817.

Acemoglu, D., & Zilibotti, F. (1997). Setting standards: Information accumulation in development.

Ahlin, C., & Pang, J. (2008). Are financial development and corruption control substitutes in promoting growth? Journal of Development Economics, 86(2), 414-433.

Ahmad, E., Ullah, M. A., &Arfeen, M. I. (2012). Does corruption affect economic growth? Latin american journal of economics, 49(2), 277-305.

Akpan, G. E., & Effiong, E. L. (2012). Governance and development performance: a cross-country analysis of Sub-Saharan Africa. Governance, 3(14), 54-67.

Alexiou, C., Tsaliki, P., & Osman, H. R. (2014). Institutional quality and economic growth: Empirical evidence from the Sudanese economy. Economic Annals, 59(203), 119-137.

Alexiou, C., Vogiazas, S., & Nellis, J. G. (2018). Reassessing the relationship between the financial sector and economic growth: Dynamic panel evidence. International Journal of Finance & Economics, 23(2), 155-173.

Ali, A. M. (2003). Institutional differences as sources of growth differences. Atlantic Economic Journal, 31(4), 348-362.

Allen, F., Qian, J., & Qian, M. (2005). Law, finance, and economic growth in China. Journal of financial economics, 77(1), 57-116.

Alonso-Borrego, C., & Arellano, M. (1999). Symmetrically normalized instrumental-variable estimation using panel data. Journal of Business & Economic Statistics, 17(1), 36-49.

Al-Yousif, Y. K. (2002). Financial development and economic growth: another look at the evidence from developing countries. Review of financial economics, 11(2), 131-150.

Anderson, T. W., & Hsiao, C. (1981). Estimation of dynamic models with error components. Journal of the American Statistical Association, 76(375), 598-606.

Anderson, T. W., & Hsiao, C. (1981). Estimation of dynamic models with error components. Journal of the American Statistical Association, 76(375), 598-606.

Ang, J. B., & Fredriksson, P. G. (2018). State history, legal adaptability and financial development. Journal of Banking & Finance, 89, 169-191.

Anwar, S., & Cooray, A. (2012). Financial development, political rights, civil liberties and economic growth: Evidence from South Asia. Economic Modelling, 29(3), 974-981.

Aparicio, S., Urbano, D., & Audretsch, D. (2016). Institutional factors, opportunity entrepreneurship and economic growth: Panel data evidence. Technological forecasting and social change, 102, 45-61.

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. The review of economic studies, 58(2), 277-297.

Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. Journal of econometrics, 68(1), 29-51.

Asghar, N., Qureshi, S., & Nadeem, M. (2015). Institutional Quality and Economic Growth: Panel ARDL Analysis for Selected Developing Economies of Asia. South Asian Studies, 30(2), 381.

Asteriou, D., & Spanos, K. (2019). The relationship between financial development and economic growth during the recent crisis: Evidence from the EU. Finance Research Letters, 28, 238-245.

Aziz, N., & Ahmad, A. H. (2018). Institutions and Economic Growth: Does Income Level Matter?

Barro, R. J. (1995). Inflation and economic growth (No. w5326). National bureau of economic research.

Beck, R., Georgiadis, G., & Straub, R. (2014). The finance and growth nexus revisited. Economics Letters, 124(3), 382-385.

Beck, T., & Levine, R. (2004). Stock markets, banks, and growth: Panel evidence. Journal of Banking & Finance, 28(3), 423-442.

Beck, T., Demirgüç-Kunt, A., & Levine, R. (2000). A new database on the structure and development of the financial sector. The World Bank Economic Review, 14(3), 597-605.

Beck, T., Levine, R., & Loayza, N. (2000). Finance and the Sources of Growth. Journal of financial economics, 58(1-2), 261-300.

Bencivenga, V. R., & Smith, B. D. (1991). Financial intermediation and endogenous growth. The review of economic studies, 58(2), 195-209.

Bertocco, G. (2008). Finance and development: Is Schumpeter's analysis still relevant?. Journal of Banking & Finance, 32(6), 1161-1175.

Biplob & Halder, (2018). Financial Sector Development and Economic Growth: Empirical Evidence from Bangladesh, Asian Economic and Financial Review, Asian Economic and Social Society, vol. 8(6), pages 799-814, June

Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. Journal of econometrics, 87(1), 115-143.

Chenery, H. B., Srinivasan, T. N., Schultz, T. P., Behrman, J. R., Strauss, J., Rodrik, D., & Rosenzweig, M. R. (Eds.). (1988). Handbook of development economics (Vol. 4). Elsevier.

Chinn, M. D., & Ito, H. (2006). What matters for financial development? Capital controls, institutions, and interactions. Journal of development economics, 81(1), 163-192.

Chong, A., & Calderon, C. (2000). Causality and feedback between institutional measures and economic growth. Economics & Politics, 12(1), 69-81.

Compton, R. A., & Giedeman, D. C. (2011). Panel evidence on finance, institutions and economic growth. Applied Economics, 43(25), 3523-3547.

De Gregorio, J., & Guidotti, P. E. (1995). Financial development and economic growth. World development, 23(3), 433-448.

Deidda, L. G. (2006). Interaction between economic and financial development. Journal of Monetary Economics, 53(2), 233-248.

Deidda, L., & Fattouh, B. (2002). Non-linearity between finance and growth. Economics Letters, 74(3), 339-345.

THE NEXUS BETWEEN FINANCIAL DEVELOPMENT, INSTITUTIONS AND ECONOMIC GROWTH: EVIDENCE FROM HIGH-, MIDDLE- AND LOW-INCOME COUNTRIES

PJAEE, 19 (1) (2022)

Demetriades, P. O., & Hussein, K. A. (1996). Does financial development cause economic growth? Time-series evidence from 16 countries. Journal of development Economics, 51(2), 387-411.

Demetriades, P., & Hook Law, S. (2006). Finance, institutions and economic development. International journal of finance & economics, 11(3), 245-260.

Ductor, L., & Grechyna, D. (2015). Financial development, real sector, and economic growth. International Review of Economics & Finance, 37, 393-405.

Effiong, E. (2015). Financial development, institutions and economic growth: Evidence from Sub-Saharan Africa.

Gazdar, K., & Cherif, M. (2015). Institutions and the finance–growth nexus: Empirical evidence from MENA countries. Borsa Istanbul Review, 15(3), 137-160.

Glaeser, E. L., La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2004). Do institutions cause growth? Journal of economic Growth, 9(3), 271-303.

Goldsmith, R. W. (1969). Financial structure and development. New Haven: Yale University Press.

Greenwood, J., & Jovanovic, B. (1990). Financial development, growth, and the distribution of income. Journal of political Economy, 98(5, Part 1), 1076-1107.

Grenwood, J.,&Jovanovich, B. (1990). Financial development, growth and the distribution of income. Journal of Political Economy, 98(5), 1076–1108

Grigorian, D. A., & Martinez, A. (1999). Industrial growth and the quality of institutions: what do (transition) economies have to gain from the rule of law? The World Bank.

Hall, R. E., & Jones, C. I. (1999). Why do some countries produce so much more output per worker than others? The quarterly journal of economics, 114(1), 83-116.

Hasan, I., Wachtel, P., & Zhou, M. (2009). Institutional development, financial deepening and economic growth: Evidence from China. Journal of Banking & Finance, 33(1), 157-170.

Henderson, D. J., Papageorgiou, C., &Parmeter, C. F. (2013). Who benefits from financial development? New methods, new evidence. European Economic Review, 63, 47-67.

Ibrahim, M., & Alagidede, P. (2017). Financial sector development, economic volatility and shocks in sub-Saharan Africa. Physica A: Statistical Mechanics and its Applications, 484(2017), 66-81.

Jalil, A., Wahid, A. N., & Shahbaz, M. (2010). Financial development and growth: a positive, monotonic relationship? Empirical evidences from South Africa.

Kendall, J. (2012). Local financial development and growth. Journal of Banking & Finance, 36(5), 1548-1562.

Khan, A. (2001). Financial development and economic growth. Macroeconomic dynamics, 5(3), 413.

King, R. G., & Levine, R. (1993a). Finance and growth: Schumpeter might be right. The quarterly journal of economics, 108(3), 717-737.

King, R. G., & Levine, R. (1993b). Finance, entrepreneurship and growth. Journal of Monetary economics, 32(3), 513-542.

Knack, S., & Keefer, P. (1995). Institutions and economic performance: cross-country tests using alternative institutional measures. Economics & Politics, 7(3), 207-227.

Law, S. H. (2006). Institutional development and economic performance: dynamic panel date evidence. Staff Paper, (1).

Law, S. H., & Azman-Saini, W. N. W. (2008). The quality of institutions and financial development.

Law, S. H., & Azman-Saini, W. N. W. (2012). Institutional quality, governance, and financial development. Economics of Governance, 13(3), 217-236.

Law, S. H., & Habibullah, M. S. (2006). Financial development, institutional quality and economic performance in East Asian economies. Review of Applied Economics, 2(1076-2016-87141), 201-216.

Law, S. H., & Habibullah, M. S. (2006). Financial development, institutional quality and economic performance in East Asian economies. Review of Applied Economics, 2(1076-2016-87141), 201-216.

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

Law, S. H., Azman-Saini, W. N. W., & Ibrahim, M. H. (2013). Institutional quality thresholds and the finance–growth nexus. Journal of Banking & Finance, 37(12), 5373-5381.

Levine, R. (1997). Financial development and economic growth: views and agenda. Journal of economic literature, 35(2), 688-726.

Levine, R. (1999). Financial development and economic growth: views and agenda. The World Bank.

Levine, R. (2003). More on finance and growth: more finance, more growth? Review-Federal Reserve Bank of Saint Louis, 85(4), 31-46.

Levine, R., & Zervos, S. (1998). Stock markets, banks, and economic growth. American economic review, 537-558.

Levine, R., Loayza, N.,&Beck, T. (2000). Financial intermediation and growth: Causality and causes. Journal of Monetary Economics, 46(1), 31–77.

Mauro, P. (1995). Corruption and growth. The quarterly journal of economics, 110(3), 681-712.

Mincer, J. (1981). Human capital and economic growth (No. w0803). National Bureau of Economic Research.

Mishkin, F. S. (2009). Globalization and financial development. Journal of development Economics, 89(2), 164-169.

Mobarak, A., & Karshenasan, A. (2012). The impact of institutional quality on relation between resource abundance and economic growth. Iranian Economic Review, 16(32), 95-110.

North, D. (1991). Institutions. The Journal of Economic Perspectives., 5(1): 97-112

Ogundari, K., & Awokuse, T. (2018). Human capital contribution to economic growth in Sub-Saharan Africa: does health status matter more than education?. Economic Analysis and Policy, 58, 131-140.

Rahaman, M. M. (2011). Access to financing and firm growth. Journal of Banking & Finance, 35(3), 709-723.

Raheem, I. D., Bello Ajide, K., & Adeniyi, O. (2016). The role of institutions in output growth volatility-financial development nexus: a worldwide study. Journal of Economic Studies, 43(6), 910-927.

Raheem, I. D., Bello Ajide, K., & Adeniyi, O. (2016). The role of institutions in output growth volatility-financial development nexus: a worldwide study. Journal of Economic Studies, 43(6), 910-927.

Rajan, R. G., & Zingales, L. (1998). Financial dependence and growth. American Economic Review, 88(3), 559–86

Ranjbar, O., & Rassekh, F. (2017). The impact of financial development on income convergence: An application of two exogenous growth models. International Review of Economics & Finance, 50, 65-74.

Rioja, F., & Valev, N. (2004a). Does one size fit all? reexamination of the finance and growth relationship. Journal of Development economics, 74(2), 429-447.

Rioja, F., & Valev, N. (2004b). Finance and the sources of growth at various stages of economic development. Economic Inquiry, 42(1), 127-140.

Roodman, D. (2009). How to do xtabond2: An introduction to difference and system GMM in Stata. The stata journal, 9(1), 86-136.

Samargandi, N., Fidrmuc, J., & Ghosh, S. (2015). Is the relationship between financial development and economic growth monotonic? Evidence from a sample of middle-income countries. World Development, 68, 66-81.

Schumpeter, J. A. (1911). A theory of economic development. Cambridge, MA: Harvard University Press.

Shen, C. H., Lee, C. C., Chen, S. W., &Xie, Z. (2011). Roles played by financial development in economic growth: application of the flexible regression model. Empirical Economics, 41(1), 103-125.

Siddiqui, D. A., & Ahmed, Q. M. (2013). The effect of institutions on economic growth: A global analysis based on GMM dynamic panel estimation. Structural Change and Economic Dynamics, 24, 18-33.

Tayssir, O., & Feryel, O. (2018). Does central banking promote financial development? Borsa Istanbul Review, 18(1), 52-75.

Yıldırım, A., &Gökalp, M. F. (2016). Institutions and economic performance: A review on the developing countries. Procedia Economics and Finance, 38, 347-359.