Research

FINANCIAL DEVELOPMENT : A CONTRIBUTING AGENT OF ECONOMIC GROWTH - STUDY OF SELECTED ASIAN COUNTRIES

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Abstract

It has been a self-proclaimed fact that financial development boosts economic growth in the short as well as in the long run. This particular study has taken financial development indicators from banking and secondary market perspectives into consideration. We find the banking sector more prominent and more influential in contrast to secondary markets as by revealed their coefficients. The study adopts financial deepening, foreign direct investment, banking credit to private sector, stock market size, stock market efficiency and stock market liquidity as independent variables along with economic growth as dependent variables. All the variables except banking credit to private sector have a significant and positive relationship with economic growth. Results show that financial development affects economic growth positively. Financial deepening, stock market liquidity and foreign direct investment have only one way causality while stock market size has two-way causality.

Keywords: Financial development, economic growth, Seemingly Unrelated Regression (SUR), GDP.

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Introduction

A fundamental and thought provoking question is often faced by thinkers, policy makers and researchers; why do countries economically grow at different levels in spite of similar financial infrastructures (Khan & Senhadji, 2003, Rajan & Zingales, 2001)? This question has been replied by different empirical studies across the globe with some solid reasons along with justified dimensions. Fluctuating economic growth mostly arises due to many factors like variability in economic stability, legal and political ineffectiveness, unpredictability in development of financial institutions, limited range of financial instruments, global trade activities, inefficient resource allocation etc. One stimulating and concrete factor, the role of financial development, has recently received much attention in perspective of financial institutions like stock markets, banks and resource allocation communities (Shaw, 1973). A Positive association between financial development and economic growth is fairly obvious (King & Levine, 1993). The financial and economic policies of every economy are generally formulated based on some fundamental expectations and goals by thinking and views of policy makers, masses and government. Usually, such policies stem from historical practices (Patrick & Park, 1994). According to Fry (1978), the financial role establishes many circles of saving, capital employed and productivity that boost the economic growth in the long run.

Stock markets and financial intermediaries including lending institutes play a pivotal role in development and growth of any capitalistic economy. Stock markets and financial sector are the backbones of any economy, which strengthen economic growth that ultimately uplift the living standard of the people (Levin, 2003)[1]. Financial development not only enhances the frequency of capital flow in economic setup but also facilitates the development of businesses and economic growth. No doubt, modern economic setup

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1-Levine theory work as primary sources for this research and his work in this context is great

is considered as a by-product of incremental financial development. A country may get the desired level of progression by adopting the better financial setup and by focusing upon the betterment and enrichment of financial sector. The gist of the progress of developed countries lies in their wider, broader and developed financial sector; they always try to lay stress for the enrichment by adopting different advance financial instruments and effective policies to achieve long run results (Levin 1997).

Financial development and economic growth have a unique and intimate relationship in any capitalistic mechanism; the relationship between these variables gives direction to researchers or policy makers to infer some valuable findings (Shen & Lee, 2006). De Long et. al. (1989) traces the impact of financial development on growth of any economy and finds that it affects the countries on macro as well as micro level. Leaving the importance of financial sector unattended lessens the pace of progress and it is considered as one of the major problems of developing countries (Ho & Odhaimbo, 2012). Many researchers laid focus on this topic and conducted extensive researches to explore the topic from different angles. Researchers could not give attention towards Asian developing economies especially South Asian economies (Agrawal et. al. 2007, Chakraborty, 2008, Ibrahim, 2007, Morley, 2006, and Ho & Odhiambo, 2012). This study will focus upon that particular neglected part of research and will also compare developing and developed countries in the context of per capita income. It is difficult to find the exact level of financial development needed in any country yet policy makers have been in pursuit to establish a sound financial setup especially in the perspective of stock markets.

Hong Kong, Singapore and Japan are ranked in top ten financially developed countries across the world whereas Pakistan, India and Bangladesh have got lower score in the context of financial development index (World Economic Forum, 2012)[2]. Although economic growth of developing countries is reflected more than developed economies but their financial setup and infrastructure is fragile and less regulated along with limited breath. Pakistan, Bangladesh and

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2-Financial Development report published by World Bank, it assign ranking of top 62 countries on bases of well-defined principles. *www.weforum.org/ reports/financial-development-report 2012*

Turkey are more focused on public debt compared to Hong Kong, Singapore and Japan.

There are some country-specific empirical investigations such as Thangavelu & Jiunn, (2004), Ibrahim (2007), Agarwal et al., (2007), Chakraborty (2008) and Deb & Mukherjee (2008); they focus upon the relationship of financial development with economic growth. All authors of articles have shown positive relationship of financial development on economic growth of a specific country. Zivengwa et al. (2011) have conducted the most recent research on this topic and used the time series data from 1980 to 2008 and found the unidirectional causal link between stock market development and economic growth.

Justification

The content of literature review shows that panel data analysis of countries was last time performed on the data of some African countries up to 2004. Although a latest research on this topic has been conducted up to the data of 2008 but that was countries specific case. Especially, Asian study on this topic is rare and the author hardly finds a case of Asian developing and developed countries. This research gap has provided the motive to the researcher to conduct the study.

Objectives of The Study
- To investigate the impact of financial development on economic growth in sample Asian countries.

- Provide the direction of relationship between economic growth and financial development.

Review of Literature

Financial development boost economic growth but their quantum and direction may be subject to per capita income of countries and their geographical positioning. Hassan et al. (2011) explored the

relationship of financial development and economic growth in low-income and middle –income and high-income countries. They found a positive and significant relationship and it depends upon the proxy taken for economic growth. They further found two ways causality in middle-income countries but one way causality found in poor economies that flow from financial development to economic growth. They also examined empirically that real sector, as trade of the government spending, plays major role in economic growth. The researcher also added that well-established and well-functioned financial system is the key to get steady and to have positive economic growth results.

Financial Intermediaries, their size and interest spread is also crucial for economic development. The efficiency of financial intermediaries (normally banking) increases financial development that enhances economic growth in the countries. Greenwood et al, (2013) test the notion of intermediary's size, efficiency and spread rate. Researchers empirically test the influence of intermediaries upon economic growth with the help of data of 45 countries. They conclude that the best practices and technological improvement of financial intermediaries enhance business activities result in higher economic growth

Akinlo and Egbetunde, (2010) tried to explore the long run relationship between financial development and economic growth. Irrespective of time frame and proxies of financial development or choice of economic setup, researchers concluded that financial development has positive and long run relationship,. This long run relationship was also seconded by Omran and Bolbol (2003) Al-Tamimi et al. (2002).

Saci et al. (2009) studied the topic with one step Generalized Method of Moment of dynamic panel. The data of thirty developing countries was collected from 1988 to 2001. The study incorporated variables of financial development in two broad categories; the first

category was consisted of stock market development proxies i.e. the monetary value of share traded (SV) over GDP and SV over average market capitalization. The second category was consisted of micro indicators; liquid liabilities (M3/GDP) and financial depending. The study used real GDP per capita as dependent variable along with inflation, initial real per capital income and market openness as conditioning variables. The researchers found that stock market related variables had positive and significant relationship whereas banking related variables (credit supply and liquidity) had negative effect on economic growth and outcome supported by Beck & Levine, (2002).

Chakraborty (2008) conducted a research to find out whether financial development 'caused' economic growth in India? The study provided empirical evidence in the context of India on the quarterly data from the period of 1996 to 2005. Financial development was categorized into four variables viz. total market capitalization to nominal GDP, turnover to nominal GDP, stock price volatility and total bank credit to nominal GDP. The study analyzed data by using the concept of Granger Causality after testing for co-integration using Engle-Granger and Johansen technique. The empirical results suggest there is existence of stable long-run relationship between stock market capitalizations, bank credit and growth rate of real GDP. Another finding revealed that causality run from growth rate of real GDP to stock market capitalization.

Hassan et al. (2007) investigated the role of financial development on economic growth in the context of 208 countries. The countries were divided into seven regions i.e. East Asia & Pacific (24), East Europe & Central Asia (27), High-Income OECD (24), Latin America & Caribbean (32), Middle East & North Africa (14), South Asia (8), Sub-Saharan Africa (48). Impulse Response Function, Granger Causality test and VAR model along with unbalanced panel fixed effect model were primary empirical techniques used to infer results. The findings indicates robust relationships between financial development and economic growth in OECD countries having higher

level of income, but was failed to trace any strong relationship in South Asian and Sub-Saharan African constituencies.

Beck and Levine (2008) used panel analysis of 40 countries over the period of 1976-1998 to dig deep the relationship between stock market, banks and economic growth of the countries. Variables of the study were stock market turnover value, GDP and bank credit whereas control variables were inflation and trade openness. Two-Step Regression technique revealed that stock turn over value and bank credit both had positive and highly significant relationship with economic growth.

Theoretical Framework

Economic growth is the hallmark and the most debating macro issue in the financial press. Economists, Financial analyst, policymakers, thinkers, leaders and researchers explore this topic from different dimensions for the betterment of mankind. History has witnessed many well-defined economic theories about growth rate. Keynesian growth theory mainly focuses on the role of saving or investment to boost aggregate demand that uplifts the economic growth but now this theory has been replaced by neoclassical concept of growth. Endogenous theory, the brain child of neoclassical, mainly gives attention to technical progress as a determinant of growth that accumulates capital in the long run. It has been admitted that economic policy about interest rate, inflation and other factors is not negligible. However, a basic element of growth theory is to sustain a positive and steady growth rate of the crux of technological knowledge and advancement in the form of better products, new concept of markets and efficient process of goods and services. Robert Slow (1865) first advocator of "the theory says without " new technological progress effects of diminishing return may bring the economic growth very low even in negative digits. Growth economists despite of all the debate and argument have been facing a big challenge; how to identify the basic, fundamental and solid driving forces which could explain the

variation of economic performance across the countries. Today, performance of the countries is judged by the improved living standard of people and different financial facilities have been provided to laymen and institutions. As the facilities improve in any economic setup, it leads the country toward progress. This concept pioneered and empirically tested by Ross Levinein the setting out my model with some changes. Apparently, topic is same but many other types of variables were included to check the hypothesis i.e. financial depth, liquidity, financial market efficiency, credit availability, financial deepening and economic growth as dependent variable.

Figure 1:

Theoretical Framework

Joint Null hypothesis: Ho=Beta= M2T+ MCG + STO + LSVG + FDIG+CCBSG=0

$$GDPG_{it} = \alpha_i + \gamma(M2T)'_{it} + \gamma(MCG)'_{it} + \gamma(DCBSG)'_{it} + \gamma(STO)'_{it} + \gamma(FDIG)'_{it} + \gamma L(SVG)'_{it} + \varepsilon_{it}$$

M2T= M2/Total reserve

MCG= Market capitalization of listed companies (% of GDP)

STO= Stocks traded, turnover ratio (%)

FDIG= Foreign direct investment, net inflows (% of GDP)

SVG= Stocks traded, total value (% of GDP)

DCBSG= Domestic credit to private sector (% of GDP)

ε_{it} = Error Term

Null Hypothesis:H0: Beta=0= M2T, FDIG, DCBSG, MCG, STO, SVG

Methodology

The model has been aimed to investigate the effect of financial development on economic growth in context of fourteen Asian countries. Major independent variable of the study is Financial deepening (M2T). Financial development has been divided into two categories one relates to secondary market variables and the other is banking related or economic indicators. Financial deepening (M2T) is taken main variable along with other secondary market size (MCG), secondary market efficiency (STO), secondary market liquidity (SVG), lending to institutes growth (MCBSG) and foreign direct investment growth (FDIG). Dependent variable of the model is GDP annual growth rate. These variables are taken as or percentage to avoid the variation and trend in data.

Sample and Data

The sample consists of 14 countries from 1991-2012 on annual bases having a better infrastructure in secondary markets and macro indicators knowledge and policies about growth rates. The model consists of several countries having robust financial infrastructure and several having facing the difficulties in making their financial structure better. This model uses the data from the sample fourteen countries i.e. China, Korea, Japan, Pakistan, India, Bangladesh, Philippine, Oman, Singapore, Malaysia, Thailand, Turkey, Indonesia and Sri Lanka.

Estimation

Table 1:

Empirical Results

Variables	Coefficient	Std. Error	t-Statistic
M2T	0.036015	0.008536	4.21899
MCG	0.027428	0.003037	9.03006
DCBSG	-0.04042	0.003846	-10.51
STO	0.002985	0.00107	2.78836
FDIG	0.204678	0.037566	5.44843
L(SVG)	0.169207	0.062988	2.68634
C	4.86549	0.282597	17.2171
R- Sq 0.75	F. prob. 0.0000	D.W value	1.96

Hausmantest favors the use the fixed effect of cross section in SUR estimation. Model is significant and all independent variables jointly affect the dependent variable. In other words, all the proxies of financial development have relation to economic growth.

Explanatory power of the model is 75% which is enough to claim that independent variables (proxies of financial development) explain 75% variation in growth. In other words, 75% variation is caused by the independent variables in the model and only 25% is owing to other factors missing from the model.Standard Errors of the regression are lower, which means that our estimation has better validity and estimated standard error of individual independent variable is less than coefficient. It means the results are better and good fitted in perspective of regression line. P value of t-test for each independent variable is less than 1%, which gives us the picture of highly significant variables in the equation. Hypothesis testing typically is performed on 5% chances of Type I error but here only 1% shows the robustness of parameters' estimation.

Main variable of the research M2T (financial deepening) has positive and highly significant relationship with growth.

All secondary market related variables i.e. MCG, STO and Log SVG are highly significant and have positive relationship with economic growth. If we look from another angle, combined beta of secondary market variables is 16% whereas combined beta of banking related variables or micro indicators is 19%.

Banking based variables i.e. M2T and FDIG are also highly significant and have positive relationship with economic growth. One exception is being witnessed in DCBSG, which has negative significant relationship with economic growth of the countries. This relationship has also been found in literature many times and it gives a clue of inefficient utilization of credit and limited control on lending policies. In developing countries, banking credit to private sector is negatively

related with growth (Hassan and Yu, 2007 Saci et al., 2009). Although one banking related variable has negative relationship but overall results of banking sector variable are higher than secondary market related variable[3]. Five out of six variables e.g. M2T, MCG, STO, FDIG and log SVG have significant positive relationship with economic growth on less than 1% level of significance. Foreign direct investment affects at highest level and DCBSG affects least in our analysis period and their coefficients are 0.2 and -0.04 respectively.

Table 2:

Redundant and Omitted Variable Tests

Test name	Test type	P. Values	Test variable	Finding
Redundant Variables Test	F-statistic	0.0000	MCG, M2T ,FDIG	No superfluous variable exist in the model.
	Likelihood	0.0000		
Omitted Variables Test	F-statistic	0.3352	(M2T)^2 ,LOG(SVG)^2, NDC	No important variable is missing.
	Likelihood	0.3210		

To perform the omitted variable test, I have used the net domestic credit, nonlinear variable of financial deepening $(M2GR)^2$ and log $(SVG)^2$. The P values of F-test and Likelihood ratio fail to reject the Null hypothesis. Failure in rejection of null hypothesis leads to conclude that model is linear and any important and relevant variable is not omitted.

Redundant variable test of model specification has been utilized in the research to validity of model and rejection of the null hypothesis means that the variables of sub-set are not superfluous and have significant effect in our model.

Granger Causality Tests

Pair-wise Granger causality tests have been executed to check the nature and direction of association among variables. It provides

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3-This result provide further research ground

information of cause and direction of relationship (Granger and Lin, 1995).

Table 3:

Results of Pairwise Granger Causality Test of Model 1

Null Hypothesis	No of Obs.	F statistic value	Relationship
M2T does not Cause GDPG		5.2806	One way
GDPG does not Cause M2T	280	0.1320	
MCG does not Cause GDPG		34.219	Two way
GDPG does not Cause MCG	280	6.9540	
STO does not Cause GDPG		0.5442	No relationship
GDPG does not Cause STO	280	1.7646	
SVG does not Cause GDPG		3.0090	One way
GDPG does not Cause SVG	252	1.3819	
FDIG does not Cause GDPG		5.5907	One way
GDPG does not Cause FDIG	266	0.2397	
DCBSG does not Cause GDPG		2.1028	One way
GDPG does not Cause DCBSG	252	10.170	

In generalized sense, financial deepening (M2T), Stock market liquidity (SVG), DCBSG and FDI are causing the growth. Direction of dependent variable (GDP growth) and independent variable Market capitalization (MCG) is having only two ways causality. It means growth and stock market size cause each other. Stock market liquidity (STO) have no causal relationship.

Table 4:

Residual Tests

Tests	Value	Pro.	Remedy Incorporated	Decision basis	Problem existence
contemporaneous correlation	18.35	0.00	SUR cross section	P Value	Yes
Hetroscadasticity	198.81	0.00	SUR cross section	P Value	Yes
Residual normality	8.81	0.03	-	Skweness and kurtosis	No
Autocorrelation			-	DW value	No

Table 4 reveal residual tests which are crucial to present unbiased and efficient result. Rejection of Null hypothesis of contemporaneous correlation and Hetroscadasticity test provides

justification of use SUR technique which uses Feasible GLS mechanism for estimation.

Table 5:
Descriptive Analysis

Mean	5.127	2.613	85.476	57.161	6.724	2.929	70.088
Median	5.390	1.217	56.605	36.824	3.985	3.316	45.807
Maximum	14.780	27.842	497.402	328.876	90.944	5.436	227.752
Minimum	-13.13	-2.757	1.017	0.534	0.970	-4.637	8.821
Std. Dev.	3.744	4.189	81.979	56.662	10.645	1.582	53.594

The descriptive analysis provides us the major output and unique characteristic of raw data in respect of variables under study. Table VI shows us the highlights of different dimensions of the data i.e. range dispersion and measure of central tendency. The table also helps to ascertain the mean, median, stand deviation and number of observations. The highest and the lowest growth rates give us the picture of growth of economies during the analysis period with 14.78% and -13.13 on averages of 5.39 respectively. The highest and the lowest figures for foreign direct investment growth are 27.84% and -2.75% respectively with a mean value of 2.6%. Stock market efficiency faced higher level volatility compare to economic growth and investment whereas lower level volatility is witnessed in the log of market liquidity that was only 1.58% deviated from mean value. Financial deepening also faced a moderate level of volatility that was only 10% deviated from the mean value at highest and lowest levels of liquidity with 90 and 0 values respectively. Maximum value for banking credit to private sector is 227.7 and 8.8 billion dollars at the average value of 70 billion dollars.

Figure 2 reveals an average growth rate of each country from 1991 to 2012. The highest economic growth on average is in china that touches the double digit. Although major financial development occurs in chine after 1990 yet its pace in growth is enormous. If we rank any economy in the world on the basis of economic growth from last 22 years, China would be on the top position. On average, India is second

Figure 2:

Twenty Two Years Mean Average of Sample Countries
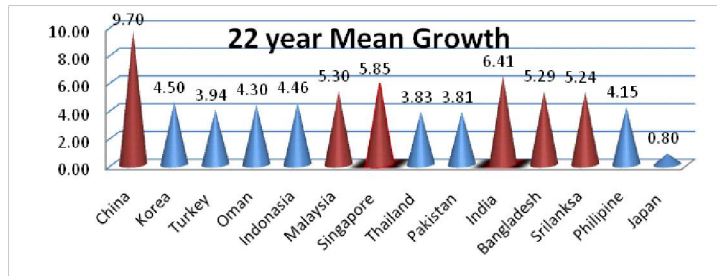
economy in our sample as its average growth rate is 6.41% per year. Only six out of fourteen countries are having a percentage above five. These countries are China, Malaysia, Singapore, Sri Lanka, Bangladesh and India. on average, Japan has lowest growth in the sample, it may be owing to saturation point of growth in the economy. Korea, Turkey, Indonesia, Oman, Pakistan and Thailand are growing at a moderate level of growth and their 22 year average growth rate fluctuates from 3% to 5%.

Figure 3:

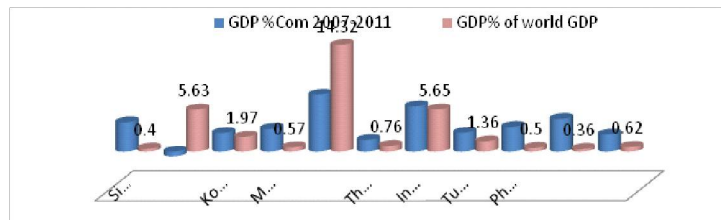*GDP Share of Sample Countries against Overall World's GDP*

Figure 3 shows two types of information; economy ranking in context of financial development and share of economy GDP in overall world GDP. Blue bars represent economy ranking in the sample

by report*[4]. From left to right, each economy has been given higher ranking to lower ranking position wise. Singapore has got first position in context of financial development whereas Pakistan has got the last position. Brown bars show how much percentage a single country is having in overall world's GDP. China, Japan and India has major portion of world's GDP. These three countries are having approximately 26% of GDP of the world and may be considered as influential countries. These countries have major focus on the export of commodities and their decisions may change the economic picture of the world. Some countries have lessor level of contribution in overall GDP of the world and tagged as less influential countries i.e. Pakistan, Bangladesh, Philippine, Thailand, Malaysia, and Singapore. The aggregate contribution of these countries is less than Japan or India.

Conclusion

Economic growth is the most desirous issue of all the countries. The literature review highlighted the banking sector or secondary market perspective but a combination of both is rare. This study has taken both banking and secondary market perspectives into consideration by using foreign direct investment, financial deepening, banking's credit to private sector, stock market size, stock market efficiency and stock market liquidity as independent variables along with economic growth as dependent variable. As economic growth is a burning issue nowadays and it has become an ultimate goal of any country irrespective of cultural, religion, infrastructural and social differences. This study is an attempt to examine the effect of financial development on economic growth from both perspectives on annual data of 14 countries from 1991 to 2012. This study provides new aspect how combination of banking and secondary market is helpful to boost economic growth and which should be focal point of policy makers.

4-These statistics are taken form financial development report 2012

Model specification and tests of assumptions have been incorporated to present efficient results of the research. Results show that financial development affects economic growth positively. All the variables of the study are highly significant. Five out of six variables affect economic growth positively except banking credit to private sector. All the secondary market variables and micro indicators related to banking sector have significant positive relationship with economic growth except banking credit to private sector, which affects negatively.

Major variable of the study is financial deepening, which has positive significant relation with economic growth. Stock market efficiency affects minimum, however, foreign direct investment affects maximum to economic growth. Banking sector or micro indicators have higher level of influence on economic growth than secondary market variables. Financial deepening, stock market liquidity and foreign direct investment have only one way causality. These variables cause economic growth in contrast to Stock market size that has two ways causal relationship. Economic growth causes credit availability to private sector during the period whereas stock market efficiency has no causality.

It is suggested to improve the economic growth countries should Improvement of Financial Deepening, Improvement of Secondary Markets and Infrastructure and focus banking sector related or micro indicators efficiently.

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