Financial Development and Economic Growth: Empirical Analysis of Asian Pacific Countries

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ABSTRACT

This study investigates the relationship between financial activities and the economic performance of 5 selected Asian Pacific countries consisting of China, India, Korea, Australia and New Zealand. Using pooled OLS annual data for 20-year period (1991-2012), the study finds that there is a bi-directional long-run causality between financial depth and economic performance proxy by gross domestic product (GDP). The study also reveals that ancillary variables such as inflation and investment share, significantly and positively cause economic growth. However, when the financial depth becomes dependent variable, the only investment share provides the clear relationship. The important implication for policy makers is that they should either improve countries' financial markets or economic activities or both for future development and sustainability.
KEYWORDS: Economic Growth, Financial Depth, Investment Share, Inflation.

INTRODUCTION

The issue regarding cause-effect between financial development and economic growth has attracted discussions among economists for the past three decades or so. It is the popular issue and continues to be debated among researchers and academicians around the globe. The reason behind this ambiguity is due to the uncleared answer to whether the financial market influences the economic growth or vice versa. Even though there are many empirical studies on the causal relationship between financial development and economic growth, the results from both the theoretical and empirical studies still reveal unclear explanation and they remain inconclusive. In fact, there are studies who opined that financial development does influence the economic growth arguing that in a well-functioning financial markets, there are the key factor in producing high economic growth [15, 3]. Also, activities in financial markets would directly affect the personal wealth, the behavior of businesses and consumers, and the cyclical performance of the economy. Indeed, in [9] argued that financial development plays an important role by helping to identify better opportunities for investment, reduce the production cost, enhance the savings among citizens, encourage technological innovation and increase the number of investors for taking the risk in their investment. However, a few studies reveal the opposite direction [14, 2]. Moreover, in [16] report that financial development is not the main catalyst for growth, instead the financial development is influenced by economic growth. In fact, in [2] argue that economic growth influences the financial development. When there is a rise of the output, the demand for financial intermediaries (services) also rises and it will lead to positive impact on financial development.

Although numerous studies have been conducted on the cause-effect relationship between financial development and economic growth, the findings are still inconclusive. Many studies find evidence of bi-directional causality in most countries [10,11], while the others reveal uni-directional either financial development leads to economic growth or otherwise. The contradictory results may be due to the potential biases induced by simultaneity and omitted variables as mentioned by [7]. The present study, after considering the shortcomings of the previous studies will make an effort to utilize the data in an efficient manner. We use the panel-based analysis to properly account for the problem of simultaneity of regressors in order to draw correct inferences.

The remaining sections of the paper are as follows: Literature review in section 2. Meanwhile, section 3 discusses data and methods. The empirical results are reported in section 4. Finally, section 5 is the conclusion with a summary and policy implications.

LITERATURE REVIEW

Many studies view this issue from different perspectives and produced different results. Some of them prove that the financial development follows the economic growth. For instance, in [13] examine the strength of the correlation between stock market development and the economic growth for 42 emerging markets found that

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the effect of the stock market has the major contribution towards economic growth. Meanwhile, in [4] find a positive relationship between financial development and economic growth in developing countries. However, the results of multivariate analysis are mixed. They show two-way causality correlation between finance financial development and economic growth in most regions. While for the 2 poorest regions, the result showsthat there is one-way causality from economic growth to finance financial development. In [14] also suggests bi-directional causality between economic growth and banking system development, and a uni-directional causality which run from lending interest rate ofgross domestic product (GDP) growth. Meanwhile, for the banking system and stock market development, there is a bi-directional causality and a uni-directional causality which run from lending and interest rate to market capitalization ratio.

In the meantime, in [11] conduct a study to investigate the causal links between financial development and economic growth in China. They also find a two-way causal relationship between economic growth and financial development because they support each other under China's open-door policy.

Besides, in [12] investigate the relationship between inflation and GDP growth for 4 South Asian Countries and reveal that moderate inflation is good in helping economic growth. However, the rapid growth will give a negative impact on the inflation rate and consequently affects the economic growth too.

Meanwhile, in [18] examines the role of the financial system in the foreign direct investment and growth relation and how the financial market conditions affect the foreign direct investment (FDI) benefits in China. It demonstrates that there is a positive correlation between the financial system and FDI, which directly gives a positive impact towards the growth.

In addition, in [6] find the correlation between financial market developments and economic growth in 7 selected sub-Saharan African countries. The study discovers that there is a one-way causality running from economic growth to bank development indicators and a two-way causality between the stock market and economic growth. However, in [5] demonstrate both long-run and short-run that the financial development index shows a negative impact on economic growth. Meanwhile, in [8] reveal the negative significant relationship between inflation and financial depth (size of the public sector) for 168 countries consisting of both industrial and developing countries as their sample. Additionally, in [17] also find the negative relationship between inflation and economic growth in the economy of Mexico.

METHODOLOGY

The annually sample data from 1992 until 2011 in5 Asian Pacific countries including China, India, South Korea, Australia and New Zealand are used. They are retrieved from World Data Bank-World Development Indicator and International Financial Statistics published by the International Monetary Fund (IMF). The selection of these countries as the sample because their economy are large and also the fact that they contribute significantly to the economic growth in the Asian Pacific region. Moreover, they also provide continuous data over the sample period for the analysis.

Table 1 shows the summary statistics of sample means, minimums, maximums, variance and coefficient of variation (cv) that are related to the gross domestic product (gdp) with the financial depth (fd), investment share (is) and inflation (inf).

Table 1: Descriptive statistics

stats	gdp	fd	is	inf
max	14.2	87.46729	.4596025	24.23709
min	−6.854459	.13	.1708255	−1.407892
mean	5.677607	13.63047	.284281	4.23185
cv	.6367204	1.806932	.2341573	.9145517
variance	13.06857	606.6039	.0044311	14.9788

Table 2: Correlation of coefficient

	gdp	fd	is	inf
gdp	1.0000			
fd	−0.1205	1.0000		
is	0.6510	0.1955	1.0000	
inf	0.3174	−0.0460	0.1532	1.0000

Table 2 reports the correlation of coefficient of the variables. From the table displayed, it was revealed that the relationship between (is) and (gdp) is the strongest one since they have highest coefficient value of about 65%. The lowest correlation is between (inf) and (gdp) with the value of -12.05%.

To determine the relationship between variables, the study applied to the pooled-data technique using the following equation:

$$Y_{it} = \beta_{0i} + \beta_{1i}F_{it} + \beta_{2i}S_{it} + \beta_{3i}P_{it} + u_{it} \tag{1}$$

where Y is the real output in country i and year t, F is a measure of financial depth, S is the output share of investment (is), P is the inflation (inf), and u is an error term. We also determined the direction of causality using the following equation:

$$F_{it} = \beta_{0i} + \beta_{1i}Y_{it} + \beta_{2i}S_{it} + \beta_{3i}P_{it} + u_{it} \tag{2}$$

In Equation 2, we replaced the real output(Y) with financial depth(F) as the dependent variable. This time, real output, Y, becomes independent variable together with inflation and investment. The investment share (is) and inflation (inf) were considered ancillary variables in the equations. Both models were employed to determine the direction of the relationship and causality. Both equations would examine the cause-effect relation in a long-run equilibrium.

Y is the quantity of real output, the proxy for economic growth and expressed as an index; financial depth (F) is total demand deposits to nominal GDP; share of investment(S) is the share of gross-fixed capital formation to nominal GDP; and inflation rate (P) is the inflation rate, the proxy for consumer price index.

FINDINGS AND DISCUSSION

Table 3: Gross domestic product (gdp) as dependent variable

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reg gdp fd is inf
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Source	SS	df	MS		Number of obs =	99
					F(3, 95) =	35.44
Model	671.975414	3	223.991805		Prob > F =	0.0000
Residual	600.431023	95	6.32032656		R-squared =	0.5281
					Adj R-squared =	0.5132
Total	1272.40644	98	12.9837392		Root MSE =	2.514

gdp	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
fd	-.0353354	.0105465	-3.35	0.001	-.0562729	-.014398
is	36.31149	3.96707	9.15	0.000	28.43586	44.18713
inf	.1890123	.06627	2.85	0.005	.0574497	.3205748
_cons	-4.951701	1.130547	-4.38	0.000	-7.196121	-2.707281

Table 4: Financial depth (fd) as dependent variable

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reg fd gdp is inf
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Source	SS	df	MS		Number of obs =	99
					F(3, 95) =	5.38
Model	8629.12309	3	2876.37436		Prob > F =	0.0018
Residual	50818.059	95	534.926937		R-squared =	0.1452
					Adj R-squared =	0.1182
Total	59447.1821	98	606.603899		Root MSE =	23.128

fd	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
gdp	-2.990649	.8926128	-3.35	0.001	-4.76271	-1.218589
is	177.6319	46.63168	3.81	0.000	85.05627	270.2074
inf	.1246675	.6351072	0.20	0.845	-1.13618	1.385515
_cons	-20.448	11.20801	-1.82	0.071	-42.69872	1.802712

Table 3 reports the results of the pooled-data method when the (gdp) is considered as the dependent variable. The results show that the (fd) of Asian Pacific Countries negatively and significantly affects the (gdp). According to [18], the reason why the negative impact exists is because the bank's credit gives loans to low-performance crony firms and also to unproductive state-owned enterprises (SOEs). Moreover, when the bank easily gives loan to unproductive or risky borrowers, the tendency of these borrowers not paying back the debt is

high and therefore increases credit risks. Eventually, the risk would affect the bank performance because they cannot generate more return. As a result, this will directly influence the economic growth of a country.

Nevertheless, the investment in share (is) and inflation (inf) show a significant positive effect on (gdp). The result is in line with [6, 13] who find positive effects of an investment share (is) on economic growth (gdp).The results suggest that the more number of investors investing in a country, the more the enhancement of stock market and the increase of the rate of investment which will lead to the increase of the economic activities and economic growth of a country as well.

The results also show positive effects of (inf) on economic (gdp). It reveals that the moderate (inf) is good in helping economic growth.However, faster growth will somehow give negative impact to the inflation rate (i.e. high-inflation rate) and consequently affect the economic growth in a long run too. This is what we refer to as cyclical nature. The results support the findings of [12, 17].

Financial Depth (fd) as Dependent Variable

Table 4 reports the result of the effect of gross domestic product (gdp) on the financial depth (fd). Based on the finding, it shows a negative significant influence of (gdp) on (fd) in Asian Pacific countries at 5% level. According to [1], a higher degree of state ownership is negatively linked with bank development and economic growth. In the meantime, the result of an investment share (is) shows a positive and significant influence on (fd). It indicates that the more investment in share, the more increase in financial depth is including the demand deposit in financial institutions in a country.

As a whole, the study presents bi-directional causality between (gdp) and (fd). Specifically, the results reveal that the (gdp) negatively and significantly caused (fd) and vice versa with the same magnitude. Thus, the study provides clear evidence of long-run causal relationship running from both directions.

CONCLUSION AND RECOMMENDATIONS

The present study examines the causal relationship between financial development and economic growth for 5 selected Asian Pacific countries consisting of China, India, Korea, Australia and New Zealand using annual data from the year 1991 to 2012. Applying pooled-data method, the study finds that the independent variables including ancillary variables significantly cause dependent variable which is economic growth in a long-run. However, when the financial depth becomes dependent variable, the only investment share provides the clear relationship.

The present study can be useful tool for the policy maker to implement an appropriate economic and financial policy, to make a wise and better decision in helping economic growth by providing more incentives for financial markets to develop or putting more effort in spurring economic activities. Either way will be good in achieving economic prosperity of the countries. However, they should be extra careful since the relationship is in the long run in nature.

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