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Financial Inclusion and Economic Growth in Emerging and Developing Asia

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Abstract: This study aims to empirically investigate the role of financial inclusion in economic growth in 23 emerging and developing countries in Asia using panel data analysis ranges from 2005 to 2019. GMM panel data estimation is used to estimate the long run relationship between the variables. Four variables namely automated teller machines per 100,000 adults, borrowers from commercial banks per 1,000 adults, depositors with commercial banks per 1,000 adults, and life insurance premium volume to GDP are employed to represent financial inclusion. The result shows that all financial inclusion variables significantly have a positive impact on economic growth in emerging and developing countries in Asia. Our study also reveals that there is a unidirectional causality running from financial inclusion to economic growth. The main conclusion drawn is that a higher level of financial inclusion is a necessary condition in long run growth.

Keywords: Financial inclusion; Economic growth; Emerging; Developing; Asia

JEL classification: E44, E52, F43

Introduction

Financial inclusion has emerged as a critical development agenda among government, policymakers and the private sector. Financial inclusion has been identified as an enabler for 7 of the 17 Sustainable Development Goals (SDGs). Financial inclusion means that individuals and businesses have access to useful and affordable financial products and services that meet their needs – transactions, payments, savings, credit and insurancedelivered in a responsible and sustainable way (World Bank, 2019a).

World Bank (2019b) reveals the 2017 Global Findexdatabase. This database indicated that 1.2 billion adults have obtained an account since 2011, including 515 million since 2014.Globally, the share of adults with an account rose from 51 percent to 62 percent in 2014 and then to 69 percent in 2017 (Figure 1). In developing economies, the share of adults who have an account with a financial institution or through a mobile money service rose from 54 percent to 63 percent. However, 7.1 billion adults remain unbanked

without an account at a financial institution or through a mobile money service. All these unbanked adults live in the developing countries and half of unbanked adults come from the poorest 40 percent of households. Nearly half live in just seven developing economies: Bangladesh, China, India, Indonesia, Mexico, Nigeria, and Pakistan.

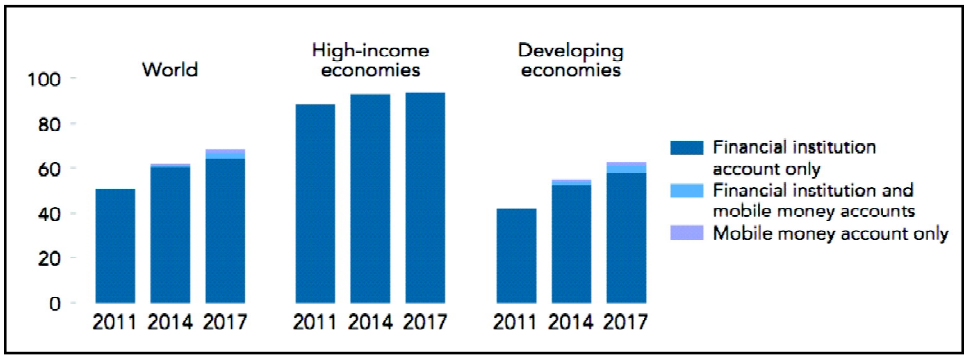

Figure 1: Share of adults with an account (%)

Source: World Bank (2018b)

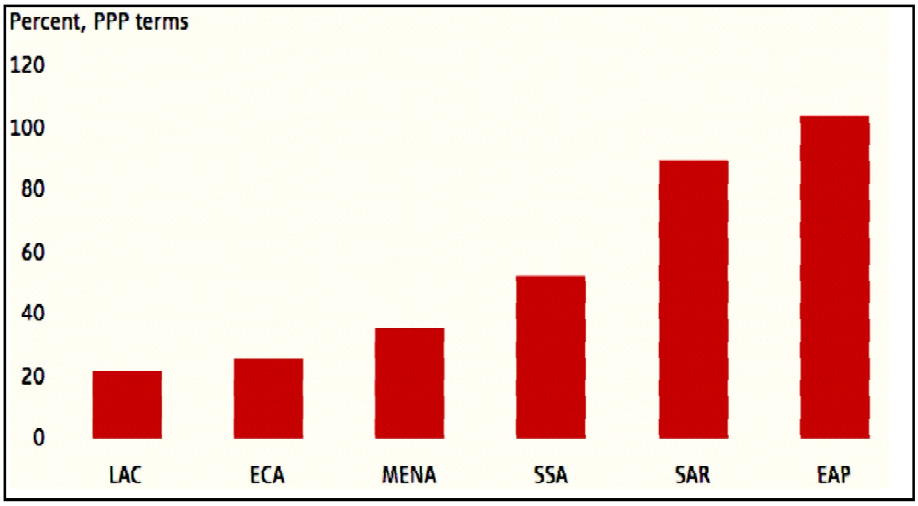

Figure 2: Growth of regional GDP, 2017 compared to 2007

Source: World Bank (2018c)

Figure 2 shows that East Asia and Pacific (EAP) countries are the best performers in economic growth in recent years, especially when compared with Latin America and the Caribbean (LAC), Eastern Europe and Central Asia (ECA), Middle East and North Africa (MENA), Sub-Saharan Africa

(SSA), and South Asia (SAR). Economic growth in East Asia and Pacific has contributed to the region's success in reducing poverty but the faster growth has also contributed to an increase in inequality.

To guarantee this growth is equality and inclusive, Asian governments and other policymakers need to set policies that can encourage economic growth and reduce inequality.Because of financial inclusion is an important part of their strategies to achieve inclusive growth, this study aims to study the relationship between financial inclusion and economic growth in emerging and developing countries in Asia. The findings will support government andpolicy maker to create the right policy in financial sector to encourage economic growth in emerging and developing countries in Asia.

Literature Review

The existing literature on the relationship between financial inclusion and economic growth is wide ranging both in terms of the different proxy of financial inclusion variables employed and in terms of the different countries covered.

Most empirical studies suggested that the positive relationship between financial inclusion and economic growth in developing countries like Nigeria, India, West African Economic and Monetary Union, and Organization of Islamic Cooperation (OIC) countries. There are also several literature studies on the impact of financial inclusion on economic growth including those by Abiola *et al.* (2015) investigated the impact of financial inclusion on economic growth in Nigeria. The result showed that Financial inclusion is a significant determinant of the total factor of production, as well as capital per worker, which invariably determines the final level of output in Nigeria economy. Sharma (2016) assessed the nexus between the vast dimensions of financial inclusion and economic development of the emerging Indian economy. The results found that there is a positive relationship between economic growth and various dimensions of financial inclusion, specifically banking penetration, availability of banking services and usage of banking services in terms of deposits. Granger causality analysis reveals a bi-directional causality between geographic outreach and economic development and a unidirectional causality between the number of deposits/loan accounts and gross domestic product. Gourène and Mendy (2017) examined the causal relationship between Financial Inclusion and economic growth in the West African Economic and Monetary Union (WAEMU). Their results found that there is no causality between the Financial Inclusion and the economic growth at short run (0-2 years) but at medium (2-4 years) or long run (4-8 years), there is a bi-directional causality. Therefore, financial inclusion measures that have been implemented have

actually simulated growth in WAEMU in the long run. Lenka and Sharma (2017) examined the effect of financial inclusion on economic growth in India over the 1980 to 2014. The study found a positive impact of financial inclusion on economic growth both in the long run and short run. The empirical estimates also showed that there is a unidirectional relationship between financial inclusion and economic growth in India. Kim et al. (2018) examined the relationship between financial inclusion and economic growth in 55 Organization of Islamic Cooperation (OIC) countries. They found that financial inclusion has a positive effect on economic growth. Their results also suggested that there is a bidirectional relationship between financial inclusion and economic growth.

Data

The sample to be used consists of annual observations of 23 emerging and developing countries in Asia,namely Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Fiji, India, Indonesia, Lao P.D.R., Malaysia, Maldives, Mongolia, Myanmar, Nepal, Philippines, Samoa, Solomon Islands, Sri Lanka, Thailand, Timor-Leste, Tonga, Vanuatu, and Vietnam, selected on the basis of data availability during the period2005 to 2019. Data set isan unbalanced panel. The source of the data is primarily from the world development indicator (World Bank, 2019d) and World Economic Outlook database (IMF, 2019).

Dependent variable is $GRGDPpc_{it}$ (Growth Rate of Gross Domestic Product per capita at time t) and there are 8 independent variables. Table 1 describes each of the variables, their units, and their predicted effects on economic growth.

Descriptive statistics for the variables used in the analysis are shown in Table 2. The average growth rate of the sample was about 4.25 percent per year. The average of Automated teller machines per 100,000 adults was about 23.76 machines with the highest is 113.06 machines per 100,000 adults for Thailand. The average of borrowers from commercial banks per 1,000 adults was about 196.10 machines with the highest is 742.64 borrowers per 100,000 adults for Brunei Darussalam. The average of depositors with commercial banks per 1,000 adults was about 661.64 machines with the highest is 1894.03depositors per 100,000 adults for Brunei Darussalam. The average of life insurance premium volume to GDP was about 1.19 percent with the highest is 3.9 percentfor Thailand.

Methodology

Generalized method of moments (GMM) with fixed effect model (FEM) and random effect model (REM) was employed to estimate the relationship

Table 1
Variables, description, unit of variables and predicted signs

Variable name	*Description*	*Unit*	*Predicted effect*
$GRGDPpc_{it}$	Growth Rate of Gross Domestic Product per capita of country *i* at time *t*	Percent change	Dependence variable
INF_{it}	Inflation rate of country *i* at time *t*	Percent change	-
$POPGR_{it}$	Population growth of country *i* at time *t*	Percent change	-
$TRADE_{it}$	Trade openness of country *i* at time *t*	Percent of GDP	+
SEP_{it}	School enrollment, primary of country *i* at time *t*	Percent gross	+
ATM_{it}	Automated teller machines per 100,000 adults of country *i* at time *t*	Machines	+
$BORROW_{it}$	Borrowers from commercial banks per 1,000 adults of country *i* at time *t*	Persons	+
DEP_{it}	Depositors with commercial banks per 1,000 adults of country *i* at time *t*	Persons	+
$INSUR_{it}$	Life insurance premium volume to GDP of country *i* at time *t*	Percent change	+

Table 2
Summary Statistics

	Obs	*Mean*	*Std.Dev*	*Min*	*Max*
$GRGDPpc_{it}$	299	4.25	6.09	-27.78	58.17
INF_{it}	298	5.52	5.00	-18.11	35.02
$POPGR_{it}$	299	1.38	0.66	0.21	3.73
$TRADE_{it}$	299	87.55	42.78	0.17	210.37
SEP_{it}	299	108.83	9.73	81.05	104.13
ATM_{it}	269	23.76	23.78	0.00	113.06
$BORROW_{it}$	138	196.10	168.403	0.63	742.64
DEP_{it}	215	661.64	421.50	6.48	1894.03
$INSUR_{it}$	171	1.19	1.06	0	3.9

between financial inclusion and economic growth in emerging and developing Asia. For best model selection, FEM hypothesis testing, REM versus FEM, Hausman specification test is used (see Hsiao, 2003). The model for the study is hereby specified as follows

$$GRGDPpc_{it} = \beta_0 + \beta_1 INF_{it} + \beta_2 POPGR_{it} + \beta_3 TRADE_{it} + \beta_4 SEP_{it} + \beta_5 ATM_{it} + \beta_6 BORROW_{it} + \beta_7 DEP_{it} + \beta_8 INSUR_{it} + v_i + \varepsilon_{it} \quad (1)$$

where i represents 23 cross-sectional emerging and developing Asia countries, t is the time period of the proxy measurement from 2005 to 2019, v_i is the panel-level effect, and ε_{it} is independent and identically distributed (i.i.d.) over the whole sample with variance σ^2_{ε}. If the country effects are uncorrelated with the regressors, they are known as random effects. In the random effects model, because there is no correlation between the country specific effects andthe regressors, country specific effects are parameterized as additional random disturbances. Ifthe country effects are correlated with the regressors, then they are known as fixed effects.

Results

Table 3 reports GMM panel data estimation. The dependent variable is as a proxy variable for economic growth, and the four proxy variables () are explanatory variables for financial inclusion.

Table 3
GMM panel data estimation

Variable	*Coefficient*	*t-Statistic*	*Prob*
Constant	-2.673	-0.430	0.668
INF_{it}	0.209***	4.502	0.000
$POPGR_{it}$	-2.717**	2.309	0.025
$TRADE_{it}$	0.009	0.551	0.583
SEP_{it}	0.073	1.212	0.231
ATM_{it}	0.105***	3.179	0.002
$BORROW_{it}$	0.014***	4.323	0.000
DEP_{it}	0.005***	4.211	0.000
$INSUR_{it}$	0.612*	1.942	0.057

Note: ***, **, * represent 1,5 and 10 percent levels of significance respectively.

Table 3 shows that all financial inclusion variables have positive signs and it is statistically significant at 10% significance level. It implies that a higher level of financial inclusion is associated with a higher level of economic growth. The result also shows that the inflation rate has a positive impact on economic growth while population growth has a negative effect on economic growth. Comparing coefficients, the results show that population growth has a greater impact on economic growth than the inflation, the automated teller machines per 100,000 adults, the borrowers from commercial banks per 1,000 adults, the Depositors with commercial banks per 1,000 adults and the life insurance premium volume to GDP.

When we interpret the coefficient of financial inclusion measures, the results mean that 1 unit increase of ATM number, commercial bank

borrowers, commercial bank depositors, and Life insurance premium volume to GDP lead 0.105%, 0.014%, 0.005% and 0.612% increase of GDP per capita respectively in emerging and developing Asia countries.

We report the Granger causality test results for each proxy variable (ATM_{it}, $INSUR_{it}$, DEP_{it}, $BORROW_{it}$) in Table 4.

Table 4
Panel granger causality tests

Null Hypothesis	*Obs*	*F-statistic*	*Prob*
ATM_{it} does not Granger cause $GRGDPpc_{it}$	223	6.055***	0.003
$GRGDPpc_{it}$ does not Granger cause ATM_{it}		1.046	0.353
$BORROW_{it}$ does not Granger cause $GRGDPpc_{it}$	110	10.226**	0.029
$GRGDPpc_{it}$ does not Granger cause $BORROW_{it}$		0.253	0.777
DEP_{it} does not Granger cause $GRGDPpc_{it}$	171	2.456*	0.089
$GRGDPpc_{it}$ does not Granger cause DEP_{it}		0.088	0.916
$INSUR_{it}$ does not Granger cause $GRGDPpc_{it}$	139	2.967*	0.074
$GRGDPpc_{it}$ does not Granger cause $INSUR_{it}$		0.459	0.633

Note: ***, **, * indicate statistical significance at the 1,5 and 10 percent levels, respectively.

Focusing on the causalities between $GRGDPpc_{it}$ and financial inclusion variables, we find that all financial inclusion variables (ATM_{it}, $INSUR_{it}$, DEP_{it}, $BORROW_{it}$) Granger cause economic growth ($GRGDPpc_{it}$) with 1%, 5%, 10% and 10% with statistical significant respectively, but economic growth ($GRGDPpc_{it}$) does not Granger cause these financial inclusion variables.

Conclusions and Recommendations

In this paper, we look for the relationship between financial inclusion and economic growth of emerging and developing countries in Asia. To find such relationships, we analyzed the data from 23 emerging and developing countries in Asia during the period of 2005-2019. GMM panel data estimation and panel Granger causality were employed.

The results show that financial inclusion significantly has a positive impact on economic growth in emerging and developing countries in Asia. When financial inclusion leads growth positively this means that government and policy makers in emerging and developing countries in Asia should consider the policy that increases the opportunity of individuals and businesses to access the financial products and services that meet their needs such as increasing in number of the automated teller machines or improving the account opening process. Comparing the coefficients of financial inclusion variables, the results show that the life insurance

premium volume to GDP has a greater impact on economic growth than the automated teller machines per 100,000 adults, the borrowers from commercial banks per 1,000 adults, and the depositors with commercial banks per 1,000 adults. This indicates that insuranceshould become a major component in certain economies. This finding isalso particularly important for policy-makers that they need to consider insurance as a substitute industry for banking and other financial markets rather than a complementary industry.

The results from Granger causality test show that there is unidirectional causality running from financial inclusion to economic growth. This indicates that the government and policymakers in emerging and developing countries in Asia should continue to encourage and reform promoting the demand for financial services. This would stimulate the economic growth by increasing savings and therefore investments.

The empirical results of this study will help the countries of emerging and developing in Asia to trace out a financial policy for quicker economic growth and get out of a recession. When financial inclusion leads growth positively this means that the increase in opportunity of individuals and businesses have access to useful and affordable financial products and services that meet their needs will lead to increase in consumption and investment and lead to increase in emerging and developing countries in Asia's income. The examination of the causal relationship between financial inclusion and economic growth, given that the right use of the financial sector is regarded as the best tool forsustainable growth, has major policy implications.

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