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Is Human Capital Development a Channel Through Which Financial Development Influences Economic Growth? A Case of Emerging Markets

Kunofiwa Tsaurai[1]

Abstract: The impact of financial development on economic growth has been widely and extensively researched in recent years. The findings show that financial development-led economic growth nexus is no longer a disputable matter in the discipline of finance and economics. What is yet to be fully explored are the different channels through which financial development affects economic growth. The current study focused on exploring whether human capital development is a channel which enhances financial development led economic growth in emerging markets using the dynamic generalised methods of moments (GMM) approach with data from 1994 to 2014. A similar study done by Abubakar et al (2015) focused on the ECOWAS region, used panel data analysis approaches which ignored the dynamic nature of the dependent variable and the endogeneity problem. The study found out that stock market capitalisation, stock market turnover and the outstanding domestic public debt securities are the financial development variables which had a positive influence on economic growth through human capital development channel in emerging markets, consistent with Abubakar et al (2015). The study therefore urges emerging markets to implement policies aimed at accelerating human capital development efforts in order to speed up the rate at which financial development (stock market turnover, outstanding domestic public debt securities and stock market capitalisation) influences economic growth. Taking into account the results of the relationship between explanatory variables and the dependent variable, the study encourages emerging markets to implement policies and programmes directed at promoting savings, infrastructural development and FDI inflows in order to enhance economic growth. Future studies can focus on investigating the existence of various other channels through which financial sector development improves economic growth in emerging markets.

Keywords: Human Capital; Financial Sector; Economic Growth; Emerging Markets

JEL Classification: J24; E44; P2; F43

1. Introduction

Background of the study, Research gap and Contribution of the paper: According to Cavusgil et al (2013), financial sector development, economic growth, foreign direct investment (FDI), economic and political reforms have been on the rise in emerging markets during the last decade. What is not clear from the above assertion is the causality between the variables, the linearity or non-linearity between or among the variables and the channels through which variables can influence each other. It therefore in the case of emerging markets becomes very difficult to implement relevant policies which guarantees sustainable and long term economic growth. Although literature undisputedly shows that economic growth is positively affected by FDI, financial development and implementation of reforms, among others, this cannot be guaranteed to have happened in a linear manner in emerging markets or other countries. Hence, the question which the current study attempts to address through an empirical

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investigation is: Could human capital development which flows alongside FDI have played a positive role in enhancing the financial sector's ability to influence economic growth in emerging markets?

Despite the importance of financial development on economic growth which has been clearly explained in literature (Schumpeter. 1911; Levine. 1997; McKinnon. 1973; Shaw. 1973; Townsend. 1983; Goldsmith. 1969; Osinubi. 1998; Diamond & Dybvig. 1983; Pagano. 1993), majority of the existing empirical literature wrongly assumed that the two variables are related in a linear format. The non-linearity relationship between financial development and economic growth is an area which is not yet settled in economics and finance. It is against this backdrop that the current study explored if human capital development is an avenue through which the financial sector influences economic growth in emerging markets. Few empirical work on a similar subject matter had earlier on been done by Evans et al (2002), Mobolaji (2010), Guihong (2014), Abubakar et al (2015) and Kargbo et al (2016), results of which noted that human capital development is essential in enhancing the financial sector's positive impact on economic growth. These similar previous studies stayed away from emerging markets, a unit of analysis which the current study focused on because the depth, size and quality of their financial sector is less diverse and were characterised by high levels of economic growth, financial development and foreign direct investment during the last decade, according to Cavusgil et al (2013). Moreover, previous similar studies used methodologies that does not address two issues prevalent in economics and finance: (1) the endogeneity problem and (2) the dynamic characteristic of the dependent variable (economic growth data). The current study addressed these issues.

Structure of the paper: The rest of the paper is organized into six sections: Section 2 is the theoretical literature on financial development led economic growth hypothesis whereas section 3 discusses the theoretical rationale of the human capital development led economic growth hypothesis. Section 4 explains the impact of human capital development on financial development-led growth hypothesis from both a theoretical and empirical view. Section 5 discusses the research methodology, data analysis and results, section 6 concludes the study whilst section 7 list the references.

2. Financial Development and Economic Growth –Theoretical View

Levine (1997) summarized the impact of financial development on economic growth as shown in Figure 1.

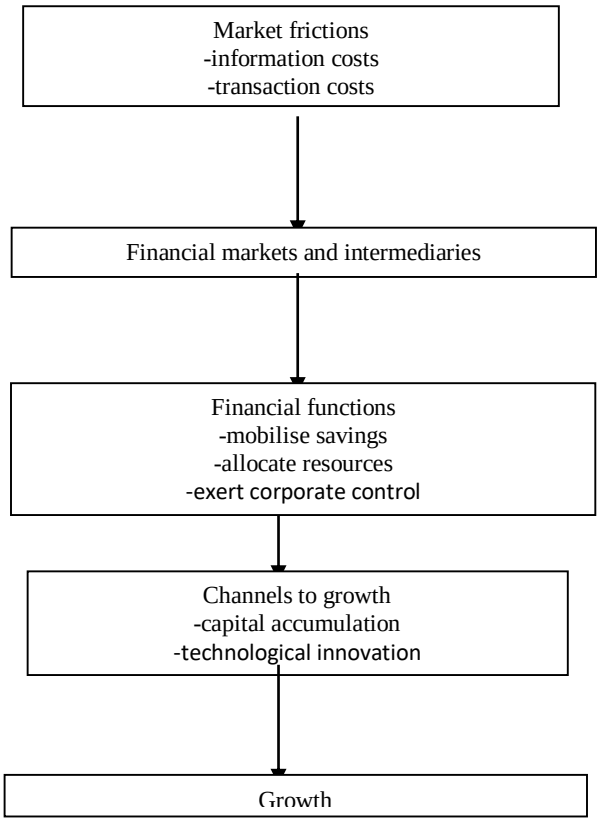

Figure 1. A Theoretical Framework to Finance and Growth

Source: (Levine, 1997, p. 691)

According to Schumpeter (1911), financial markets avail funds to companies whose chances of positively influencing economic growth is very high through their ability to spearhead technological innovation and producing innovative products (efficient allocation of resources). The positive influence of the financial sector on the economy is according to Schumpeter achieved through the financial markets' ability to diversify risk, pooling of savings and efficiently allocating them towards the productive sectors of the economy. The view was shared by other theorists (McKinnon, 1973; Shaw, 1973; Townsend, 1983; Goldsmith, 1969) who argued that the provision of risk management services, reducing the information costs, offering loans to firms which are more productive or to projects associated with the highest return, savings mobilisation and lowering transaction costs are the avenues through which financial markets enhance economic growth.

Osinubi (1998) and Levine (1997) are of the opinion that financial markets liquidity increases the chances of some financial assets (shares, national certificates of deposits and bankers' acceptances) being acceptable as collateral security when firms borrow from the banks for production purposes. Pagano (1993) argued that financial markets allows more individuals to participate in collective investment schemes or unit trusts thus enhancing risk sharing and diversification. This ensures that more funds are pooled together and channeled towards the sectors of the economy which are productive. The assertion was supported by Diamond and Dybvig (1983) whose study observed that financial sector gives depositors access to high return investment opportunities which are illiquid by pooling their

liquidity risk. However, the role that human capital development plays in promoting financial development and consequently economic growth has received very little attention in literature.

3. Human Capital and Growth: A Theoretical Perspective

Several theoretical perspectives are available which explains how differently human capital development can influence economic growth. For example, Isola and Alani (2012) argued that higher levels of human capital development enhance people's productivity, technological advancement, entrepreneurship and creativeness thereby boosting economic growth. They also noted that as the role of engineering and science continue to take centre stage in the manufacturing of goods and services, higher level of human capital development is increasingly becoming more critical for economic growth. The argument was supported by Aghion and Howitt (1998) who noted that an increase in research and development (which is a by-product of human capital development) boost long term economic growth prospects.

Due to the recent urgent need to incorporate new information into the production processes, economic growth now to a greater extent depend on the ability of the workforce to continuously acquire new knowledge (Isola, 2002). This is consistent with Romer (1990) who viewed human capital as the engine behind productivity in the economy and Rosen (1999) who argued that human capital development is an investment in people with the major aim of increasing their level of productivity in the economy. The endogenous growth theory supported by Romer (1990) argue that human capital is just like other factors of production such as land and physical capital, all of which are the necessary ingredients for economic growth. According to Adeyemi and Ogunsola (2016), education (one of the determinants of human capital development) equips workers with the competencies, skills and knowledge which are necessary not only for a country's development but also for sustainable economic growth.

4. Human Capital Development and the Financial Development Led Growth Hypothesis

According to Outreville (1999), educated people are more risk averse, can easily access information for easy decision making purposes and get paid better salaries hence they save more money for investment purposes. Another way through which human capital development enhances financial development and consequently economic growth is that financial literacy is positively correlated with the level of education among the people (Kurihara, 2013).

On the empirical front, the dominant study which investigated the impact of human capital development on financial development-growth nexus was done by Abubakar et al (2015). The deviation between the current study and the one carried out by Abubakar et al (2015) is that the latter focused on Economic Community of West African States (ECOWAS), used panel data approaches (fully modified and dynamic ordinary least squares) which ignored the dynamic nature of economic growth data and endogeneity problems. The current study's unit of analysis are the emerging markets, employed generalised methods of moments (GMM) framework which addresses both endogeneity issues and the dynamic nature of economic growth data. Their study noted that human capital development was an avenue through which the financial sector of ECOWAS had a significant impact on economic growth.

Few other studies on the similar subject which revealed that the interaction between human capital development and financial development accelerated economic growth were carried out by Guihong (2014) in China's Shandong province and Kargbo et al (2016) in Sierra Leone. Other closely related studies (Mobolaji, 2010 on Saharan African nations and Evans et al. 2002 on 82 countries from low,

medium and high income categories) observed that the complementarity relationship between human capital development and financial sector growth is necessary in stimulating economic growth.

5. Research Methodology

Data and its sources: With emerging markets as a unit of analysis, the study used dynamic GMM approach with panel data ranging from 1994 to 2014. Economic growth is the dependent variable whilst the explanatory variables include financial development, human capital development, FDI, exchange rate, inflation, infrastructural development, savings and trade openness. Databases from which the secondary data for the variables used was obtained include International Financial Statistics databases, United Nations Development Programme reports, Global Financial Indicators, International Monetary Fund (IMF) and World Bank Indicators. Following IMF (2015) report and data availability considerations, emerging markets included in the study are South Africa, Argentina, Brazil, Colombia, Mexico, Peru, Czech Republic, Greece, Poland, Portugal, Russia, Turkey, China, Hong Kong, Indonesia, India, Malaysia, Philippines, Republic of Korea, Thailand and Singapore.

General model specification: Informed by literature and recent similar studies (Chirwa & Odhiambo, 2016; Anyanwu, 2014; Fetahi-Vehapi et al., 2015; Delgado et al., 2014), equation 1 shows the general model specification for the economic growth function.

GROWTH=f (FIN, HCD, FDI, INFL, EXCH, SAV, OPEN, INFR). [1]

Where GROWTH, FIN, HCD, FDI, INFL, EXCH, SAV, OPEN and INFR stands for economic growth, financial development, human capital development, foreign direct investment, inflation, exchange rate, savings, trade openness and infrastructural development.

Pre-estimation diagnostics

Table 1. Correlation Results

	GROWTH	FIN	HCD	FDI	INFL	EXCH	SAV	OPEN	INFR
GROWTH	1.0000								
FIN	0.5017***	1.0000							
HCD	0.6586***	0.2208***	1.0000						
FDI	0.6283***	0.7859***	0.3479***	1.0000					
INFL	-0.0663	-0.0387	-0.0154	-0.0567	1.0000				
EXCH	-0.1706	-0.0925*	-0.2151***	-0.1102**	-0.0112	1.0000			
SAV	0.2427***	0.2046***	0.0912*	0.3544***	-0.0299	0.0696	1.0000		
OPEN	0.6999***	0.7145***	0.4296***	0.8070***	-0.0649	-0.1108**	0.5474***	1.0000	
INFR	0.7711***	0.3279***	0.6573***	0.3824***	-0.0476	-0.2386***	0.3387***	0.5325***	1.0000

Source: Author compilation from E-Views

Note: ***/**/* denotes statistical significance at the 1%/5%/10% level respectively.

As evidence that there is no multi-collinearity problem among the variables in line with Stead (1996), the maximum correlation between variables (FDI and trade openness) is 80.7% (see Table 1). Consistent with most theoretical literature, variables such as financial development, human capital development, FDI, savings, trade openness and infrastructural development were positively and significantly correlated with economic growth whilst inflation and exchange rates were negatively related with economic growth.

Table 2. Results of descriptive statistics

	GROWTH	FIN	HCD	FDI	INFL	EXCH	SAV	OPEN	INFR
Mean	9604	87.04	0.78	4.04	13.58	539.6	26.39	93.45	3236
Median	5980	38.91	0.78	2.51	4.45	7.74	23.27	57.17	2633
Maximum	56284	1254	0.94	39.87	2076	11865	54.29	455.28	10552
Minimum	353.29	0.04	0.45	0.03	0.01	0.03	8.33	15.64	240.02
Range	55931	1253.96	0.49	39.84	2075.99	11864.97	45.96	439.64	10331.98
Standard. deviation	9830	157.83	0.09	5.76	100.66	1872	10.45	95.27	2352
Skewness	1.84	4.99	-0.477	3.60	19.65	4.36	0.79	2.28	0.72
Kurtosis	7.01	31.51	2.95	17.47	401.62	21.45	2.92	7.39	2.79
Jarque-Bera	543.98	16769	16.80	4800	2948116	7653.48	46.09	737.14	38.95
Probability	0.0000	0.0000	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Observations	441	441	441	441	441	441	441	441	441

Source: Author compilation from E-Views

The results (all the probabilities of the Jarque-Bera criteria have got a value of zero) in Table 2 clearly shows that the data for all the variables are not normally distributed. The range and standard deviation values for variables such economic growth, financial development, inflation, exchange rates and infrastructural development provide evidence of the existence of outliers which the current study addressed by transforming all the data sets into natural logarithms.

Research Methodology, Results Description and Interpretation: All the variables which were used in the study were found to be stationary at first difference (results not reported here). These results paved way for an econometric estimation of equation 2 using the dynamic GMM framework.

$$GROWTH_{it} = \beta_0 + \beta_1 \mathrm{FIN}_{it} + \beta_2 HCD_{it} + \beta_3 (FIN_{it} . HCD_{it}) + \beta_4 X_{it} + \mu_i + \varepsilon it \quad [2]$$

Where β_0 stands for the intercept term μ_i represents the time invariant and unobserved country specific effect and Ɛit is the error term. X_{it} is the vector of explanatory variables (FDI, inflation, exchange rate, savings, trade openness and infrastructural development) whereas t and i are the subscripts which respectively stands for time and country.

The measures of GROWTH, HCD, FDI, OPEN, INFR, INFL, EXCH and SAV that were used for the purposes of the current study are GDP per capita, human capital development index, net FDI as a ratio of GDP, total exports and imports (% of DP), electric power consumption as a ratio of GDP, inflation consumer prices (annual %), local currency as a ratio to the United States Dollar and gross savings as a

ratio of GDP respectively. A positive and significant value of the interaction term (β_3) shows that human capital development is a channel through which economic growth is influenced by financial development in emerging markets.

Table 3 shows the Dynamic GMM results for the paper.

Table 3. Dynamic Generalised Methods of Moments (GMM) Results

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
$GDP_{i,t-1}$	0.94***	0.94***	0.94***	0.95***	0.94***	0.95***	0.94***
FIN	0.03*	0.01	0.01*	-0.02*	-0.04***	-0.006	0.02**
HCD	0.24	0.65***	0.51***	0.66***	0.68***	0.65***	0.53***
FIN.HCD	0.01	0.09***	0.05	-0.11***	-0.11***	-0.09***	0.06**
FDI	0.01	0.01	0.01*	0.01	0.009	0.01	0.02**
INFL	-0.004	-0.002	-0.003	-0.01	-0.007	-0.01	-0.001
EXCH	-0.00005	0.0003	0.0002	0.0001	0.0002	-0.000004	-0.0002
SAV	0.05**	0.04*	0.04*	0.05**	0.05**	0.06**	0.07***
OPEN	-0.05***	-0.04***	-0.05***	-0.03**	-0.03**	-0.04***	-0.05***
INFR	0.03**	0.02	0.02	0.03*	0.03**	0.03*	0.02
Adjusted R-squared	0.98	0.98	0.98	0.98	0.98	0.98	0.98
J-statistic	430	430	430	430	430	430	430
Prob(J-statistic)	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source: Author's compilation from E-Views

***, ** and * denote 1%, 5% and 10% levels of significance, respectively.

The only distinguishing feature between model 1 to 7 is the proxy of financial development (FIN) used. Model 1, 2, 3, 4, 5, 6 and 7 used stock market capitalisation, stock market turnover, stock market value traded, domestic private credit by banks, domestic credit by financial sector, outstanding domestic private debt securities and outstanding domestic public debt securities respectively.

In model 1, stock market capitalisation had a significant positive effect on economic growth whilst human capital development positively but insignificantly affected economic growth. The interaction between stock market capitalisation and human capital development had a non-significant positive impact on economic growth. This is evidence that human capital development provided a positive but non-significant channel through which stock market capitalisation influenced economic growth in emerging markets. In model 2, stock market turnover, positively but non-significantly affected economic growth whilst human capital development had a significant positive influence on economic growth. The interaction between human capital and stock market turnover positively and significantly influenced economic growth in emerging markets thereby providing evidence that human capital development is a channel through which stock market turnover influenced economic growth in emerging markets. The finding is consistent with Abubakar et al (2015) whose study observed that human capital development was a channel through which financial development positively and significantly influenced economic growth in the ECOWAS region.

In model 7, (1) human capital development, (2) outstanding public debt securities and (3) the interaction between human capital development and outstanding public debt securities had a significant positive impact on economic growth in emerging markets. The finding proves that financial development influences economic growth through human capital development, consistent with not only Abubakar et al (2015) but also Guihong (2014), Kargbo et al (2016), Mobolaji (2010) and Evans et al (2002), all of

which their studies proved that the interaction between human capital and financial development accelerated economic growth.

Despite both stock market value trade and human capital development having a separate significant positive impact on economic growth, the interaction between the two variables positively but non-significantly affected economic growth in model 3. Contrary to theoretical predictions, domestic private credit by banks (model 4), domestic credit by financial sector (model 5) and outstanding domestic private debt securities (model 6) had a significant negative impact on economic growth in emerging markets. On the other hand, as predicted, economic growth was positively and significantly affected by human capital development in model 4, 5 and 6. The interaction between human capital development and financial development had a significant negative influence on economic growth in models 4, 5 and 6, thereby suggesting that the impact of negative impact of financial development outweighed the positive influence of human capital on economic growth in emerging markets. In other words, human capital development did not act as a channel through which domestic private credit by banks, domestic credit by financial sector and outstanding domestic private debt securities facilitated economic growth in emerging markets.

In all the seven models, the lag of economic growth had a positive and significant influence on economic in emerging markets in line with Nor et al (2015)'s observations. Inflation negatively but non-significantly impacted on economic growth across all the seven models in line with Schreft and Smith (1997) whose study noted that higher inflation increases interest rates and consequently promotes inefficient allocation of resources and stifle the growth of the economy. Resonating with Lucas (1988) whose study argued that savings stir up investment activities, provide organic and cheaper capital in the economy, savings positively and significantly affected economic growth in emerging markets in all the seven models. Trade openness had a significant negative impact on economic growth across all the seven models in support of an argument by Baltagi et al. (2009) which says that big domestic companies shun local sources of inputs in preference of external sources if trade openness levels are high thereby crowding out local providers of such inputs and hampering economic growth. FDI positively but non-significantly affected economic growth in models 1, 2, 4, 5 and 6 whilst FDI also had a significant positive impact on economic growth in models 3 and 7. This follows an observation by Nath (2005) which says that FDI boosts not only the levels of capital accumulation but also total factor productivity, both of which are necessary ingredients for economic growth.

Moreover, economic growth was significantly positively influenced by infrastructure development in models 1, 4, 5 and 6 whilst infrastructure development has a positive but insignificant impact on economic growth in models 2, 3 and 7. The findings supports an argument by Fedderke and Garlick (2008) which says that the impact of infrastructure on economic growth is similar to the influence of any other factors of production on the economy. Models 1, 6 and 7 shows that increase in exchange rates had a deleterious effect on economic growth in emerging markets. The reason is that the local currency becomes weaker, imports becomes expensive, inflation goes up thereby weighing down heavily on the economy. On the other hand, a rise in exchange rates had a positive but insignificant influence on economic growth in emerging markets. The theoretical rationale is that the strengthening of the local currency reduces the competitiveness of the country's exports leading to less foreign currency inflows into the economy.

6. Conclusion, Policy Implications and Possible Future Research

The impact of financial development on economic growth has been widely and extensively researched in recent years. The findings show that financial development-led economic growth nexus is no longer a disputable matter in the discipline of finance and economics. What is yet to be fully explored are the

different channels through which financial development influences economic growth. The current study focused on exploring whether human capital development is a channel which enhances financial development led economic growth in emerging markets using the dynamic GMM approach with data from 1994 to 2014. A similar study done by Abubakar et al. (2015) focused on the ECOWAS region, used panel data analysis approaches which ignored the dynamic nature of the dependent variable and the endogeneity problem. Stock market capitalisation, stock market turnover and the outstanding domestic public debt securities are the financial development variables which were found to have had a positive influence on economic growth through human capital development in emerging markets, consistent with Abubakar et al. (2015). The study therefore urges emerging markets to implement policies aimed at accelerating human capital development efforts in order to speed up the rate at which financial development (stock market turnover, outstanding domestic public debt securities and stock market capitalisation) influences economic growth. Taking into account the results of the relationship between explanatory variables and the dependent variable, the study encourages emerging markets to implement policies and programmes directed at promoting savings, infrastructural development and FDI inflows in order to enhance economic growth. Future studies can focus on investigating the existence of various other channels through which financial sector development improves economic growth in emerging markets.

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