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Impact of Financial Development on Economic Growth during the Subprime Mortgage Crisis: Evidence from BRICS

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Abstract: *The progress and advancement of any country rely significantly on the optimal functioning of its financial sector. Much of the literature is devoted to the analysis of developing countries regarding the impact of financial development on economic growth. However, in the wake of the global financial crisis, the issues and implications needed to be rethought. This study explores the impact of financial development on economic growth with respect to the mortgage crisis using 5 BRICS countries over the period of 1990–2019. The study follows the Interactive regression to find the impact of financial development on the economy with respect to the crisis. The paper employs both random effects and fixed effects to draw conclusions. The results demonstrate that before the crisis, stock market capitalization, liquid liabilities and stock market turnover had a significant impact on economic growth. Furthermore, stock market turnover helps to stabilize the economy in the ongoing crisis. BRICS states should consider the significance of these results as part of their potential financial development policy and strategy necessary to strengthen the economy.*

Key Words: Financial Development, Economic Growth, Mortgage Crisis, Fixed Effects

Introduction

An inevitable factor for the progress of a country is economic growth, which is dependent on numerous factors or measures. Economic growth is elucidated as an increase in the production and supply of goods and services with more purchasing power. Increases in capital resources, labour, technologies, human capital, financial measures and many other factors help to increase economic growth. Economic growth does not remain constant over a long period of time. The deterioration of factors such as capital resources, labour, and financial measures can be a cause of stagnation in the economy. History brings the fact to light that the economic growth of any country deteriorates, especially due to crisis. For any country to have a greater understanding of growth patterns over time, it is important to consider welfare and sustainable economic development viewpoints. Without understanding the level of economic growth, it is impossible for any fiscal government to formulate policies for welfare and sustainable development. Furthermore, it is impossible for policymakers in any economy to devise an appropriate strategy for growing welfare, decreasing poverty, and prioritizing industries in favour of higher growth momentum unless we consider the causes of growth trends over time (Kandil et al., 2017).

Financial development is commonly elucidated as enhancing the quantity, quality & efficiency of financial intermediary services (Choong and Chang, 2011). A well-developed financial infrastructure has the power to effectuate technical advancement and economic development by providing financial services and tools to those entrepreneurs who are more likely to produce creative technologies and processes successfully. A mature financial market allows for improved resource allocation, monitoring, knowledge asymmetry, as well as economic development (Shen and Lee, 2006).

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Aside from many other factors, Financial Development is identified by two major types of indicators, i.e. banking sector indicators and stock market indicators (Guru and Yadav, 2019). Every country has a desire to be a part of the development race, and economic development is considered a huge factor in the development of any country. Developing economies continue their struggle until they become developed. Financial Development plays a crucial role in the economic growth. The financial sector plays a value-enhancing intermediation position and contributes to economic development by pooling funds from savings-surplus units and making those funds available to savings-deficit units with feasible investment ventures. Similarly, by evaluating proposals for credit decisions, the finance sector helps to ensure that only feasible projects should be financed. Countries with mature financial systems are expected to expand faster than less developed systems (Rajan & Zingales, 2003; Levine & Zervos, 1998).

The abbreviation "BRICS", coined by O'Neil (2001), represents Brazil, Russia, India, China & South Africa. His prediction is that BRICS block countries may surpass the G-7 countries in the foreseeable future due to strong financial relationships among the states. However, the individual size, performance and scope within the BRICS group differ considerably. Global Sherpa (2009) emphasizes that BRICS countries are increasing their support to mitigate the challenges faced by emerging economies. Nevertheless, the BRICS group are currently facing several challenges, for instance, inadequate investment in infrastructure like roads, ports and railway, inefficient capital equipment, public debt, increasing income inequality, elevated unemployment, rising labour cost and high-interest rates. These challenges pose a potential threat to achieving the required objective (UNCTAD, 2015; UNDP, 2014).

Guru and Jadav (2019) describe financial system development as the enhancement of efficiency, size and sustainability of the financial markets. It is also described that more contact with financial markets can yield economic benefits. An effectively established financial market channelizes the savings of an economy into lucrative investments (Diamond, 1984; Stiglitz and Weiss, 1983). Shan (2005) describes the Asian economic crisis of 1997 that raised questions about financial development in generating economic growth.

Furthermore, the subprime mortgage crisis also specifies the failure of the financial markets. In this context, very few studies have been done regarding the financial development and growth specific to BRICS, which consider the impact with respect to the subprime mortgage financial crisis.

The following section focuses on the literature review related to research. Data and methodology are explained in section 3. This is followed by the result section. The conclusion is presented in the last section of the paper.

Review of Literature

The literature offers a complex and occasionally contradictory picture of the relationship between financial development and economic growth. Early academics like Schumpeter (1934) and Goldsmith (1969) posited that finance is an inevitable driver of economic growth and asserted a positive correlation between financial development and GDP per capita. The "McKinnon-Shaw" hypothesis, advanced by McKinnon (1973), provided credence to this viewpoint by emphasising the role that financial repression plays in impeding growth.

However, Robinson (1952) and Lucas (1988) adopted a more circumspect approach, viewing financial development as a minor contributor to economic expansion. Time series methods were used by Demetriades and Hussein (1996) to examine the connection between real GDP and finance, adding to the current discussion. Later, in some economies, Beck and Levine (2004) confirmed that financial development and economic growth are positively correlated.

Saci et al. (2009) used the Generalised Method of Moments to examine how financial development affects growth. The results of their study demonstrated the noteworthy and favourable impact of stock market indicators on economic growth. Conversely, indicators associated with the banking sector, such as private sector credit and liquid liabilities, were found to have adverse effects on economic development.

Fink et al. (2009) expanded on the topic to include the European Union and neighbouring countries, arguing that, at least initially, the financial industry could aid in the stability and development of

transitional countries. Bojanic (2012) provided a rebuttal, contending that financial liberalisation was not optimal for the Ghanaian economy. Shahbaz et al. (2017) and Kandil et al. (2017) used data from developing nations like China and India to conclude that financial development has a positive effect on economic growth. According to Lin et al. (2016), financial reforms and development are essential to maintaining China's rapid economic growth. The relationship between the development of the financial sector and economic growth, particularly during times of crisis, was examined by Asteriou and Spanos (2019), who found that growth is negatively impacted during these times. This presents a crucial angle that was frequently missed in earlier research: the impact of financial crises on economic expansion.

A few researchers concentrated on particular aspects of the financial sector. The development of the stock market was the focus of studies by Masoud and Hardaker (2012), Osaseri and Osamwonyi (2019), and Kalu and Wang (2019), all of whom concluded that it was helpful for economic growth. Tsaurai (2021) broadened the scope of the conversation to include the BRICS nations, noting that the growth of the financial sector supports economic expansion.

While previous research examined the relationship over time between financial depth and economic development, there is a clear missing piece of information regarding the relationship between financial development and economic expansion and crises. In order to close this gap, this study will examine the factors that specifically drive economic growth within the framework of financial development, paying particular attention to times of crisis.

Data and Methodology

Econometric Methodology

This study analyses the impact of financial development on economic growth with respect to crisis. Random effect and fixed effect approaches are used to examine the impact of financial development on economic growth. Three different models are used in this research to find the impact of the crisis on economic growth.

Initially, a basic linear regression approach is considered to analyze the current panel data study. There is bias in pooled OLS because of the omitted heterogeneity. A potential or more likely positive way out to such heterogeneity bias is the take up of fixed or random effects models, which control for the said problem (Hsiao, 2003). Hausman test is used to decide between the random or fixed effect approaches.

Interaction effect, Brambor et al. (2005) approach is applied to interact the dummy crisis with the financial development measures and figure out its ultimate effect on economic growth.

$$Y = \beta_0 + \beta_1 X + \beta_2 XZ + U_{it} \quad (1.1)$$

Most of the studies used the basic regression equation (1.1) to analyse the impact on financial development and economic growth (Khan & Senhadji, 2000; Asteriou and Spanos, 2019). So, the basic benchmark econometric model is described as eq. (1.2) given below:

$$GGDP_{it} = \alpha_0 + \beta FD_{it} + \Upsilon X_{it} + u_{it} \quad (1.2)$$

GDP is taken as the dependent variable. In the model, α_0 represents the coefficient; vectors of coefficients are β and Υ; FD_{it} represents the matrix of financial development measures (DCPS, LLY, CACT, SMCP, SMTR); X_{it} shows the matrix of control variables (INFL, TROP, FDI) and u_{it} is an error term. Regression equation (1.3) shows all financial development variables as well as control variables.

$$GDP_{it} = \alpha_0 + \beta_1 LLY_{it} + \beta_2 SMCP_{it} + \beta_3 CACT_{it} + \beta_4 DCPS_{it} + \beta_5 SMTR_{it} + \Upsilon_1 INFL_{it} + \Upsilon_2 FDI_{it} + \Upsilon_3 TROP_{it} + U_{it} \quad (1.3)$$

where:

GDP = Annual Gross domestic product (growth rate)
LLY = Ratio of Liquid liabilities to GDP
CACT = Commercial assets to central plus commercial assets to GDP ratio
DCPS = Ratio of Domestic credit to private sector to GDP
SMTR = Stock market turnover to GDP ratio
SMCP = Stock market capitalization to GDP ratio
FDI = Foreign direct investment % of GDP

INFL = Inflation annual percentage
TROP = Trade openness % of GDP

Data and Data Sources

Data is accumulated from five nations of BRICS, namely Brazil, Russia, India, China & South Africa, spanning the years 1990 to 2019. This research relies on information extracted from the published data of the World Bank in the source of world development indicators and the global financial development database.

Results and Discussion

Table 1

Descriptive Statistics

Variable	GDP	LLY	SMCP	SMTR	CACT	DCPS	INFL	FDI	TROP
Mean	4.170	64.39	69.743	89.936	0.877	73.648	79.386	2.037	41.715
Std.	4.690	43.428	70.334	89.378	0.123	45.965	348.978	1.509	15.799
Min	-14.530	11.464	0.012	4.158	0.544	8.335	-1.401	-0.066	15.162
Max	14.231	197.99	328.360	556.912	0.995	160.125	2947.73	6.187	110.57
Obs	150	150	150	150	150	150	150	150	150

Note: This table represents the result taken from the stata software.

Descriptive statistics describe the total number of observations in 150 of 5 countries for 30 years. Maximum and minimum values of GDP depict the best or worst economic growth of the BRICS economy under this research. The maximum value of the GDP growth rate is 14.231, while it remains at a minimum of -14.530. The average value of GDP growth is 4.170. The average domestic credit to the private sector is 73.648, where the average values of stock market turnover and stock market capitalization are 89.936 and 69.743, respectively. The lowest value of standard deviation is 0.123, which pertains to commercial assets to commercial plus total assets, and the highest value is 348.978, which shows the inflation deviation due to too high inflation in Russia (Soviet Union).

Table 2

Variance inflation factor

Variables	VIF	1/VIF
DCPS	5.485	.182
SMCP	4.820	.207
LLY	3.975	.252
CACT	2.718	.368
SMTR	1.586	.63
INFL	1.519	.658
TROP	1.3	.769
FDI	1.296	.772
Mean VIF	2.838	.

Note: This table represents the result from the stata.

A variance inflation factor roots out the issue of multicollinearity in a regression analysis. The minimum variance inflation factor has been witnessed in foreign direct investment, which reveals only 1.296, and the highest is 5.485 in domestic credit to the private sector. The overall mean of the variance inflation factor is 2.838, which reveals that there is no issue of multicollinearity.

Table 3

Panel Unit Root Test at level

Variables	Z statistics	P-value
GDP	7.448	0.000
LLY	39.557	0.000
SMCP	29.325	0.000

Variables	Z statistics	P-value
SMTR	6.978	0.000
DCPS	25.365	0.000
CACT	26.759	0.000
INFL	12.912	0.000
FDI	12.299	0.000
TROP	18.031	0.000

Note: This table represents the result taken from the stata software

To check the stationarity of the data, Hadri (2000) proposes a residual-based LM test (Lagrange Multiplier) for each variable individually. The p values of the unit root test, as well as z statistics, are presented in Table 3. It can be analyzed that each variable is stationary at a level.

Table 4

Breusch-Pagan
Ho: Constant variance
Variables: LLY SMCP SMTR CACT DCPS INFL FDI TROP
chi2(8) = 56.89
Prob > chi2 = 0.0000

Note: This table represents the result taken from the stata software.

The Breusch-Pagan test is used to analyze whether there is any heteroscedasticity in the regression model. The result of the Breusch pagan test highlights the probability value 0.000, which rejects the null hypothesis, and either the random or fixed effect model should be preferred.

Table 5

Random Effect Results

GDP	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
LLY	.048	.015	3.27	.001	.019	.077	***
SMCP	-.002	.01	-0.22	.826	-.022	.017	
SMTR	-.006	.005	-1.39	.164	-.015	.003	
CACT	5.644	4.292	1.32	.188	-2.767	14.055	
DCPS	-.009	.016	-0.55	.582	-.041	.023	
INFL	-.001	.001	-0.53	.593	-.003	.002	
FDI	.563	.243	2.32	.02	.088	1.038	**
TROP	-.025	.023	-1.08	.281	-.07	.02	
Constant	-2.554	3.406	-0.75	.453	-9.23	4.122	
Mean dep variable		4.170		SD dep variable		4.691	
Overall (R^2) r-squared		0.338		No. of obs.		150	
Chi-square		71.949		Prob > chi2		0.000	
R-squared (R^2) within		0.055		R-squared (R^2)between		0.804	

*** p<.01, ** p<.05, * p<.1

Table 5 shows the random effect results, which highlight a positive and statistically significant correlation between the indicators of financial development and economic growth. According to the random effects, liquid liability and foreign direct investment show significant and positive results.

Table 6

Fixed Effect Results

GDP	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval	Sig
LLY	-.034	.017	-1.99	.048	-.068	0	**
SMCP	.018	.011	1.72	.087	-.003	.039	*
SMTR	-.015	.004	-4.11	0.000	-.023	-.008	***

GDP	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval	Sig
CACT	.104	3.662	0.03	.977	-7.137	7.346	
DCPS	.022	.021	1.05	.296	-.02	.064	
INFL	0	.001	-0.44	.661	-.002	.002	
FDI	.675	.24	2.82	.006	.201	1.149	***
TROP	-.031	.028	-1.12	.263	-.086	.024	
Constant	4.694	2.968	1.58	.116	-1.175	10.564	
Mean dep variable		4.170		SD dep variable		4.691	
(R^2) r-squared		0.256		No. of obs.		150	
F-test		5.896		Prob. > F		0.000	

*** p<.01, ** p<.05, * p<.1

Table 7

Hausman Test

	Coef.
Chi-square value	1747.961
P-value	0

Note: Hausman test from the stata software.

In Table 6, under the fixed effects approach, similar to Shahbaz et al. (2017), stock market capitalization is positively and significantly correlated with economic development in BRICS by showing a p-value of 0.087. Commercial bank assets and domestic credit to the private sector, having p-values of 0.977 and 0.296, respectively, are also positively correlated but are insignificant. On the other hand, the probability value of liquid liabilities, i.e. 0.048 and stock market turnover, i.e. 0.000, have a significant and negative impact on economic growth that is consistent with Asteriou and Spanos (2019). Foreign direct investment is the only significant control variable that has a positive impact on economic growth, while inflation and trade openness have produced insignificant results. The p-value of the Hausman test in Table 7 decides whether to choose the fixed effect model.

Table 8

Fixed Effect Results

GDP	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
LLY	-.035	.017	-2.02	.046	-.069	-.001	**
SMCP	.019	.011	1.78	.077	-.002	.041	*
SMTR	-.015	.004	-4.02	0.000	-.023	-.008	***
CACT	-.017	3.71	-0.00	.996	-7.358	7.324	
DCPS	.024	.022	1.12	.267	-.019	.067	
INFL	0	.001	-0.28	.777	-.002	.002	
FDI	.835	.255	3.28	.001	.332	1.342	***
TROP	-.027	.028	-0.95	.344	-.083	.029	
dLLY	.928	.744	1.25	.215	-.545	2.4	
dSMCP	.509	.446	1.14	.256	-.373	1.39	
dSMTR	-.40	.308	-1.30	.196	-1.009	.209	
dCACT	-36.133	34.131	-1.06	.292	-103.662	31.397	
dDCPS	-.503	.457	-1.10	.274	-1.408	.402	
dINFL	5.603	4.463	1.26	.212	-3.228	14.434	
dFDI	-4.095	3.572	-1.15	.254	-11.161	2.972	
dTROP	-1.065	.786	-1.35	.178	-2.621	.491	
Constant	4.225	3.017	1.40	.164	-1.744	10.194	
Mean dep variable		4.170		SD dep variable		4.691	
(R^2) r-squared		0.300		No. of obs.		150	
F-test		3.451		Prob. > F		0.000	

*** p<.01, ** p<.05, * p<.1

In Table 8, before the interaction of crisis under the fixed effects approach, similar to Shahbaz et al. (2017), stock market capitalization is the only variable positively and significantly correlated with economic development in BRICS by showing the p-value 0.077 with a positive coefficient value 0.019. Commercial bank assets and domestic credit to the private sector having p-values of 0.996 and 0.267, respectively, are insignificant. On the other hand, the interaction effect during the subprime crisis period highlights that the liquid liabilities and stock market capitalization have a positive impact on economic growth but are insignificant.

Table 9

Fixed Effect Results

GDP	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
LLY	-.058	.027	-2.16	.032	-.111	-.005	**
SMCP	.059	.015	3.79	0	.028	.089	***
SMTR	-.018	.004	-4.18	0	-.026	-.009	***
CACT	-.844	4.846	-0.17	.862	-10.433	8.745	
DCPS	.035	.022	1.60	.113	-.009	.079	
Inf	0	.001	-0.43	.667	-.002	.001	
FDI	.772	.268	2.88	.005	.241	1.303	***
TRO	-.017	.026	-0.64	.525	-.069	.035	
dLLY	-.027	.03	-0.91	.363	-.086	.032	
dSMCP	-.046	.022	-2.11	.037	-.089	-.003	**
dSMTR	.016	.009	1.77	.08	-.002	.033	*
dCACT	2.089	3.796	0.55	.583	-5.422	9.6	
dDCPS	.009	.031	0.30	.762	-.052	.071	
dInf	-.329	.161	-2.05	.043	-.647	-.011	**
dFDI	-.252	.458	-0.55	.582	-1.158	.654	
dTRO	.054	.06	0.91	.367	-.064	.172	
Constant	3.702	3.786	0.98	.33	-3.788	11.192	
Mean dep variable		4.170		SD dep variable		4.691	
(R^2) r-squared		0.418		No. of obs.		150	
F-test		5.790		Prob. > F		0.000	

*** p<.01, ** p<.05, * p<.1

In Table 9, under the fixed effects approach of the pre-ongoing crisis period, similar to Shahbaz et al. (2017), stock market capitalization is positively and significantly correlated with economic development in BRICS countries by showing a p-value 0.000 with a positive coefficient value of 0.059. On the other hand, the probability value of liquid liabilities, i.e. 0.032 and stock market turnover 0.000, also have a significant and negative impact in the pre-ongoing crisis period on economic growth that is consistent with Asteriou and Spanos (2019). Stock market turnover is the only significant factor in the ongoing crisis period, with a p-value of 0.08, which has a positive impact on economic growth, while stock market capitalization has a significantly negative impact on growth. The interaction effect during an ongoing crisis period highlights that domestic credit to the private sector has a positive impact on economic growth but is insignificant.

Conclusion

The study conducted empirical analysis in light of external shocks brought on by the mortgage crisis to investigate and figure out how financial development affects economic growth. The FE findings indicate that without incorporating the crisis effect in the model, stock market capitalization creates positive and significant effects on economic growth. However, during the crisis period, financial developments adversely impacted economic growth. Economic growth is hampered by the expansion of the banking sector development, especially during times of financial crisis. Market turnover, commercial banks' assets ratio and the ratio of domestic credit to private sector slow down and damage the growth.

It is further evident in the ongoing crisis period that stock market turnover is the factor that supports the economy to grow positively. Finally, it is concluded that in a long period of crisis, stock market turnover would be robust to move the economy forward.

This paper explores key indicators characterising the progress in the financial sector. It comprehensively covers both the banking sector domain and the stock market domain. The study focuses on two prominent indicators of the stock market domain: firstly, stock market capitalization and market turnover. It has been observed that measures of stock market development have a considerable impact on growth. The results of this research, on the other hand, show that stock market indicators have a significant influence on economic growth in the banking sector. The findings could be useful to policymakers in order to optimise the economic growth that has been hampered by the crisis. The appropriate mode of financial support is required for any economy to stabilize itself in a crisis.

Limitations and Recommendations

The present research can be extended in different ways.

- Take measures for financial development that go beyond simple indicators. Take into account qualitative elements like institutional effectiveness, financial inclusivity, and regulatory frameworks.
- Incorporate more developed and developing economies into the analysis. Analyse the reactions of various economic structures to financial crises.
- Examine the precise mechanisms by which financial crises impede economic expansion. Examine elements like investor confidence, credit freezes, and policy reactions during times of crisis.
- Examine and determine the variables that serve as stabilising forces in times of financial crisis. Evaluate how well policy interventions work, how resilient financial institutions are, and how flexible economic structures are.
- Use advanced time series analysis to show how the relationship is dynamic. To track changes and trends in the relationship over time, conduct longitudinal studies.
- Acknowledge how institutional and cultural variations affect crisis management. Analyse how institutional frameworks and cultural aspects affect public trust and the efficacy of policies during times of crisis.

Future studies can develop a more sophisticated understanding of the intricate connection between financial development, economic growth, and crisis dynamics across a wide range of economies by addressing these points.

References

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. https://doi.org/10.1016/j.frl.2018.05.011

Beck, T., & Levine, R. (2004). Stock markets, banks, and growth: Panel evidence. *Journal of Banking & Finance*, *28*(3), 423-442. https://doi.org/10.1016/s0378-4266(02)00408-9

Bojanic, A. N. (2012). The impact of financial development and trade on the economic growth of Bolivia. *Journal of Applied Economics*, *15*(1), 51-70. https://doi.org/10.1016/s1514-0326(12)60003-8

Brambor, T., Clark, W. R., & Golder, M. (2006). Understanding interaction models: Improving empirical analyses. *Political Analysis*, *14*(1), 63-82. https://doi.org/10.1093/pan/mpi014

Choong, C. K., & Chan, S. G. (2011). Financial development and economic growth: A review. *Global Journal of Business Management*, *9*(6), 1-011. https://www.globalscienceresearchjournals.org/articles/financial-development-and-economic-growth-a-review.pdf

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. https://doi.org/10.1016/s0304-3878(96)00421-x

Diamond, D. W. (1984). Financial intermediation and delegated monitoring. *The Review of Economic Studies*, *51*(3), 393. https://doi.org/10.2307/2297430

Fink, G., Haiss, P., & Vukšić, G. (2009). Contribution of financial market segments at different stages of development: Transition, cohesion and mature economies compared. *Journal of Financial Stability*, *5*(4), 431-455. https://doi.org/10.1016/j.jfs.2008.05.002

Goldsmith, R. W. (1969). *Financial Structure and Development: New Haven and London*: Yale University Press.

Guru, B. K., & Yadav, I. S. (2019). Financial development and economic growth: Panel evidence from BRICS. *Journal of Economics, Finance and Administrative Science*, *24*(47), 113-126. https://doi.org/10.1108/jefas-12-2017-0125

Hsiao, C. (2003). *Analysis of Panel Data*, New York: Cambridge University Press.

Kalu, K., & Wang, H. (2019). Financial Market Structure and Finance-Growth Relationships in the BRICS. *International Journal of Business and Economics*, *4*(1), 58-70.

Kandil, M., Shahbaz, M., Mahalik, M. K., & Nguyen, D. K. (2017). The drivers of economic growth in China and India: Globalization or financial development? *International Journal of Development Issues*, *16*(1), 54-84. https://doi.org/10.1108/ijdi-06-2016-0036

Levine, R., & Zervos, S. (1998). Capital control liberalization and stock market development. *World Development*, *26*(7), 1169-1183. https://doi.org/10.1016/s0305-750x(98)00046-1

Lucas, R. E. (1988). On the mechanics of economic development. *Journal of Monetary Economics*, *22*(1), 3-42. https://doi.org/10.1016/0304-3932(88)90168-7

Masoud, N., & Hardaker, G. (2012). The impact of financial development on economic growth: Empirical analysis of emerging market countries. *Studies in Economics and Finance*, *29*(3), 148-173. https://doi.org/10.1108/10867371211246830

Mckinnon, R. I. (1973). *Money and Capital in Economic Development*: Washington, DC: The Brookings Institution.

Osaseri, G., & Osamwonyi, I. O. (2018). Impact of stock market development on economic growth in BRICS. *International Journal of Financial Research*, *10*(1), 23-30. https://doi.org/10.5430/ijfr.v10n1p23

Rajan, R. G., & Zingales, L. (2003). The great reversals: The politics of financial development in the twentieth century. *Journal of Financial Economics*, *69*(1), 5-50. https://doi.org/10.1016/s0304-405x(03)00125-9

Robinson, J. (1952). The model of an expanding economy. *The Economic Journal*, *62*(245), 42-53. https://doi.org/10.2307/2227172

Saci, K., Giorgioni, G., & Holden, K. (2009). Does financial development affect growth? *Applied Economics*, *41*(13), 1701-1707. https://doi.org/10.1080/00036840701335538

Schumpeter, J. A. (1934). *The Theory of Economic Development... by Joseph A. Schumpeter, Translated from the German by Redvers Opie...* Harvard University Press.

Shan, J. (2005). Does financial development 'lead' economic growth? A vector auto-regression appraisal. *Applied Economics*, *37*(12), 1353-1367. https://doi.org/10.1080/00036840500118762

Shen, C., & Lee, C. (2006). Same financial development yet different economic growth--why? *Journal of Money, Credit, and Banking*, *38*(7), 1907-1944. https://doi.org/10.1353/mcb.2006.0095

Stiglitz, J. E., & Weiss, A. (1983). Incentive Effects of Terminations: Applications to the Credit and Labor Markets. *The American Economic Review*, *73*(5), 912–927. https://doi.org/10.7916/d80k2kjv

Tsaurai, K. (2021). The Relationship between Mining, Financial Development and Growth. A Case of BRICS: Array. *Acta Universitatis Danubius. Œconomica*, *17*(2). https://dj.univ-danubius.ro/index.php/AUDOE/article/view/675

UNCTAD. (2015). *World investment report*. New York: United Nations.

UNDP. (2014). *United Nations Development Programme*, Human Development Report.