Critical Analysis of the Credit Market Development Effects to the Economic Growth: Evidence from Tanzania

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Abstract

Recent literature evidence explores that the Tanzania Financial Markets and Economic Growth of Tanzania is negative and opposite related to each other. However, the Tanzania credit market development effects to economic growth have never been studied in Tanzania. The present study is undertaken to investigate the credit market development effects to the economic growth during the period from 2010 to 2017 in Tanzania. To meet the desired study's objectives the study applied Statistical Method under the SPSS Program to investigate the direction of causality between economic growth and credit market development during the period from 2010 to 2017 in Tanzania. Linear regression and correlation methods were both used to analyse the relationship between dependent variable and independent variables and obtaining necessary coefficients for determining the regression equation. Findings of the study were in actual fact very interesting. The study findings revealed that there is a positive and significant relationship between the inflation rate and the economic growth, while the correlation between the exchange rate and the economic growth is negative and meaningless during the period from 2010 to 2017 in Tanzania.

Key Words: Tanzania, credit market development, economic growth.

Introduction:

Literatures have in detail elaborate, clarify and explain the characteristics and components of the financial markets. European Central Bank Report (2001) clearly provides the definition of the financial markets and its core components, thus the report stated that, "The financial system comprises all financial markets, instruments and institutions".

Findings of different studies have well identified the significance of the financial credit markets for the economic development and prosperity of the nation at large. Among the authors who contributed on the importance of the financial credit markets is Jag dish, (2018) who insisted that the financial credit market is the core and important since it stimulates the economy of the country. Jag dish (2018) argued that, "According to King and Levine (1993a), financial development stimulates economic growth by increasing the rate of capital accumulation".

Many Tanzania literatures supported the findings that the Tanzania financial market has a negative impact on Tanzania economic growth. Regarding this serious study findings, it is must for the country to take necessary initiative to investigate the fundamental source of that insignificant relationship between those important economic indicators variables of Tanzania. In Tanzania, regardless of the negative impact of the financial markets to the economic growth yet the financial credit markets developments in Tanzania effects to the economic growth have never been studied. The present study will critically probe the effects of the financial markets developments to the economic growth of Tanzania. Mwang'onda et al, (2018) clarified that, "The impact of financial development on economic growth in Tanzania" revealed similar findings that; financial development has negative impact on economic growth".

On the way to strengthen the Tanzania financial markets it has been suggested to improve the flow of financial markets data availability to the whole public. By doing that, the Tanzania financial market will automatically be active and reliable for the financial markets stakeholders and eventually the economic development of Tanzania at large. Mwang'onda et al, (2018) highlighted the matter and clarified that, "Strengthening data availability on flow of credit from financial institutions to the public is necessary to materialize the effect of the financial sector in Tanzania".

Recent debate of the impact of the credit market financial development to the economy has been discussed with different literatures. Jag dish, (2018) on his article highlighted the matter and the findings of his study showed that the impact of the financial development on economic growth is positive to many countries. With this regard it is suggested to empower the financial markets for the sustainable economic development of any country. Jag dish, (2018) argued that, "The results also show the positive impact of financial development on economic growth in the majority of the countries".

Significance of the study:

Regarding the fact that recent literature evidence explores that the Tanzania financial markets and economic growth of the country is negatively and opposite related, the present study will contribute new knowledge concerning the effects of the financial capital markets development to the economic growth during the period from 2010 to 2017 in Tanzania. In particular the study investigates this relationship by considering the effect of inflation rate, bank lending and exchange rate to the economic growth during the period from 2010 to 2017 in Tanzania.

Motivation and Objective of the Study:

Recent literature evidence explores that the Tanzania financial markets and economic growth of the country is negatively and opposite related to each other. However the Tanzania credit market development effects to the economic growth have never been studied. With this regard the present study is undertaken to investigate in particular the credit market development effects to the economic growth in Tanzania. Mwang'onda et al, (2018) clarified that, "in both long-run and short-run, financial development exerts significant but negative effects on economic growth contrary to our expectations".

Many Tanzania literatures supported the findings that the Tanzania financial market has a negative impact on Tanzania economic growth. Regarding this serious study findings, it is must for the country to take necessary initiative to investigate the fundamental source of that insignificant relationship between those important economic indicators variables of Tanzania. In Tanzania, regardless of the negative impact of the financial markets to the economic growth yet the financial credit markets developments in Tanzania effects to the economic growth have never been studied. The present study will critically probe the effects of the financial markets developments to the economic growth of Tanzania. Mwang'onda et al, (2018) clarified that, "The impact of financial development on economic growth in Tanzania" revealed similar findings that; financial development has negative impact on economic growth".

In Tanzania despite the fact that literature evidence manifests that Financial markets have a negative and opposite impact to the economic growth of the country, no studies have been undertaken to investigate the financial market development effects to Tanzania economic growth. The present study is undertaken to evaluate the effects of the financial capital markets development to the economic growth during the period from 2010 to 2017 in Tanzania.

Objective of the Study:

The present study is undertaken to investigate the effects of the financial capital markets development to the economic growth during the period from 2010 to 2017 in Tanzania. In particular the study investigates this relationship by considering the effect of inflation rate, bank lending and exchange rate to the economic growth during the period from 2010 to 2017 in Tanzania.

Literature Review:

Recent literature evidence explores that the Tanzania financial markets and economic growth of the country is negatively and opposite related. However the Tanzania credit market development effects to the economic growth have never been studied. With this regard the present study is undertaken to investigate in particular the credit market development effects to the economic growth in Tanzania. Mwang'onda et al, (2018) clarified that, "in both long-run and short-run, financial development exerts significant but negative effects on economic growth contrary to our expectations".

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On the way to strengthen the Tanzania financial markets it has been suggested to improve the flow of financial markets data availability to the whole public. By doing that, the Tanzania financial market will automatically be active and reliable for the financial markets stakeholders and eventually the economic development of Tanzania at large. Mwang'onda et al, (2018) highlighted the matter and clarified that, "Strengthening data availability on flow of credit from financial institutions to the public is necessary to materialize the effect of the financial sector in Tanzania".

Recent debate of the impact of the credit market financial development to the economy has been discussed with different literatures. Jag dish, (2018) on his article highlighted the matter and the findings of his study showed that the impact of the financial development on economic growth is positive to many countries. With this regard it is suggested to empower the financial markets for the sustainable economic development of any country. Jag dish, (2018) argued that, "The results also show the positive impact of financial development on economic growth in the majority of the countries".

Literature evidence revealed that for the strong, reliable and sustainable economic development of any country it is a must to initiate, develop and restore the credible financial markets as a core driver of the economy. In addition to that, literature evidence insists that in many countries the correlation between the financial credit markets and the economic growth and development at larger has not been well addressed. Jag dish, (2018) argued that, "A well-functioning financial system is considered as one of the key foundations on which sustained economic development can be built. However, there is no consensus on the relationship between financial development and economic growth".

Findings of different studies have well identified the significance of the financial credit markets for the economic development and prosperity of the nation at large. Among the authors who contributed on the importance of the financial credit markets is Jag dish, (2018) who insisted that the financial credit market is the core and important since it stimulates the economy of the country. Jag dish, (2018) argued that, "According to King and Levine (1993a), financial development stimulates economic growth by increasing the rate of capital accumulation".

In the financial credit markets development and economic development of many countries it is suggested that there is existing strong correlation between these fundamental economic variables of any country economy. With this regard financial credit market developments and economic growth are essential and mutually depend on each other. Jag dish, (2018) discussed the matter in detail and argued that; "The study revealed that there exists a long-run co-integrating relationship between financial development and economic growth in low-income countries".

The East Africa Regional Financial markets and its effects to the economic growth to the regional have been emphasized by different literatures. Literature evidence manifests that the financial markets have significant role and importance to the whole region of East Africa in terms of supporting the economic development of the whole region. Muhoga et al, (2013) discussed the matter and said that, "Results showed that regional financial integration significantly affects intraregional trade in the EAC ".

The role and importance of the financial markets to the East African Community have been discussed and emphasized. It has been pointed out that the regional financial parameters and arrangement stand as a strong base to support the whole economic developments of the regional for sustainable and reliable economic prosperity. Muhoga et al, (2013) discussed the matter and said that, "Regional financial arrangements have become a popular vehicle for the promotion of trade and growth".

The structure of Tanzania in terms of economy, politically and socially manifests that the country is free market economy state with multipartism democracy. Having the free market economy the role and significance of the credit market financial developments to economic growth remain the fundamental of the economy and prosperity of the nation at large. Wobst, (2001) clarified well and stated that; "Tanzania has experienced a transition from a one-party, socialist system with a centralized economy to a multiparty democracy with a free market economy".

The Tanzania financial markets pillars and indicators have been discussed and highlighted how stimulate the Tanzania economy. In particular Ndanshau & Kilindo (2012) insisted that interest rates for the Tanzania financial markets is essential in a way it can create the room to sustainable savings for the financial markets and country at large, they stated that, "the results are in support of the interest rates liberalization policy and real interest rate strategy used to enhance saving in Tanzania".

The Tanzania financial markets data revealed that the correlation among the key economic variables including the interest rates and the inflation is positive and significant for the market which basically is the good indicator for Tanzania economic growth and prosperity. Ndanshau & Kilindo (2012) insisted that, "the results show that the effect of both nominal interest rate and inflation on saving is positive as predicted in theory".

Literatures have in detail elaborate, clarify and explain the characteristics and components of the financial markets. European Central Bank Report (2001), clearly provides the definition of the financial markets and its core components, thus the report stated that, "The financial system comprises all financial markets, instruments and institutions".

The significance and role of the financial markets for Tanzania's economic prosperity have been discussed since the author maintains that the financial system is crucially significant for the economic growth of any nation. European Central Bank Report (2001) reported that, "Other economists strongly believe in the importance of the financial system for economic growth".

Research Methodology:

The present study is undertaken to investigate the effects of the financial capital markets development to the economic growth during the period from 2010 to 2017 in Tanzania. In particular the study investigates this relationship by considering the effect of inflation rate, bank lending and exchange rate to the economic growth during the period from 2010 to 2017 in Tanzania.

The methodology of our research is mainly the statistical method using SPSS v.20 program. Specifically, we use a linear regression method. Additionally, both the correlation between dependent variable and independent variables, and the necessary coefficients for determining the regression equation were analysed and well-studied. In the present and the perceived industrialised-led economy for Tanzania to be the middle level economy country and by considering economical-financial crises on the world wide level, for Tanzania economy, the banking sector has a great importance, being a key factor for supporting economic growth.

In this study, annual data offered by the Bank of Tanzania for the period 2010–2017 were used. As a research method, backward method of linear regression was employed using SPSS (Statistical Package for the Social Sciences) version 20 program.

The variables applied included the following:

a. Dependent Variable:

-Economic growth rate (real annual growth rate of GDP) for what was verified the correlation as dependent variable;

b. Independent or predictor Variables:

-The total Credit, the average exchange rate TZS/USD and inflation rate, as independent variables.

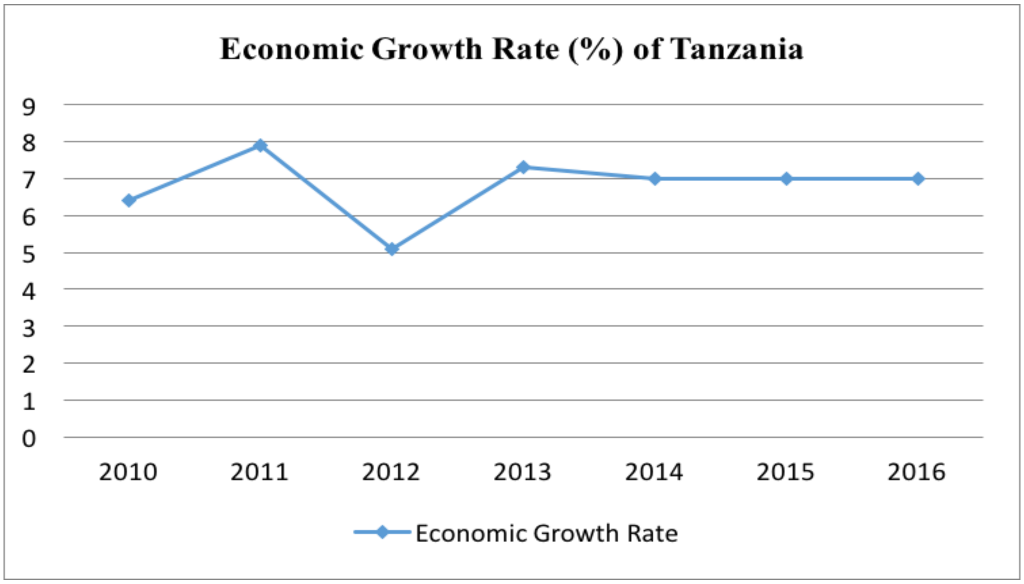

Fig 1 Economic Growth Rate in Tanzania, Annual Evolution 2010–2016

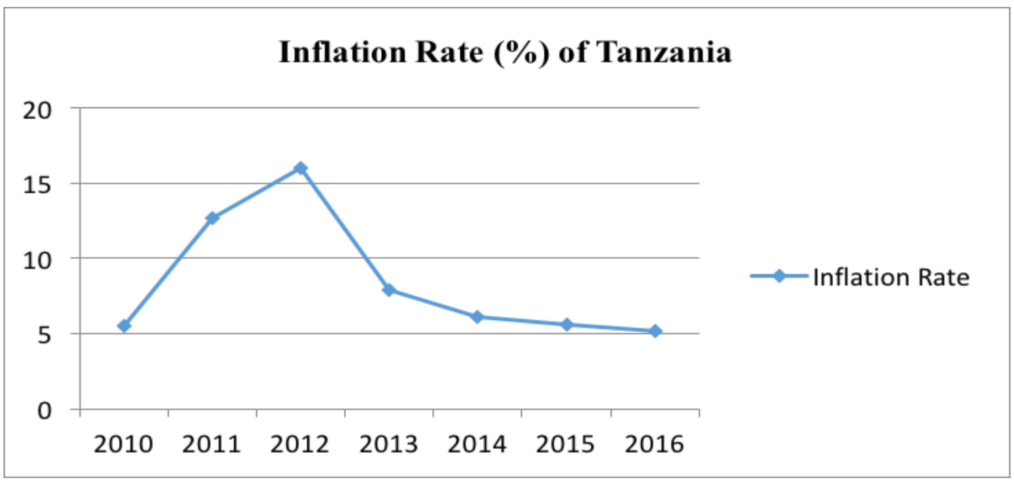

Fig 2 Inflation Rate in Tanzania, Annual Evolution 2010-2016

In the figure 3 is presented the histogram for the dependent variable. A histogram is a graphical representation of data frequency. In addition to this representation, the normal distribution line is also put above the histogram. Finally, the P-P residual graph is generated (Figure) for concluding if the regression method is suitable or not.

Results and discussions:

The Pearson's correlation coefficients are between –1 and 1, the positive values indicate a direct correlation, while a negative value indicates an inverse correlation. The correlation coefficient (Pearson) indicates a stronger correlation as its value is approaching the 1 value. Furthermore, the significance has to be lower than 0.05 to express a good accuracy (DeBarros, 2018). Analysing the results from the Table 1, for all observations, the correlation coefficients have negative values between economic growth rate, total credit value in million USD and average exchange rate, indicating an opposite correlations between the economic growth rate, total credit value in million USD and average exchange rate (when one variable grows, the others decrease). These results were consistent with Beck and Levine (2004), Favara (2003) , Loayza and Ranciere, (2006), Saci et al, (2009) and contradicts those of Berthelemy and Varoudakis (1996), Levine (1998), Beck and Levine (2004) and Javed et al (2014). Meanwhile, a positive correlation between inflation and economic growth has been observed, meaning that the inflation rates have contributed positively to economic growth of Tanzania.

The Linear Regression- Relationship between the Economic Growth Rate and the Others Indicators:

The linear regression is based on the calculation of the correlation coefficient for the all the variables group, the correlation between the dependent variable and the others independent variables being analysed. If the correlation coefficient has a value approaching 1, this means that the correlation is strong. The aim of using the linear regression is to determine what impact on the economic growth has the independent variables such as:

i. Total credit mil USD;
ii. Average rate exchange TZS/USD;
iii. Inflation Rate.

The optimal method used for the linear regression model is the backward method, which is based on the elimination, at every step of iteration, of the independent variable which has the weakest influence on the dependent variable. None of the independent variables were removed, as it is shown in Table 2. From Table 3, there can be observed that among the variables, it is a good correlation, but not very strong, because the correlation coefficient is 0.681. In addition to this value, none of the independent variables have been removed, so all these variables have a significative influence on economic growth.

The significance is below 0.05, which means that there are small errors determined by chance. As a remark, the total credit influence on the economic growth is not good (sig.=.340), and the tolerance is 0.958, greater than 1-Adjusted R square (1–0.048=0.952), which eliminates the un-collinearity risk. VIF (Variance Inflation Factor = 1/Tolerance) also helps for the collinearity analysis, being able to warn about an uncollinearity situation if its value has a greater value than 6.

Table 1 The correlation coefficients and the significance for the dependent and independent variables

Correlations					
		Economic Growth Rate	Inflation Rate	Total Credit	Average Exchange Rate TZS/USD
Pearson Correlation	Economic Growth Rate	1	.283	-.174	-.607
	Inflation Rate	.243	1	.171	-.742*
	Total Credit	-.174	.171	1	-.052
	Average Exchange Rate TZS/USD	-.607	-.742*	-.052	1
Sig. (1-tailed)	Economic Growth Rate	-	.249	.340	.055
	Inflation Rate	.249	-	.343	.018
	Total Credit	.340	.343	-	.452
	Average Exchange Rate TZS/USD	.055	.018	.452	-
N	Economic Growth Rate	8	8	8	8
	Inflation Rate	8	8	8	8
	Total Credit	8	8	8	8
	Average Exchange Rate TZS/USD	8	8	8	8

*. Correlation is significant at the 0.05 level (1-tailed).

Table 2 The backward method

Variables Entered/Removed [a]			
Model	Variables Entered	Variables Removed	Method
1	Exchange Rate, Total Credit, Inflation rate [b]	.	Enter
a. Dependent Variable: Economic Growth Rate			
b. All requested variables entered.			

Table 3 The correlation coefficient

Model Summary [b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.675 [a]	.456	.048	.84547
a. Predictors: (Constant), Exchange Rate, Total Credit, Inflation rate				
b. Dependent Variable: Economic Growth Rate				

Table 4 The linear regression coefficients

Coefficients [a]							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	11.571	3.522		3.286	.030		
Inflation Rate	-.065	.112	-.325	-.580	.593	.432	2.315
Total Credit	-1.747E-005	.000	-.163	-.431	.688	.958	1.043
Average Exchange Rate TZS/USD	-.002	.001	-.857	-1.548	.197	.444	2.253
a. Dependent Variable: Economic Growth Rate							

In our case, VIF is 1.0504, which also eliminates the uncollinearity risk. Thus, using the coefficients calculated (column B – Table 4), the linear regression equation obtained is: Economic Growth Rate = –0.002 x Average Exchange Rate – 0.065 x Inflation Rate – 1.747x10^{-5} x Total Credit. The histogram obtained is:

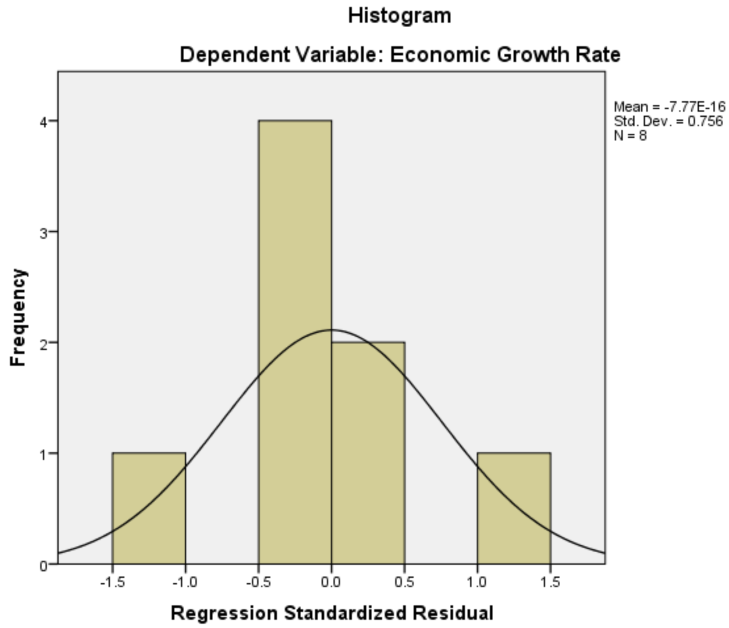

Fig 3 Histogram.

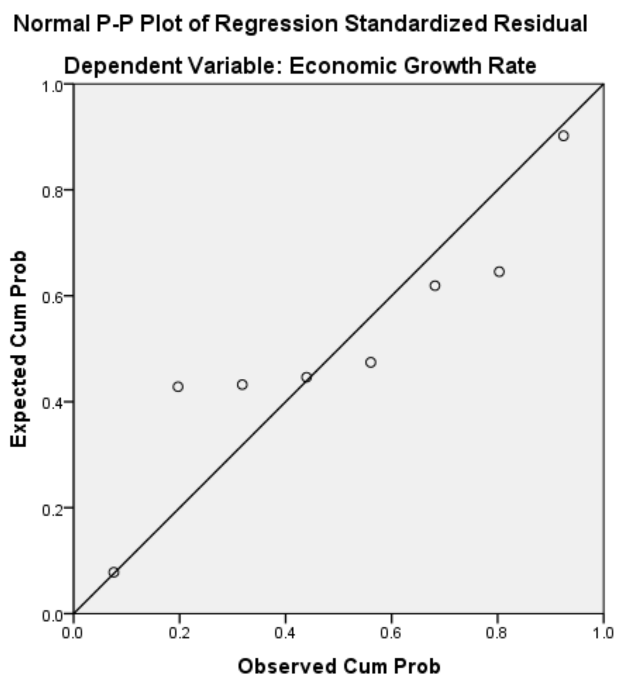

Fig 4 P-P Standard Residuals Graph

In Figure 3 and Figure 4 were represented the residuals by comparing them with the normal distribution law. A residual is an observable estimate of the unobservable statistical error.

The residuals generally comply with the normal distribution law (an empirical analysis based on the comparison of the curve - Figure 3 and of the points near the line - Figure 4). Thus the linear regression model can be applied for the data analysed. As an observation, for the 0.2-0.9 interval the residuals do not comply with the normal distribution law, so on this interval the errors can be higher.

The interpretation of coefficients from regression equation points out that, considering data for the period 2010 -2017, on a short period of time, it is expressed the following correlations:

- If average exchange rate increases with one point, then economic growth rate decreases with 0.002 percent.
- If inflation rate increases with one percent, then economic growth rate decreases with 0.065 percent.
- If total credit value increases with 1 million USD, then economic growth rate decreases with 1.747×10^{-5} percent.

Therefore, the answer to the question" what is the direction of the causality relation between economic growth and credit market development?" in Tanzania is that the growth of private credit and average rate exchange rate do not encourage economic growth, leading to a relative decline in the economic growth rates while inflation rate encourages economic growth.

This conclusion is the opposite to that of Cristea et. al in 2010 when they analysed the direction of causality between economic growth and credit market development in Romania for the period 2001–2009 using quarterly data and with that obtained by Koivu in 2002 when he analysed the relationship between credit market and economic growth in 25 countries in transition, including Romania, and he invalidated previous theories which sustained the direct causality relation between credit market and economic growth.

Consequently, in the short term, credit activity and the evolution of average exchange rate in Tanzania have to be under control in order not to influence the negative economic growth in our country while the inflation rates should be stabilised to where it is for attracting economic growth.

Summary of Study Findings:

The study findings revealed that there is a positive and significant relationship between the inflation rate and the economic growth, while the correlation between the exchange rate and the economic growth is negative and meaningless during the period from 2010 to 2017 in Tanzania.

Limitation of the Study:

The present study did not manage to identify the quantity of effects for Capital Market Development to the economic growth during the period from 2010 to 2017 in Tanzania.

Conclusions:

The present study is undertaken to investigate the credit market development effects to the economic growth during the period from 2010 to 2017 in Tanzania.

Regarding the fact that recent literature evidence explores that the Tanzania financial markets and economic growth of the country is negatively and opposite related, the present study will contribute new knowledge concerning the effects of the financial capital markets development to the economic growth during the period from 2010 to 2017 in Tanzania. In particular the study investigates this relationship by considering the effect of inflation rate, bank lending and exchange rate to the economic growth during the period from 2010 to 2017 in Tanzania.

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