



Financial innovation and economic growth in Cameroon



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ABSTRACT

This study assessed the impact of financial innovation on the economic growth prospects of Cameroon. The study adopted domestic credit to private sector (DCP), the ratio of broad money as a percentage of GDP (M2) and mobile banking (MB) penetration as the three proxies for financial innovation. Gross domestic product per capita growth (GDPPCG) is used as an indicator of economic growth. The autoregressive distributed lag (ARDL) model was used to test the degree of relationship that exists between financial innovation and economic growth in Cameroon. Bounds test of co-integration provided high *F*-values for the innovation proxies. Long run estimations showed positive correlations, however DCP and M2 had negative coefficients in the short run. Financial innovation contributes to economic growth in Cameroon in the long run.

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INTRODUCTION

Over the past decade, African countries have experienced positive economic growth; in fact, The Times UK (2017) reported a 4.7 percent per annum growth. There is an increase in financial services including efficient financial transfers and increasing volume of trade (Maimbo et al., 2010). Napier (2010) stated that financial innovations foster growth of the financial sector in Africa. In Cameroon, mobile cellular subscription rate was slightly over 19 million in 2018 (World Bank, 2018). This in turn increased mobile financial services, and the Fin Scope Consumer Survey 2018 report indicated that 48% of adults in Cameroon use formal financial services. This increase in financial services is imperative for economic growth in the country. Mwinzi (2014) study demonstrated that mobile transactions have a positive impact on economic growth.

Globally, studies have indicated that financial

innovation stimulates economic growth (Qamruzzaman and Jianguo, 2017; Bara and Mudzingiri, 2016; Lumpkin, 2010; Michalopoulos et al., 2009; Ahmed, 2006). Idun and Aboagye (2014) found a negative relationship between financial innovation and economic growth in Ghana in the long run. Financial innovation can also cause long-lasting economic problems (Kotsemir and Abroskin, 2013) and inefficient financial innovation can harm the overall economy (Beck et al., 2014). Research within the context of Cameroon found a positive relationship between financial development and economic growth (Puatwoe and Piabuo, 2017; Mandiefe, 2015; Tabi et al., 2011; Djoumessi, 2009) but none of these studies gauged for financial innovations. Michalopoulos et al. (2009) asserted that economies without financial innovation will stagnate regardless of their level of financial development.

This research study therefore bridges the gap of knowledge regarding the relationship between financial innovation and economic growth in Cameroon. It considers protracted time series data to establish adequate results and uses ARDL bounds testing

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techniques to ascertain the relationship between financial innovations and economic growth in Cameroon.

Cameroon is a member of the Economic Community of Central African States (CEMAC) and by default a member of the Bank of Central African States (BEAC). BEAC created the Commission Bancaire de L'Afrique Centrale (COBAC) which serves as the regulatory body of financial services in Cameroon. As of November 2018, there were 15 registered banks in Cameroon contributing to 85.4% of total assets of the financial sector and 19.8% of GDP. Cameroon is the largest economy in the Central African States with 62% of financial assets in the CEMAC region, a bulk of which comes from the banking sector. Domestic credit provided by the financial sector in 2017 was 16.62%, bank capital to asset ratio was 7.8% in 2017 and savings contributed to 16.4% of GDP in 2017.

This paper is therefore structured as follows: the first part is the introduction, the second part presents the relevant theoretical and empirical literature, then the data and methodology for the study is presented, the fourth part analyzes the results and the last part is the conclusion.

THEORETICAL AND EMPIRICAL LITERATURE REVIEW

Innovation is the adoption of a new idea (Damanpour, 1992). Frame and White (2009) defined financial innovation to include anything that contributes to cost reduction, mitigating risk, improved products and services and satisfies consumer wants and needs while Skillicorn (2016) defined financial innovation as 'Executing an idea which addresses a specific challenge and achieves value for both the company and customer'. Financial innovation is not bounded by inventions but constitutes other financial instruments such as credit scoring, data processing and financial reporting (Laeven et al., 2012). Financial innovation is induced by the changing nature of consumer wants and needs (Frame and white, 2009); it is born due to firms seeking to increase their profits by offering consumers with new products (Bilyk, 2006; Nelson and Winter 1982). There is not a specified measure of financial innovations so, researchers use proxy variables to measure it.

At the heart of financial innovation are financial institutions, they introduce products to serve the needs of their customers and hedge economic risk variables, such as, inflation and interest rates (Idun and Aboagye, 2014). Thus, the effectiveness of banking systems fosters economic growth (Demetriades and Andrianova, 2005). Schumpeter (1911) asserted the importance for efficient financial institutions in the innovation process and the role it plays in economic growth. The efficiency of financial institutions is crucial in the innovation process to guarantee quality of financial products (Conroy, 2013;

Shaughnessy, 2015). Financial institutions can assemble economic resources required for economic growth (Qamruzzaman and Jianguo, 2017).

Financial innovation has been a force for economic growth for centuries, in 1912 Joseph Alois Schumpeter in 'The Theory of Economic Development' emphasised the importance of financial institutions innovating to affect economic development (Mishra, 2008). Contrarily certain studies tend to undermine the role of financial innovation in economic growth and instead insinuate that financial systems are the underlying factors (Michalopoulos et al., 2009). Block (2002) New-Growth Theory stated that financial innovation is a function of factor inputs within an economy that spans across environments while Michalopoulos et al. (2009) argued that 'economies without financial innovation will stagnate, irrespective of their initial level of financial development'.

Financial innovation is thought to have both a good and a bad side to it, Arnaboldi and Rossibnoli (2013) referred to innovation as a double edged sword; stating that the right kind of innovation can condition banks to invest in technology that will create conducive conditions for banks to fulfil their role and intend promote economic growth. This is the case with countries such as the Philippines, Ghana, Kenya, where MB has provided a platform for financial inclusion, funds mobilization and an investment structure which contributes to economic growth (Prior and Santoma, 2010).

On the other hand, various authors have blamed the 2008 Global Financial crisis on innovation (Llewellyn, 2009; Allen, 2011). Beck et al. (2012) asserted that economic growth volatility is closely linked to external funding of financial innovations. Financial innovation products and processes of the twenty first century innovations introduced complexity which fosters increased market fragility (Gubler, 2011). The use of financial innovation has increasingly been a tool for economic destruction if it's used inefficiently (Beddoes, 2010).

In the developing world, mobile financial transactions have increased significantly; users can transfer funds, store cash and withdraw cash as required (Jonathan and Camilo, 2009). Mwinzi (2014) found mobile transactions have a major impact of economic growth in Kenya. Idun and Aboagye (2014) found a negative correlation between financial innovation and economic growth in the long-run and positive in the short-run in Ghana. Bara and Mudzingiri (2016) study on Zimbabwe illustrated that financial innovation has a positive relationship with economic growth. Bara et al. (2016) studied countries within the southern African development community and found a weak positive effect of financial innovation in the long run.

Studies within the confinement of Cameroon have focused mostly on financial development and economic growth (Puatwoe and Piabuo, 2017; Tabi et al., 2011;

Table 1. Variables used in the study.

Variables	Definition
Dependent variables	
GDPPCG	GDPPCG used as the economic growth indicator, which shows the percentage change in per capita GDP
Financial innovation Proxies	
MB	MB proxied by mobile penetration rate to account for the active number of mobile phone users per 100 people
DCP	DCP sector indicates the financial resources made available by the financial sector to businesses and households
M2	Broad money; a country's money supply including all coins and physical cash, interest as a percentage of GDP
Control variables	
GCF	Gross capital formation as a percentage of GDP measures the net increase of physical assets in the economy
CPI	Consumer price index to account for percentage change in general price level (Inflation)
TO	Trade openness is the total exports plus the total imports as a percentage of GDP
GFCE	Government final consumption expenditure which gauges government spending on goods and services which are for direct satisfaction of its citizens as a percentage of GDP

Djoumessi, 2009; Mandiefe, 2015). Their studies all found a positive relationship between financial development and economic growth. There is no study that has attempted to find the effect which financial innovation has on the economic growth of Cameroon.

DATA PRESENTATION

This study uses time series data from Cameroon between the period 1970 to 2018, sourced from the World Bank and the Central Bank for Central African States. The data was analysed using Eviews 9 econometric package.

The study uses three proxies for financial innovation, DCP sector (Bakang, 2016; Qamruzzaman and Jianguo, 2017) which are the financial resources made available to businesses and households by financial corporations. The second proxy is the ratio of broad money as percentage of GDP (M2) following (Ansong et al., 2011) and mobile penetration rate proxy for MB (Aker and Mbiti, 2010; Bara et al., 2016).

Gross domestic product per capita is used as the economic growth indicator (Cavenaile et al., 2011a, b; Sabandi and Noviani, 2015) the economy is said to be growing where there is an increasing trend in its GDP per capita. The following variables were used as control variables for financial development gross capita formation as a percentage of GDP, consumer price index, trade openness and general Government final expenditure as a percentage of GDP. Table 1 outlines these variables.

Financial innovations inflates the efficacy of financial institutions, it reduces transactional cost as well as satisfy the needs of customers, thereby fostering economic growth, it is thus expected that financial innovation variables will have a positive effect on growth while consumer price index and Government expenditure are expected to have a negative effect and trade openness and gross fixed capital formation will have a positive effect on growth.

METHODOLOGY

The extended Aghion, Howitt and Mayer-Foulkes (AHM) model

This study adopts the extended version of the AHM model developed by Laeven et al. (2012). The Laeven et al. (2012) model sought to test the role of financial innovation with the main feature being ‘economies without financial innovation will stagnate, irrespective of the initial level of financial development’. The AHM model is based on the Schumpeterian growth model where inventors presented their inventions to financiers in other to obtain funding for their innovations. The Laeven et al. (2012) model emphasised the importance of financial innovation, their model is;

$$g - g_1 = b_0 + b_1F + b_2(y - y_1) + b_3F(y - y_1) + b_4X + b_5f + b_6F(y - y_1) + u, \tag{1}$$

Where g represents economic growth, f financial innovation, y income and x control variables.

The model used a panel of cross-country regression and expressed that the level of financial development in any period is a result of a previous financial innovation. This study considers a reduced form of the model and simply considers a single country analysis. Also, dropped from the model are the growth comparative variables so that the interpretation of coefficients reflects a responsive nature as oppose to speed convergence. This study further inculcates mobile penetration rate as well as broad money to narrow money as proxies to financial innovation into the model resulting into;

$$YXy_{t-1}Ffi \tag{2}$$

$$GDPPCG_t = \underbrace{CPI_t, TO_t, GFCE_t}_{MPR_t, DCP_t, M2M1_t} + GDPPCG_t + GCF_t +$$

Where Y is the dependent variable for economic growth indicator, X are the control variables, F is the variable for the control of financial development and fi are the financial innovation variables.

The autoregressive distributed lag model

This study uses the ARDL model to test the relationship that exist between financial innovation and economic growth in Cameroon. The rationale behind choosing the ARDL model is fourfold. Firstly, this model is suitable to be applied to variables that are at different orders of integration, that is a blend of both I (0) and I (1) (Giles, 2013). Secondly, the ARDL model is well-conditioned for small or finite samples that comprise of 30 to 80 observations (Ghatak and Siddiki, 2001). Third, when adequate lags are determined this will adjust for issues relating to serial correlations and endogeneity (Pesaran et al., 2001). Lastly, ARDL models provides unbiased estimations as the model runs long-run and short-run relationships simultaneously, that is “the Error Correction Model joins the short-run and long-run equilibrium without losing long-run information” (Pesaran et al., 1999). The generic form for the ARDL model is given as:

$$\Delta y_t = \beta_0 + \beta_1 \Delta y_{t-1} + y_1 \Delta x_{t-1} + \delta_1 \Delta z_{t-1} + \theta_0 y_{t-1} + \theta_1 x_{t-1} + \theta_2 z_{t-1} + \varepsilon_t \tag{3}$$

Where the sum of the long-run coefficients $\theta_0, \theta_1,$ and θ_2 is tantamount to the error correction term

coefficient.

The ARDL model used in this study to ascertain the relationship between financial innovation and economic growth is expressed as:

$$\begin{aligned} \Delta \ln(GDPPCG)_t = & C_0 + \beta_1 \Delta \ln(GDPPCG)_{t-1} + \\ & \delta_1 \Delta \ln(DCP)_{t-1} + \rho_1 \Delta \ln\left(\frac{M2}{M1}\right)_{t-1} + \delta_1 \Delta \ln(GCF)_{t-1} + \\ & q_1 \Delta \ln(CPI)_{t-1} + w_1 \Delta \ln(TO)_{t-1} + \delta_1 \Delta \ln(GFCE)_{t-1} + \\ & \theta_0 \ln(GDPPCG)_{t-1} + \theta_1 \ln(DCP)_{t-1} + \theta_2 \ln\left(\frac{M2}{M1}\right)_{t-1} + \\ & \theta_3 \ln(GCF)_{t-1} + \theta_4 \ln(CPI)_{t-1} + \theta_5 \ln(TO)_{t-1} + \\ & \theta_6 \ln(GFCE)_{t-1} + \varepsilon_t, \end{aligned} \tag{4}$$

Where Δ depicts the differencing of a variables and ε_t is the error term otherwise known as white noise, $t - 1$ is the lagged periods and all other variables are as defined above.

θ coefficients are the long run multipliers consistent with long-run relationships, thus the long-run relationship is assessed by testing the θ coefficients. The bounds test of co-integration is used to establish the long run relation between the variables. The Bound F statistic is computed for the different endogenous and exogenous variables. The hypothesis of the bound test is given as:

$$H_0: \delta_1 = \delta_2 = 0 \text{ (null, long run relation does not exist)}$$

$$H_1: \delta_1 \neq \delta_2 \neq 0 \text{ (there exist a long run relation)}$$

The resulting decision of co-integration is based on the critical values obtained, given the critical values of the F statistic is greater than the upper bound critical value then it is inferred that the null hypothesis can be rejected indicating that the variables are co-integrated, where the F-statistic is below the lower bound critical value then the null hypothesis cannot be rejected (Narayan, 2005). This study further inculcated three different lag length order selection models; Akaike Information Criterion (AIC), Schwarz Bayesian Criterion (SBC) and Hannan-Quinn Criterion (HQC) to determine the optimum lag length. The model that demonstrates small standard errors and high R^2 with the smallest AIC, SBC estimates will perform relatively better (Nkoro and Uko, 2016).

Next the long-run and short-run coefficients are determined: based on the results from the bounds test, if variables are co-integrated then we estimate both the short-run (ARDL) and long-run (Vector Error Correction Model) models, however if variables are not co-integrated then specify only the short-run (ARDL) model (Pesaran et al., 2001).

Table 2. Unit root test.

	Augmented Dickey-Fuller Unit Root Test			Phillips - Perron Unit Root Test		
	At level	1st Difference	Integration	At level	1st Difference	Integration
lnGDPPCG	-3.88 (0.01)*		I (0)	-3.76 (0.01)*		I (0)
lnBM2	-1.56 (0.49)	-6.46 (0.00)*	I (1)	-1.77 (0.39)*	-6.47 (0.00)	I (1)
lnCPI	-4.36 (0.001)*		I (0)	-4.12 (0.00)*		I (0)
lnDCP	-1.47 (0.54)	-4.39 (0.00)*	I (1)	-1.32 (0.61)*	-4.39 (0.00)*	I (1)
lnGCF	-3.09 (0.03)	-7.84 (0.00)*	I (1)	-3.08 (0.03)	-8.10 (0.00)*	I (1)
lnGFCE	-2.51 (0.11)	-7.77 (0.00)*	I (1)	-2.60 (0.09)	-7.86 (0.00)*	I (1)
lnTO	-2.64 (0.09)	-7.92 (0.00)*	I (1)	-2.60 (0.09)	-8.12 (0.00)*	I (1)
lnMB	-1.41 (0.00)	-6.86 (0.07)	I (1)	-3.48 (0.04)	-6.87 (0.01)	I (1)

Values are natural log of the variables. Values reports in () brackets are the probability of the coefficients. *, **, ***, significance at 1, 5 and 10% respectively.

RESULTS AND ANALYSIS

Unit Root test

This study uses time series data which can be stationary; that is, where its statistical properties: the mean, variance and autocorrelation are constant over time or non-stationary where its statistical properties change over time. A unit root test tests for stationarity and non-stationarity. If it has unit root I (1), then the time series is non-stationary and if no unit root I (0) is present, the time series is stationary. Table 2 shows the results of the unit root test for the variables in this study using the Augmented Dickey and Fuller (1981) test and Phillip and Perron (1988) test. The results reveal that the variables are not integrated in the same order. The variables ln (GDPPCG) and ln (CPI) is stationary at level I (0) while ln (M2M1), ln (DCP), ln (GCF), ln (GFCE), ln (TO) and ln (MB) become stationary after first difference I (1). The results show a mixture of I (1) and I (0) but none of the variables are integrated at I (2); this is a prerequisite for the application of the ARDL model.

ARDL Bounds Test

For bounds co-integration test, four models were tested. Model 1 considered DCP sector while Model 2 tested broad money to narrow money as proxies to financial innovation. Table 3 shows high *F*-values for model 1 and 2 with regards to the critical values at 1% significance level provided by Pesaran et al. (2001a, b) and Narayan (2004). Model 3 considers MB, this variable is separated because available data here only starts from 1998 and there are still some controversies with regards to using mobile penetration rate to gauge for financial innovation, but it has been used as a proxy of financial innovation in recent research studies such as Asongu (2012), Ondiege (2010), Aker and Mbiti (2010) and Bara et al. (2016).

Mobile banking is co-integrated at 10% significance level. Model 4 considers gross capital formation to account for financial development and illustrates high *F*-values as well and significant at a 1% level. These results provide a basis for estimating long run and short run relationships.

Long-run Estimations

The long short-run estimates between 1970 – 2018 are shown in Table 4.

Domestic credit to private (DCP) sector

DCP has a positive coefficient and statistically significant in the long run which indicates that it has an impact on economic growth in Cameroon. Studies by Qamruzzaman and Jianguo (2017), Bara et al. (2016), Tyavambiza and Nyangara (2015) and Ndlovu (2013) found similar results. This indicates the importance for financial institutions to provide credit to business and households in Cameroon. Contrarily, Idun and Aboagye (2014) using data from Ghana concluded that DCP as a measure of financial innovation has a negative effect on economic growth in the long run. Bara and Mudzingiri (2016) study show an insignificant but positive relation in the long run. In contrast, DCP has a negative relation to economic growth in the short run in Cameroon. It is possible to infer that in the short run, credit is not well developed and adequately disseminated throughout the economy to influence economic growth (Bara et al., 2016). Economic Growth theories assert that efficient and operational financial services is imperative for economic growth by fulfilling capital requirements.

Broad money (M2- money supply)

M2 as a financial innovation proxy has a positive

Table 3. Bounds test results.

Model	F-Value	Co-integration
$1) \Delta \ln GDPPCG = \left[\frac{F \ln(GDPPCG) (\ln(GDPPCG)_t \ln(DCP)_t, \ln(CPI)_t, \ln(TO)_t)}{\ln(GFCE)_t} \right]$ DCP Sector as a proxy to financial innovation	14.667	Present
$2) \Delta \ln GDPPCG = \left[\frac{F \ln(GDPPCG) (\ln(GDPPCG)_t \ln(\frac{M2}{M1})_t, \ln(CPI)_t, \ln(TO)_t)}{\ln(GFCE)_t} \right]$ Broad money to narrow money as a proxy to financial innovation	9.691	Present
$3) \Delta \ln GDPPCG = \left[\frac{F \ln(GDPPCG) (\ln(GDPPCG)_t \ln(MB)_t, \ln(CPI)_t, \ln(TO)_t)}{\ln(GFCE)_t} \right]$ MB as a proxy to financial innovation	3.382	Present
$4) \Delta \ln GDPPCG = \left[\frac{F \ln(GDPPCG) (\ln(GDPPCG)_t \ln(GCF)_t, \ln(CPI)_t, \ln(TO)_t)}{\ln(GFCE)_t} \right]$ Gross capital formation as a proxy for Financial development	11.628	Present

		10%	5%	1%
Pesaran et al. (2001a, b)	K	1 (0)	1 (1)	1 (0) 1 (1)
	4	2.45	3.52	2.86 4.01 4.28 5.84
Narayan (2005)	4	2.20	3.09	2.56 3.49 3.29 4.37

Unrestricted intercept and no trend

Table 4. Long and short-run estimates between 1970 – 2018.

Long run estimates				
	Model 1 (DCP)	Model 2 (M2)	Model 3 (MB)	Model 4 (GCF)
C	7.545 (0.04)	9.4 (0.4)	4.12 (0.002)	9.03 (0.5)
lnDCP	0.84 (0.02)			
lnM2		2.11 (0.07)		
lnMB			0.85 (0.04)	
lnCPI	0.05 (0.86)	-0.21 (0.5)	0.0086 (0.04)	-0.46 (0.24)
lnTO	-1.51 (0.26)	-2.07 (0.16)	-0.28 (0.87)	-2.05 (0.25)
lnGFCE	-0.74 (0.006)	-2.39 (0.37)	-2.64 (0.21)	-1.57 (0.66)
lnGCF				1.75 (0.43)
Short run estimates				
	Model 1 (DCP)	Model 2 (M2)	Model 3 (MB)	Model 4 (GCF)
ECT (-1)	-0.233 (0.0000)	-0.29 (0.0000)	-0.59 (0.0000)	-0.592 (0.0000)
$\Delta \ln GDPPCG (-1)$	-0.348 (0.002)	-0.319 (0.003)	0.862 (0.18)	-0.137 (0.135)
$\Delta \ln DCP (-1)$	-0.335 (0.003)			
$\Delta \ln M2 (-1)$		-0.306 (0.003)		
$\Delta \ln MB (-1)$			0.72 (0.004)	
$\Delta \ln CPI$	0.604 (0.51)	0.907 (0.514)	0.92 (0.012)	-3.106 (0.001)
$\Delta \ln TO$	0.481 (0.63)	1.159 (0.425)	-0.63 (0.48)	-2.261 (0.009)
$\Delta \ln GFCE$	-5.077 (0.08)	-4.557 (0.086)	-0.88 (0.92)	-1.950 (0.395)

Table 4. Contd.

$\Delta \ln \text{GCF} (-1)$				-0.174 (0.047)
C	0.35 (0.42)	0.203 (0.28)	0.821	0.088 (0.574)
R squared	0.624	0.671	0.65	0.760
Adj R-squared	0.499	0.561	0.48	0.680
F- stat	4.997	6.128	6.778	9.501
Heteroskedasticity				
Normality				

coefficient but is statistically insignificant in the long run. M2 short run estimates show a negative coefficient which is statistically significant. M2 is not significant to explain the economic growth in Cameroon over the sample period in this study. In this study the money supply M2 does not have an effect on the economic growth in Cameroon. Tyavambiza and Nyagara (2015) illustrated that broad money had a negative effect on economic growth using M3 to GDP ratio. Romer (2010, 2012) cited nonperforming loans as a factor which would have a negative impact on economic growth; since financial institutions lose confidence in their clientele credit worthiness. There is also a distinction between credit to households and credit to businesses, credit to households lead to consumption while credit to businesses is positively correlated to economic growth (Beck et al., 2012), providing more of the former could lead to negative economic growth. Ogunmuyiwa and Ekone (2010) found a negative relation between money supply M2 and economic growth.

Mobile banking

MB has statistically significant and positive coefficients in both the long and short run, illustrating that MB contributes to the economic growth of Cameroon. An empirical study by Bara et al. (2016) supports this finding. The advent of mobile money facilitates the transfer of money, serves as a bill payment mechanism and extends financial services to the rural areas and the unbanked. Indeed, Napier (2010) argued that mobile phone operators in Africa are engaged in financial innovations that create more impact than microfinance institutions. According to the IMF mobile financial transactions in Cameroon reach \$5.9bn in 2018. These results confirm the expectations for a positive impact on economic growth.

CONCLUSION AND RECOMMENDATION

The main objective of this research was to investigate

and determine whether there exist a correlation and an impact of financial innovation on the economic growth of Cameroon. Results from two key proxies of financial innovation, DCP sectors and MB services, were positively correlated to economic growth and statistically significant long run.

This positive phenomenon is a clear indication that advancing loans and credits to participants in the private sector of the economy will be able to boost their production of goods and services, improve upon their channels of sales and distributions as well as creating the needed stimulus for economic growth within the market system. This does not only cement the fact that the use of new models of financial innovations stimulates the financial sector to be robust and competitive thereby stimulating economic growth (Qamruzzaman and Jianguo, 2017) but also reaffirms the position of Michalopoulos et al. (2009) that the level of economic development within a country will stagnate if much importance is not given to frugal financial innovation.

Conclusively, a very liquid private sector which is termed as an “*engine of economic growth*” will create the needed job opportunities for the masses thereby reducing unemployment rates, engaging in corporate social responsibilities by providing some basic social amenities for the teeming population to have better lives. Expanding firms are also able to enjoy economies of scales (both internal and external).

With the increasing usage of Mobile phones and knowledge of using Mobile applications for financial transactions, it will be prudent for the Central Bank and Government of Cameroon to streamline to activities of financial transactions in order to curb instances of fraud and money laundering.

Also, there should be an economic synergy between banks and telecommunication networks in Cameroon by broadening their scope and network coverage to wider areas within the country so that private businesses and entrepreneurs can have easy access to domestic credits via their mobile money wallet. This, in the long run will boost their economic output and profitability thereby adding up to the economic growth of the country (Beck et al., 2012).

Finally, this research work adds up to the defence that frugal financial innovations and economic growth are affirmative.

Suggestions for further research

As this study focused on the relationship between financial innovation and economic growth of Cameroon adopting three economic statistics namely DCP sector, broad money (M2) and MB as explanatory variables, it will be expedient for a further research in this same area whereby a mediating analysis of the impact of inflation, interest rates, labour cost and the ratio of non-performing loans to banks liquidity (solvency) on financial innovation and economic growth can be assessed.

Also, it would be an invaluable addition to knowledge for a further research on the social value of financial innovations on economic growth. This research would be appropriate for developing economies of which Cameroon is no exception. A thorough analysis of the social value and expense of financial innovations in line with socio-economic advancements will generate much interest in the support of local firms' innovations and growth as against that of foreign firms situated in Cameroon.

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