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The Impact of Financial Sector Development on Inflation in CEMAC

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Abstract **Review Article**

As an extension of existing empirical research, the paper shows that despite the structure of a financial sector, the financial sector development moves in opposite directions with inflation. Empirical verification using fixed-effects method from 2000 to 2018 in CEMAC countries provides datum about the theoretical hypothesis that there is negative relationship between inflation and financial sector development. Besides, results show that despite the low level of inflation target in CEMAC, the negative relationship between inflation and financial sector development exit and the credit risk associated to credit supply activity increases inflation in an important proportion. This increase of inflation reduces the performance of the financial sector and delays the central banker actions. The main policy recommendation addressed to monetary and financial policy actors in CEMAC is to improve strategies to contain the spillover effects due to the development financial sector.

Keywords: Inflation, Financial sector, Development, CEMAC.

INTRODUCTION

The relationship between financial sector development and inflation is a long-standing debate in literature. Recent experiences of financial crises further than their intensity have shown that the relationship between financial sector development and inflation is not obvious. The groom role of financial system in crises intensity highlighted its key character in macroeconomic instability perceived during the crisis period. Echoes on a new concern about this relationship between financial sector development and inflation exposed the failure to anticipate the risk.

Similarly, the failure of central banks to anticipate the risk associated to the deepening of financial institution activity. Despite the low inflation target which Aglietta and Scialom (2009) likened to collective insurance against risk, the crisis period has shown that this inflation target is inconsequential to deal with all the complexity of the development of a financial sector. The financial sector development programme is a result of imbalance in accounts of economic agents (Antonin *et al.*, 2018). The persistence of this condition enabled financial institution or in a more widespread approach, the financial sector to play a central role in economic activity by linking actors with financing capacity with those with financing needs. Whereas in developing countries the low activity of financial market in general reduces analysis to commercial banks and other financial institutions, those financial intermediary's facility to convert maturities consolidated their central position.

The aspect of this activity is that financial intermediaries have the capacity to dispose short-term deposits and transform them into medium and long-term loans. Furthermore of their ability to convert maturities, the combination of intermediation and payment services gives to financial intermediaries a clear advantage over other financial sector actors. Besides, their ability to link actors with financing needs with those with financing capacity, particularly through this ease of access to financial resources (Batayneh *et al.*, 2021), has caused development of financial intermediation activity to be the hub of boosting economic activity. While that access to resources has been the main basis for authors to support this development of intermediation activity (Schumpeter, 1959; Gurley and Shaw, 1960, Mc Kinnon and Shaw, 1973), the effect of financial intermediaries' behaviour towards liquidity has attracted another group of authors in this literature (Scialom, 2013; Raja *et al.*, 2015).

The reason of this interest is that the growth of liquidity is essential for economic activity but the problem arising is that is not easy to know whether this liquidity is not source of instability (Foglia, 2022).

Consequently, ensuring stability has become an imperative (Raja *et al.*, 2015) for this part of the literature. The real question that arises is whether internal monetary stability, the main objective of monetary policy seek by all central banks, whether independent or not, is able to face the behaviour of financial intermediaries with regard to liquidity. This article proposes to advance the existing literature by making an empirical study considering the way inflation is affected by the financial sector development in developing countries especially in the case of African countries where banking sector activity is most important share of financial intermediary activity. Specifically CEMAC obtain a particular interest because 80% of financial assets are held by commercial banks and 90% of the credit offered by the financial sector comes from this banking sector.

Using panel methods, the fixed effects analysis techniques (FE and FE-IV) over the period 2000 to 2018 we want to explore the relationship between inflation and financial sector development. The rest of the paper is structured as follows: in section 2, a brief review of the literature its put forward. Section 3 presents empirical frameworks. In section 4, estimation and interpretation of results are proposed. Section 5 provides conclusion.

2. DISCUSSION ON LITERATURE REVIEW

The development of the financial sector has made possible diversification of actors present in financial sector in terms of structure and activity. This development has not only diversified the structure or the activity of financial actors. It made possible a complementarity between financial actors and type of finance (Gaffard and Napoletano, 2018). The question about the impact of financial sector development on inflation has received vague attention in the literature. To provide answer to this question, few works has tried to find more to determine the nature of the link between financial sector development and inflation. Unfortunately, a negative connexion has been established between financial sector development and inflation. While Boyd *et al.*, (2001) use the loanable funds theory and credit market frictions to provide a theoretical foundation for the existence of a negative relationship between financial sector development and inflation, Rousseau and Wachtel (2002) find that liquidity variability has a negative impact on inflation.

The latter two authors (Rousseau and Wachtel, 2002) explain that as the financial system deepens, high price variability is observed. This high price variability goes with high rates of inflation which reduce the performance of this financial sector (Rousseau and Wachtel, 2002). To control for their assumption, Rousseau and Wachtel (2002; 2011) conduct causality tests from financial sector development to inflation and from inflation to financial sector development. The authors highlight the persistence of the negative sign obtained in the different tests, despite of the direction in which the relationship is tested. Rousseau and Wachtel (2002; 2011) conclude that there is a negative relationship between financial sector development and inflation rate.

Whereas this conclusion seems to justify the need to follow the low inflation target (adopted as a monetary policy objective by most central banks), however no parallel has yet been established in the literature. It is much more an empirical literature that has easily settled than the theoretical one after Rousseau and Wachtel (2002) work. Unfortunately, even if this literature admits that regardless of the direction of the relationship tested, evidence of negative relationship between financial sector development and inflation is confirm. Many authors always looked on the impact of inflation on financial sector development providing fact. The main idea appearing in their discussion is that regardless of the geographical area, inflation limits the development of financial sector (Keho, 2009; Kim *et al.*, 2010). However, three main contributions stand out differing both in econometric techniques used, types of sample studied and issues addressed.

The first set of contributions beyond the difference in the econometric technique employed, were similar in the sample size and the questions addressed. Batayneh *et al.*, (2021), Alimi (2014), Emmanuel (2012) are noteworthy in this respect. These three different authors have studied the impact of inflation on financial sector development for the case of a single economy. While Batayneh *et al.*, (2021) focus on the case of Jordan, Alimi (2014) and Emmanuel (2012) carry out their study for the case of two specific African countries respectively Nigeria and Ghana. Beyond the particularity of the econometric techniques used, one of the striking points is that all these authors find that high inflation rate stand as the main hindrance to financial sector development.

Batayneh *et al.*, (2021) study this relationship for the period 1993 to 2018 in Jordan. Alimi (2014) looks at the period from 1970 to 2012 for Nigeria. The two authors used the same method the autoregressive regressive distributed lag model (ARDL) and obtained similar results despite the geographical spread of their countries. The method used (ARDL) gave them the possibility to differentiate long-run and short-run effects. In both countries, authors establish negative but significant impact of inflation over financial sector development in the short and long run. Regarding Emmanuel (2012) analysis, the focus of the study remains the same.

Though, Emmanuel (2012) uses three different econometric techniques which allow him to demonstrate that the relationship between financial sector development and inflation is unidirectional. In

the short term this relationship is positive but insignificant and becomes negative and significant in the long term. This new result introduced by the work of Emmanuel (2012) is not limited to challenging the results of other authors. On the contrary, this result shows that the empirical basis of this relationship varies depending on the econometric tool used.

A second group of empirical verification can be associated to the work of Batayneh *et al.,* (2021), Alimi (2014) and Emmanuel (2012). This second group is made up of the work of Kim *et al.,* (2010) and Effiong *et al.,* (2020). The common point in their analysis is that it studies the relationship between inflation and financial sector development on a heterogeneous panel of countries. Kim *et al.,* (2010) covers a panel of 87 countries for a period from 1960 to 2005 and uses the ARDL method, found out that the long run relationship between inflation and financial sector is negative and significant and in the short run it becomes positive but insignificant. Kim *et al.,* (2010) result is similar to those of Emmanuel (2012). This similarity implies that the size of sample can affect the result.

Effiong *et al.,* (2020) restricted their analysis to African countries and their panel have been reduced to 39 African countries. Those authors carried out their study over the period 1990- 2015. The generalized method moment system (GMM) preferred to other econometric techniques used by the others enables Effiong *et al.,* (2020) to confirm a negative relationship between inflation and financial sector development. However, it is important to note that unlike other authors groups who studied the link by constructing an equation with financial sector development as the dependent variable, Effiong (2020) uses the Karras 1999 model and construct an inflation equation and tests the relationship controlling the incidence from inflation to financial sector development. The negative sign allows these authors to confirm the evidence of negative relationship between financial sector development and inflation, regardless the direction in which the relationship is controlled.

A third group of contributions upgraded these analysis and contribution on the topic. This core study group directed their analysis on the case of monetary union context. The contributions of Keho (2009) and Creel *et al.,* (2013 and 2015) can be main one mention at this level. The two authors have analysed the relationship between financial sector development and inflation for countries structured in monetary union. Unfortunately, Keho (2009) even Creel *et al.,* (2013 and 2015) did not construct an inflation equation as it was the case for Effiong *et al.,* (2020). However, extending this empirical discussion to the case of countries organised in a monetary union allows them to show that financial sector development is likely affect common policies. The econometric technique, problem addressed, even the sample and the time period of Keho (2009) differ from Creel *et al.,* (2013 and 2015).

Keho (2009) conducts his analysis on the economies of the West African Economic and Monetary Union (WAEMU) over the period 1990 to 2005, employs different time series data techniques and is interested in examining the causality between inflation and financial sector development in the long run. The cointegration test proposed by Pesaran *et al.,* (2001) and the Granger causality test suggested by Toda and Yamamoto (1995) allow Keho (2009) to control the type of causality. For six countries in his sample, Keho (2009) finds that there is no evidence of a long-run relationship between inflation and financial sector development. In two countries the author even speaks of a lack of causality between inflation and financial sector development. The addition of further tests allows this author to detect the existence of strong and positive causality in four countries in his sample.

However, the evidence of reverse causality detected in two countries allowed Keho (2009) to state that inflation and financial sector development affect each other in a singular way in the WAEMU countries. This result then implies the existence of varied outcomes and patterns of causality across countries in the same monetary union. Creel *et al.,* (2013 and 2015) indicate that in order to avoid the fact that financial sector development creates a difficult environment that alters the action of the central banker, prudential tools according to Creel *et al.,* (2013 and 2015) can improve the monetary policy and ameliorate the relationship between financial sector development and inflation.

The result presented by Keho (2009) implies that despite the rules defined in a monetary union the relationship between financial sector development and inflation creates a complex environment where despite the rules defined in a monetary union the action of the central banker can be altered. In other words, despite the designated inflation target in a monetary union, the inverse relationship between financial sector development and inflation is not ruled out. It makes sense to frame this relationship. In this perspective, Creel *et al.,* (2013 and 2015) work on the sample of 27 countries of the European Union for the period 1998-2011 and use the generalized method of moment. Creel *et al.,* (2013 and 2015) found that central banker's policy expands with prudential policy tools. The introduction of prudential policy tools into the relationship did not allow the authors to conclude that the inverse relationship between financial sector development and inflation is ruled out.

3. EMPIRICAL FRAMEWORK

3.1. Data

As mention in above section, the analysis is carried on the six countries of CEMAC (Cameroon, Chad, Congo, Gabon, Equatorial Guinea and Central

African Republic). The annual data from 2000- 2018 are extracted from the World Development Indicators (WDI) and the Central Bank of African States (BEAC). The macroeconomic environments variables are mostly taken from the WDI. These include the following variables: inflation rate, growth rate, oil price, and budget balance. Data on the development and activity of financial system actors are taken from BEAC. These variables are: credit to non-financial private sector, interest rate of central bank TIAO, and non-performing loan.

The selection criterion is constraint to data availability and literature comments. According to this literature, several data can be used, but the most relevant data are those that best reflect the phenomenon (Batayneh *et al.,* 2021). Inflation variable discloses strategy adopted by the central bank which enables maintaining price stability around a certain trend (Scialom, 2013; Keho, 2009). While in Keho (2009) this variable is counted among the independent variables, in Effiong work, this variable is one dependents variable. In this study, inflation is the only dependent variable.

The variables retain to provide material on development of financial actors activity, the variable credit extended to non-financial private sector 'named credit' in this paper measures the level of credit supply. The non-performing loans variable measures the level of credit risk. While the use of the first variable is sufficiently justified in the literature, the second variable according to Foglia (2022) and Antonin (2018) captures the level of risk related to the development of the financial system. The impact of this risk in the relationship is important to be note down. Besides, Effiong (2020) introduced other variables capturing the influence of the central banker's action and the macroeconomic environment for better analysis of the relationship. In this study we simply keep these variables. For the incidence of the central banker's action in the relationship, interest rate is used (TIAO). The variables that inform on macroeconomic environment, growth Gross Domestic Product (GDP rate), oil price and budget balance are used.

3.2. Statistical Analysis

The table 1A show that among the variable employ, oil price and GDP rate are the main dispersed series, unlike the other less dispersed variables (low standard deviations). Despite the dispersion quoted for these variables, low level of standard deviations is detected for other variables. This indicates that for the most part of other variable the variances are minimal. It is therefore not appropriate to carry out a logarithmic transformation to normalize the series. CEMAC countries offer lower volume credit (around the 25% of GDP) than what is offer by other African countries (around 35% of GDP). However a visual examination of Figure 1 suggests that conducting such a study is relevant for the case of CEMAC countries as for all countries a negative relationship between inflation and financial sector development is noted.

Table 1 A: ***descriptive statistics***

Variable	Observation	Mean	Standard-deviation	Min	Max
Inflation	114	2.17	4.58	-9.57	28.11
Credit	114	20.43	1.51	16.92	27.58
Credit risk	114	0.28	0.14	0.061	0.701
TIAO	114	4.71	1.51	2.5	7.82
GDP rate	114	1.55	8.99	-36.56	56.79
Oil price	114	43.11	38.66	0.058	112.92
Budget balance	114	-0.19	0.18	-0.7	0.09

Source: Authors calculation. Data extracted from WDI and BEAC 2020.

The correlation table below adding to extend statistical analysis shows that the problem of multicollinearity among explanatory variables (see Table 1B below) is unlikely.

Table 1 B: Correlation among variables

Variable	inflation	credit	Credit risk	TIAO	GDP rate	Oil price	Budget balance
Inflation	1						
Credit	-0.221	1					
Credit risk	0.223	-0.378	1				
TIAO	0.1808	-0.161	0.1530	1			
GDP rate	0.079	-0.213	-0.0228	0.305	1		
Oil price	-0.165	0.479	-0.556	-0.125	-0.0843	1	
Budget balance	-0.268	0.348	-0.406	0.156	0.101	0.6301	1

Source: Author Calculation using WDI and BEAC data 2020.

The scatter plot shows that the correlation between these variables is not so strong but less dispersed. This comment confirms analysis proposed by descriptive statistics and correlations tables.

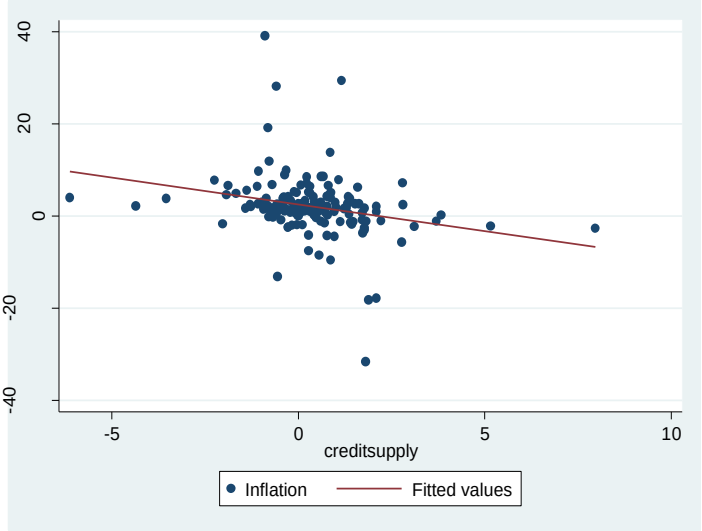

Figure 1: Scatter plot between inflation and credit supply in CEMAC
Source: Author own calculation

3.3. Model Specification and Econometric Method

The paper tries to examine the impact of financial sector development on inflation. To this end, we intend to control whether the negative relationship admitted in the literature is also found in CEMAC countries. The specification used is very close to other specifications meet in previous works, especially those suggested by Krause and Roja (2006); Effiong *et al.*, (2020). Taking in account the variables encountered in this literature, our econometric model is formulated as follows:

$$\pi_{i,t} = \partial\pi_{i,t-1} + \beta_0 + \beta_1\, Dsf_{i,t} + \beta_2\, Risk_{i,t} + \beta_3\, X_{i,t} + \mu_i + \lambda_t + \epsilon_{i,t} \quad (1)$$

Where, i and t refer to country and period respectively; μi captures country effects and λt time effects, εit takes into account all errors related to omissions. Dsf_{it} rank financial sector development (rate of credit supply), $Risk_{it}$ inform about the risk of credit caused by non-performing loan X_{it} term is the vector of control variables. Opposed to the econometric method employ by Effiong *et al.*, (2020), the econometric methods that we used to estimate this relationship: is the ordinary Least Squares method with fixed effects. Roodman (2009) painted out a condition to use the econometric method employ by Effiong *et al.*, (2020) is crucial to have a large N and small T. For CEMAC where we have few countries (small N) and many time periods (large T) the Roodman (2009) condition is not respected. Thus it is not appropriate to apply a GMM-system on this CEMAC sample. Conversely, Wooldridge (2010) then Bollen and Brand (2010) argue that facing this restriction, the appeal to Ordinary Least Squares method with Fixed Effects (FE) stand as suitable panel estimation procedure which offer precise estimations without requiring a "large N with small T".

Estimation with the ordinary least squares method with fixed effects facilitates the control of country heterogeneity and stable structural variables over time that may have been omitted. Two tests are associated with this method: the Fisher test and the Hausman test. The Fisher test reports the overall significance of the specific effects introduced. The Hausman test allows the choice between specifications[1]. This technique enables equations with a dynamic structure (presence of a lagged dependent variable in equation). This approach provides retort to the question of statistical inference of a regression faced with OLS. Imai and Kim (2019) expand the discussion and point that it require the non-correlation between the unit-specific error term (μ_i: where $\epsilon_{i,t} = \mu_i + \theta_{i,t}$) and a unit specific average of covariates ($\bar{x}_h$). The FE model does not face limitation and stands as the most popular estimator which control omitted variable bias due to heterogeneity which is constant over time.

3.4. Validity test of the model

To validate the model a robustness check of the model specification is necessary. Balgati (2005) indicates some tests are required. According to this author, the presence of a lagged value of both endogenous and exogenous explanatory variable main characteristic of dynamic models requires that stationarity tests be performed in addition to the other test. The series are mostly non-stationary. This assumes that they admit a mean and a variance that grow without

[1] In fact, the Hausman test facilitates the choice between fixed and random specific effects specifications, the criterion lead to decide between two types of effects (fixed (βf) or random (βa)). The approach is to compare the variance-covariance matrix between the two estimators defined as follows: $H = (\beta f - \beta a)' [var(\beta f - \beta a)^{-1}] (\beta f - \beta a)$.

limit over time (Nyanda, 2021). Cointegrated variables indicate that dynamic specification is "error correction mechanism (ECM)" type (Nyanda, 2021). This implies that, if variables are not stationary, cointegration rationalizes the modeling in short and long term and so on.

For Nyanda (2021), following in this Balgati (2005) the test of Im Pesaran and Shin (2003) is best suited to control or study the order of integration of the variables for the data where the GMM panel method is used. This Im Pesaran and Shin (IPS) test is based on the p-value associated with the IPS W-Stat statistic and proposes to test a null hypothesis (H0) against an alternative hypothesis (H1) as follows:

H0: All individual series in the panel contain unit root,

H1: At least one of individual series in the panel is stationary.

The decision rule used for this IPS test is as follows: if the p-value associated with the IPS statistic is less than α (Z-stat <5%) with 5% of significance we accept H0.

Table 2: IPS stationary test

variables	Level z-stat	proba	Indifference z-stat	proba
Inflation	-5.0914	0.0000	-6.7247	0.0000
credit	0.1622	0. 5644	-4.8058	0.0000
Credit risk	-0.8073	0. 2098	-5.0314	0.0000
TIAO	2.6633	0.9961	-3.8464	0.0001
GDP rate	-4.8986	0.0000	-6.2808	0.0000
Oil price	-0.7980	0.2124	-4.8884	0.0000
Budget balance	-1.3119	0.0948	-4.3054	0.0000

Source: Author own calculation

4. Econometric Estimation Result and Interpretation

Results obtained using different econometric techniques (fixed effects model and fixed effect model with the setting of instrumental variables) lead to the confirmation that there is a negative relationship between inflation and financial sector development in CEMAC. According to the result, the financial sector development in CEMAC achieved through expansion of credit provision offer mainly by the banking sector evolved in opposite direction with inflation rate. However, the other variable introduce to see how credit provision cause price instability (controlled through the risk attach to relationship between lack of good information provided by the borrower to lender), point out that risk attach to the increase of this credit supply is likely to lead to high price variability and therefore high inflation rates.

Table 3: incidence of financial sector development on inflation estimated through fixed-effect model

Variables	1.1 Coefficients	1.2 Coefficients
Credit	-0.34728 (0.53945)**	-0.96799 (0.74259)***
Credit Risk	6.320736 (6.77881)	6.036948 (6.738396)
TIAO	-0.06103 (0.72096)	--------
GDP rate	0.007418 (0.04982)	0.014467 (0.049508)
Oil Price	0.06711 (0.028694)	0.599298 (0.284171)
Budget balance	-5.59934 (5.32196)**	-6.780689 (5.319647)**
Constant	1.766868 (0.5457607)	1.537679 (0.487426)
Observations	114	114
Number of country	6	6
R^2 * within	16.85%	18%

Source: Authors calculation.

Note: Robust standard errors are indicated in square brackets; *, **, ***: results significant at 10%, 5% and 1%, respectively.

The result obtain from the fixed-effect model suggests that if the credit risk can be somewhat contained by central bank actions. Indeed, the positive sign associated with credit risk reveals that the better access to financial services resulting from development of financial intermediary activity rather increases effect of reverse effect especially a risky environment which acts as an amplifier of price variability causing high inflation rates in CEMAC.

From Table 3 the hypothesis of negative relationship between inflation and financial sector development is tested. The development of the financial sector, measured using the ratio of credit to the non-financial private sector, is negatively correlated with inflation. The weight of this inverse relationship is greater in the absence of central banker intervention. This result leans in favor of a hypothesis according to

which the action of the central banker through its key rate acts as an absorber of negative effects. Instability relates to non-performing loans –rank counterparty risk, increase inflation rate in strong proportions. Results obtained using FE with a setting of instrumental variable displayed in Table 4 validates the results of traditional fixed-effects model (Table 4).

Table 4: Incidence of financial sector development on inflation estimated with FE-IV

	Dependent variable Inflation			
	2.1 Coefficient t-student		**2.2 Coefficient t-student**	
L.Inflation	0.22270	0.09579	0.2220852	0.09581
Credit	-0. 467**	0.51656	-0.647**	0.50690
Credit Risk	6.057****	0.63819	6.078****	0.64278
TIAO	-0.16988	0.69319	--	--
GDP rate	0.048128	0.04738	0.08431	0.04825
Oil Price	0.0604864**	0.02833	0.0591694**	0.02781
Budget balance	-6. 045468	6.2239	-5.447797	5.22791
Constant	1.434972	0.49498	1.46633	0.47854
Sargan test	0.653		0.642	
Endogeneity test	0.475		0. 439	
Number of observations	114		114	

Source: Authors calculation. Note: The significance of coefficient is controlled from 10% (*), 5 %(**) 1% (***) to 0.1% (****).

The table 4 confirms that risk attach to credit provision acts as an amplifier of inflation rate in CEMAC. Moreover, inflation rate of previous period tends to increase current inflation nearly 22 point of percentage. The relationship assumes that in CEMAC, inflation of previous period appears as a determinant of the next period. Moreover, this result confirms the authenticity and the importance of central banker role noted by Effiong (2020). The main instrument of the central banker (key interest rate) does not rule out the inverse relationship between inflation and financial sector development but still manages to attenuate it. The central banker's interest rate may not inhibit inflation in CEMAC. This result is similar to those proposed by Bikai and Essiane (2017). The Central Bank action with interest rate (key interest rate TIAO) discourages inflation. This assumes that the interest rate set by the central bank aims is, ensuring the target of low inflation.

If this game with interest rate (TIAO) is able to settle opposite effect because it affect the real interest rate of commercial banks, on the other hand, the risk attach to this interest rate game is barely that the adverse effects of a too rapid development of a financial system strongly dependent on its banking sector as is the case for CEMAC can reduce the volume of money available for the real sector. However, this interest rate limits any manifestation of the following scenario: an increase in credit supply observed during the faster period of financial system development due to environment shocks would exacerbate credit risk which in turn leads high price variability leading to an upward variation in inflation rates ending in a reduction of financial sector performance. Other control variables provided mitigated effect on inflation. The growth of GDP rate raises inflation rate by 4.82%.

The GDP growth rate therefore favors inflation in the CEMAC, although this relationship is not significant, it reveals that it would be awkward to encourage increase of inflation rate to improve economic activity. The supply shock ranked through oil price also increases inflation rate in CEMAC. If this positive relationship is independent of the instrument strategies rule, the negative sign attach to the budget balance variable has a different meaning from the other variable. In fact this sign imply that the monetary policy objective is moving in opposite direction with fiscal policy. Such a relationship for CEMAC assumes that fiscal policy instrument -expansionary budgets can't coexist with restrictive monetary policy objective. The two instruments and the divergent orientations inflict to CEMAC countries to seek how to align their national fiscal policies.

CONCLUSION

In this work, we examined the relationship between financial sector development and inflation in the CEMAC context over the period 2000–2018. For this purpose, we performed an econometric method suitable to panel analysis. The main result obtains despite econometric method confirm the fact a negative relationship between financial development and inflation exist. Further, the assumption and findings of previous empirical analyses is confirmed in CEMAC. This result suggests that regardless of the direction in which the relation between financial system development and inflation is studied there is negative relationship between inflation and financial sector development.

In addition, the empirical model suggests that the non-performing loans used as the main risk associated to credit provision increase the level of

inflation rate reducing financial sector performance. Thus, the negative effect of domestic credit on inflation in CEMAC testifies how financial sector development negatively affects the central bank action and reduce monetary policy instrument. Yet all countries aspire to develop their financial sector, but this financial sector development can be accompanied of spillover effects that raise inflation and reduce the performance of the financial sector. The results also provide element regarding the fact that despite the low inflation target present in the CEMAC, the negative relationship between inflation and financial sector development has not disappear. Therefore policy makers must resort new strategies which will mitigate the negative relationship. The main limitation of this study relates to data availability of financial market activity. Therefore, several ways in which the present study could be extended exist. For instance, one could investigate the relationship further using new econometric techniques at different time frequencies (as financial market data are just for less than 3 years). This would allow financial market variables (e.g., stock price, turnover) to be introduced in such analysis. Further it would be interesting to study the dynamics of relationship separating different sectors of the financial system (banks, insurance companies, shadow-banking). Finally, the use of prudential tool can better mitigate these spillover effects, fight against reduction of financial sector performance and increase efficacy of central banker. Therefore, future empirical studies must introduce this prudential framework to see if it changes the relationship

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