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Inflation and Economic Growth: A Comparative Empirical Analysis Between Cameroon and the Ivory Coast

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Abstract

Inflation is the main concern of developing Countries and particularly in Ivory Coast, a leading West Africa French speaking Country. The objective of this study is to make a comparative analysis of the effect of inflation on growth between Cameroon, a French speaking Central Africa Country where inflation is not a big concern and Ivory Coast. Using the Least Squares methodology, we find that inflation has no effect on economic growth in Cameroon during the study period. However, it has a negative and significant effect on economic growth in Ivory Coast. Also, the analysis of the causal relationship between inflation and economic growth using the Toda -Yamamoto framework and the Vector Autoregressive model show that there is a unidirectional causality from inflation to economic growth in Ivory Coast, while there is no causality between these variables in Cameroon.

Keywords: inflation, growth, least squares, Toda-Yamamoto framework

1. Introduction

Since the 90s, many developing countries have registered a remarkable progress in the fight against inflation and the reduction of their public expenditure and current account balance of payments deficits. However, these countries did not succeed in stabilizing their macroeconomic production or achieve a sustainable growth. This is mainly attributed to stabilization policies focused on price stability. Thus, inflation, unemployment and slow economic growth are evils that coexist in developing countries. The quest for solutions to these evils is therefore one of the major objectives of these economies.

Monetary policy that had for long remained in the background because of the popularity of Keynesian ideas which gave it a simple role of complement of budgetary policy witnessed a renewed interest with the inability of Keynesian theory to explain the simultaneous increase in inflation and unemployment at the end of 60s. Monetary policy being one of the main instruments of economic policy, it contributes to the achievement of the objectives of the latter. Although it is generally accepted that it is important in controlling inflation, its effect on the level of economic activity remains debatable.

Monetary policy refers to a set of measures intended to control the conditions of financing of the economy. These measures are generally taken by the monetary authorities, particularly the Central Bank, in order to change (increase or reduce) the quantity of money in the economy, thus controlling a set of macroeconomic variables such as production, investment, consumption, inflation, and even the value of the national currency. In fact, monetary policy was generally used as an instrument for regulating the economy until the end of the 70s and was thus used for «economic revival» or «contraction» when necessary. Since the beginning of the 80s, the Central Banks became more independent and followed liberal monetary policies, mainly aimed at maintaining price stability.

In fact, in an international environment marked by a high level of globalization, the health of Central Banks conditions financial stability, both internally and on a world level. This in turn conditions economic stability, making it important to make sure price stability is maintained. It is in line with this that this study examines the relationship between inflation and economic growth.

The relationship between inflation and the economic growth has attracted considerable interest from macroeconomists, decision makers and the central banks of developed and developing countries in recent decades. Specifically, the question if inflation is necessary or harmful to economic growth has led to a theoretical

debate illustrated by empirical results. In fact, originating from the context of Latin America in the 50s, this question generated a persistent debate between monetarists and structuralists. The structuralists believe that inflation is essential for growth while monetarists perceive it as harmful to economic progress. Moreover, certain empirical studies find a positive or negative relationship between these two macroeconomic variables.

The main objective of this study is to evaluate and compare the effect of inflation on economic growth in Cameroon and the Ivory Coast.

The Franc zone is made up of two sub regions: CEMAC and UEMOA. Due to their geographical positions, the abundant natural resources and their diplomacy, Cameroon and Ivory Coast are respectively the leading countries of CEMAC and UEMOA. According to one of the objectives of the convergence policies of the countries of the CEMAC zone and the UEMOA Zone, the rate of inflation is limited to 3%. Excluding these similarities, Cameroon unlike Ivory Coast has experienced less political instability since the 1980s.

The rest of the study is structured as follows: we have a literature review, a presentation of the methodology used, a presentation of the results and finally, the conclusion and recommendations.

2. Literature Review

2.1 Theoretical Literature Review

The study of the effect of monetary variables (rate of inflation) on real economic activity dates back to (Alban, 1958) who finds an inverse relationship between wage inflation (the growth rate of monetary wages) and the rate of unemployment.

The Keynesian (Lipsey, 1960) interpretes the Philips curve as a relationship between Inflation and Unemployment. This view has been criticized by liberalists like (Phelps, 1967) and Friedman (1968), then Sargent and Wallace (1975) who show through the introduction of adaptive and rational expectations into the Keynesian model, the absence of a tradeoff between inflation and unemployment. The reaction of the neo-keynesians was to rehabilitate the Phillips curve by using the hypothesis of imperfect flexibility of prices. All these studies are based on a linear relationship i.e.: either the inflation-growth relationship is positive or negative.

Other authors like (Fisher, 1993; Sarel, 1996; Ghosh & Phillips, 1998; Bruno & Easterly, 1998), renew the thought on this relationship and highlight the non-linearity of the effect of inflation on economic growth by supposing that there exists a level of inflation above which this relationship is negative and below which the inflation-growth relationship is positive.

(Sarel, 1996) shows using a sample of developed and developing countries that below the threshold of 8%, inflation has a positive effect on economic growth and a negative effect above this threshold. (Faria & Carneiro, 2001) by taking the case of Brazil in a context of high inflation conclude that in the long run, inflation does not have any effect on economic activity, but can have effects (which can be negative) in the short run. In the same manner, (Khan & Senhadji, 2001) find that the acceptable level of inflation is about 1% to 3% for the developed countries and from 11 to 12% for developing countries.

2.2 Review of the Empirical Literature

Phelps (1967) using the American data over the 1953-1964 period maximizes a social utility function constrained by a dynamic Phillips curve. He finds that inflation (P) is a function of unemployment (U) and anticipated inflation. According to him, to seek a low current rate of unemployment is to seek a high rate of inflation in the future (runaway inflation, i.e. period of double-digit inflation).

Sargent and Wallace (1975) use a model with two versions: an autoregressive version and a version which takes into account rational anticipations (inspired by Muth, 1961). They find that with the taking into account of rational anticipations, no tradeoff between unemployment and inflation is possible. Several other studies were carried out following the example of the neo-Keynesians which revived the Phillips curve but the studies already cited verify only the linear aspect of the relationship between inflation and economic activity. The studies which follow try to examine the nonlinear relationship between these two variables.

Fisher (1983) undertakes a study on 53 countries over the 1961-1973 and 1973-1981 periods by using a simple monetary maximization model. He finds that a high level of inflation is generally accompanied by slow growth and given the history of the Phillips curve; it is not very likely to have a single relationship between two endogenous variables (inflation and growth).

Fischer (1993) uses data on 86 countries over the 1961-1988 period using a panel data regression model. He finds that growth is negatively associated with inflation and the channel through which this is possible is as

follows: inflation reduces growth by reducing investments and productivity. Fischer however explains that in certain cases, one can find that a low level of inflation associated with a low level of deficit is not always necessary for rapid growth. Likewise, a high level of inflation is not compatible with sustained growth.

Sarel (1996) performs a study by applying a panel data regression model to data on 87 countries for the 1970-1990 period. The author finds that when inflation is low, it does not have any significant effect on economic growth and that the effect can even be slightly positive. However, when inflation is high, it has a negative effect on growth. This negative effect is statistically significant and very high. According to him, the turning point is reached when the average annual inflation rate is 8%.

Ghosh & Phillips (1998) in their study use the member states of the International Monetary Fund for the 1960-1996 period. They determine an optimal rate of inflation above which the relationship between inflation and growth changes sign. This rate is between 2 and 3%. They also find that inflation is one of the most important determinants of growth.

Bruno and Easterly (1998) perform a study on 31 countries, the majority being developing countries for the 1960-1994 period. They adopt a nonparametric approach and thus describe a country in severe crisis of inflation when this country has a level of inflation above 40% and evaluate the performance of this country during and after this inflation crisis. They find a negative relationship above 40%. They do not find a consistent relationship between inflation and economic growth, but however note that growth fades quickly in periods of a high increase in the rate of inflation.

Drukker et al. (2005) using a panel data model with dynamic threshold on data on 138 countries for the 1950-2000 period find an optimal rate of inflation of 19,16% but for the industrialized countries, this rate ranges between 2,57% and 12,61%.

By modelling the causality between inflation and economic growth in Nigeria for the 1970-2005 period, (Chimobi, 2010) through the Granger causality test finds a one-way causality going from inflation to economic growth.

3. Methodology

The data used in this study are all of secondary sources, coming from the annual publication of the World Bank in the «World Development Indicators Year book» contained in the CD–ROM (WDI, 2013). The study covers the period from 1970 to 2012.

3.1 Presentation of the Model

In order to achieve our first objective which is that of evaluating and comparing the effect of inflation on the economic growth between Cameroon and the Ivory Coast, the first model used in this study is a regression model with one independent equation which has several exogenous variables. The endogenous and exogenous variables are presented in turn.

i. Endogenous variable

Gross domestic product (Tx-cro) is the most common aggregate of national income accounting. The GDP measures the total quantity of goods and services produced by an economy (nation) expressed in monetary units.

ii. Exogenous variables

The rate of inflation (Tx-inf): the inflation variable is measured by the consumer price index following the example of (Claus, 1997), when he studies the relationship between inflation and growth; (Blix, 1995) when he studies the relationship between observed inflation and the growth of money supply; (Engone, 2003) when he studies the target level of inflation in the CEMAC zone. Inflation shows the level of price stability. It has an unpredictable effect on economic activity since the effect depends on its source and the expectations of economic agents. The structuralists believe that inflation is essential for growth while monetarists perceive it as harmful to economic progress.

The rate of investment (Tx-inv): We distinguish two types of investments: public investment and private investment. Total investment integrates these two types of investments. It is the percentage of the wealth of a country devoted to investment. According to the Keynesian analysis, the investment yields economic growth.

The debt ratio (Tx-end): According to certain economists like (Sachs & Roubini, 1989) and (Krugman & Venables, 1995), foreign loans have a positive effect on growth up to a certain threshold; beyond this threshold, its effect becomes negative. This threshold is estimated at approximately 50% of the GDP for the face value of the foreign debt and at 20-25% of the GDP for the estimated level of its net present value (NPV). Thus before

this threshold, the additional loans increase the probability of refunding of the debt and beyond this threshold, the chances that the debt is refunded decrease.

The savings rate (Tx-epa): The relationship between savings and economic growth is very close, but the direction of the effect of one of the elements on the other varies with the place given to savings. The place of savings determines the direction of the correlation. From the point of view of classical analysis, savings is considered as a source of economic growth, in the Keynesian analysis, saving is put at the secondary level, after investment. For the neo-classical economists; saving lead to growth, which in turn affects saving, establishing a virtuous circle.

The rate of imports **(**Tx-imp): It is an indicator which measures the share of imports in the GDP. It has a positive or negative effect on economic growth.

The rate of exports (Tx-exp): It is an indicator which measures the share of exports in the GDP. It has a positive or negative effect on economic growth. According to the international free trade theory, the exports and the imports are a source of economic growth.

3.2 Specification of the Growth Model

The growth equation retained in this study is based on (Phillips, 1958). We draw inspiration from Khan and Senhadji (2001). The specification of the growth model is given by the following equation:

$$Txcro_{(t)} = C + \alpha_0 Tx.end_{(t)} + \alpha_1 Tx.epa_{(t)} + \alpha_2 Tx.exp_{(t)} + \alpha_3 Tx.imp_{(t)} + \alpha_4 Tx.inf_{(t)} + \alpha_5 Tx.inv_{(t)} + \varepsilon_{(t)} \quad \forall t = 1\ldots, 43 \tag{1}$$

Where C is the constant, $\alpha_0 \ldots \alpha_5$ the coefficients of the variables to be estimated and ε_t is the error term.

Table 1. Expected signs of variables

Explanatory variables	Expected signs
Tx-Inf	+/-
Tx-Epa	+
Tx-IMP	+
Tx-Exp	+
Tx-Inv	+
Tx END	+/-

Source: Authors starting from literature Review.

3.3 Specification of the Causality Relationship

Our second objective consists in examining and comparing the causality relationship which exists between inflation and economic growth in Cameroon and the Ivory Coast. For this purpose, we use the Toda and Yamamoto causality test because the test of Engel and Granger is inappropriate.

The procedure of (Toda & Yamamoto, 1995) is carried out in two stages as follows. We first determine the maximum order of integration (dmax) of the series and the optimal number of lags (*K*) of the VAR process in levels. This stage is carried out using the tests of stationnarity. We then estimate a VAR in levels increased of order $p = k + d\,max$. If the series are stationary, only one additional lag is introduced into the VAR and the test procedure follows the standard approach. On the other hand, if the series are integrated of order one, then only one additional lag is introduced into the model. If Yt and INFt respectively denote the variable of growth of the GDP and Inflation, the model which is used as a basis to test causality is specified in the following manner:

$$Y_t = \beta_0 + \sum_{i=1}^{k} \beta_{1i} Y_{t-i} + \sum_{j=k+1}^{k+dmax} \beta_{2j} Y_{t-j} + \sum_{i=1}^{k} \phi_{1i}\, INF_{t-i} + \sum_{j=k+1}^{k+dmax} \phi_{2j}\, INF_{t-j} + \zeta_{1t} + \mu_{1t} \tag{2}$$

$$INF_t = \alpha_0 + \sum_{i=1}^{k} \alpha_{1i} Y_{t-i} + \sum_{j=k+1}^{k+dmax} \alpha_{2j} Y_{t-j} + \sum_{i=1}^{k} \phi_{1i}\, INF_{t-i} + \sum_{j=k+1}^{k+dmax} \phi_{2j}\, INF_{t-j} + \zeta_{2t} + \mu_{2t} \tag{3}$$

Where t is the trend; β_0, α_0 are the constants, Y_t and INF_t represent economic growth and inflation at the period t, *k* is the number of optimal lags of the model, dmax is the maximum order of integration of the variables, μ_{1t} and μ_{2t} respectively represents the random errors of the equations (2) and (3).

To carry out the causality test on the «augmented» model, we apply restriction tests only on the first *k* first coefficients. The other parameters are actually null and are a voluntary over-parameterization which is used to incorporate in the VAR the potentially cointegrated dimension of the variables. Thus, in the equation (2), the hypothesis that INF_t does not cause Y_t amounts testing the nullity of the coefficients Φ 1i. In the same manner, in the equation (3), the hypothesis that Y_t does not cause INF_t amounts to testing the nullity of the coefficients α_{1i}.

4. Presentation of Results

4.1 Test of Stationnarity in the Two Countries

The Augmented Dickey-Fuller (ADF) and Phillips Perron test are used to detect the possible presence of unit roots.

The results in the tables below show the order of integration of the variables for Cameroon and the Ivory Coast according to the (ADF, 1981 and Phillips Perron, 1988) tests. We find that the variables Tx-CRO and TX-INF are stationary i.e. I (0) both in Cameroon and in the Ivory Coast. While TX-IMP are non-stationary i.e. I(1) for the two countries. According to these tables, we can also say that the variables TX-END, TX-EPA, TX-EXP and TX-INV are stationary in Cameroon and non-stationary in the Ivory Coast.

Table 2. Result of the tests of stationnarity in Cameroon

Variables	ADF Test without constant With level (p-value)	PP Test without constant With level (p-value)	Order of integration	Decision on stationnarity
TX CRO	0 0017	0 0018	I(0)	YES
TX END	0.0997	0.6690	I(0)	YES
TX EPA	0.0961	0.1364	I(0)	YES
TX EXP	0.0322	0.0260	I(0)	YES
TX IMP	0.7076	0.5194	I(1)	NO
TX INF	0.0007	0.0007	I(0)	YES
TX INV	0.0899	0.1100	I(0)	YES

Source: the authors starting from the Eviews7 software.

Table 3. Result of the tests of stationnarity in the Ivory Coast

Variables	ADF Test without constant With level (p-value)	PP Test without constant With level (p-value)	Order of integration	Decision on stationnarity
TX_ CRO	0 0016	0 0017	I(0)	YES
TX_ END	0 9758	0.6788	I(1)	NO
TX_ EPA	0.1938	0.1558	I(1)	NO
TX _EXP	0.1786	0.1687	I(1)	NO
TX_IMP	0.6940	0.2617	I(1)	NO
TX_ INF	0.008	0.0073	I(0)	YES
TX_ INV	0.8142	0.7507	I(1)	NO

Source: authors using the Eviews 7 software.

4.2 Estimation of the Growth Model in the Two Countries

Given that the endogenous variable (growth rate) and the exogenous variable of interest (rate of inflation) are all stationary at levels both in Cameroun and in the Ivory Coast, using the principle of group stationarity, we estimate the growth equation in each country.

The first objective of this study is to evaluate and compare the contribution of inflation to economic growth in Cameroon and the Ivory Coast for the 1970-2012 period. Hypothesis 1 thus supposes that inflation contributed positively and significantly to economic growth both in Cameroon and the Ivory Coast for the 1970-2012 period. The results of the estimation of the growth equation in each country are summarized in the tables below.

Table 4. Estimates of the growth model for Cameroon

Variables	Coefficients	Standard deviations	t-statistics	t-statistics
C	-23.85568	6.979125	-3.418148	0.0017
TX_END	0.010803	0.008235	1.311755	0.1984
TX_EPA	0.124094	0.330087	0.375941	0.7093
TX_EXP	0.139845	0.470674	0.297115	0.7682
TX_IMP	0.449524	0.442212	1.016537	0.3166
TX_INF	0.082030	0.112747	0.727558	0.4719
TX_INV	0.408326*	0.217152	1.880370	0.0686
AR(1)	0.109512	0.178285	0.614253	0.5431
R-squared = 0.5050	Adjusted R-squared = 0.4032	F-statistic = 4.95	Prob (F-statistic) = 0.0006	

*represents significance at the 10% level.

Source: Author starting from the Eviews7 software.

Table 5. Estimates of the growth model for the Ivory Coast

Variables	Coefficients	Standard deviation	t-statistics	Probabilities
C	-0.427736	11.52471	-0.037115	0.9706
TX_END	0.012153	0.013922	0.872929	0.3888
TX_EPA	0.704874 **	0.336515	2.094627	0.0437
TX_EXP	-0.302432	0.252794	-1.196357	0.2398
TX_IMP	0.142765	0.356618	0.400329	0.6914
TX_INF	-0.352554 **	0.164904	-2.137935	0.0398
TX_INV	0.129316	0.202940	0.637214	0.5283
AR(1)	0.333472 *	0.179314	1.859704	0.0716
R-squared = 0.3544	Adjusted R-squared = 0.2215	F-statistic=2.66	Prob (F-statistic) = 0.025	

**, * respectively represent significance at the 5% and 10% levels.

Source: Authors starting from the Eviews 7 software.

The estimation of the growth model using the Ordinary Least Squares (OLS) method in Cameroon and the Ivory Coast yields an R^2 equal to 50.5% and 35.44% and an adjusted R^2 equal to 40.32% and 22.15% respectively in Cameroon and the Ivory Coast. The Fisher statistics of have a value of 4.95 and a probability of zero in the Ivory Coast whereas in Cameroon, it has a value of 2.66 and a probability of zero. This shows that the two models estimated above are globally significant.

We also find that the variables rate of savings and rate of inflation are all significant at the 5% level in the Ivory Coast. On the other hand, the rate of investment is significant at the 10% level in Cameroon.

This result also shows that the rate of inflation has a negative sign whereas the rate of saving has a positive sign in the Ivory Coast. This shows that the higher the rate of saving is, the higher the growth rate is; the higher the rate of inflation is the lesser the growth rate is. On the other hand, the higher the rate of investment is, the higher the growth rate in Cameroon. An increase in the rate of investment leads to an increase in the growth rate in Cameroon.

The rate of inflation does not have a significant effect on economic growth in Cameroon. On the other hand, it has a negative and significant impact on economic growth in the Ivory Coast. This result is compatible with that of the study by (Sarel, 1996) which models the relationship between inflation and economic growth in a sample of 87 countries for the 1970-1990 period using panel data regression model arrives at the conclusion according to which; when inflation is low, it does not have any significant effect on the economic growth, and the effect can even be slightly positive. But when inflation is high, it has a negative and statistically significant effect on growth. This result is explained by the fact that according to one of the objectives of the policies of convergence of the countries the CEMAC and UEMOA zones, the rate of inflation is limited to 3%. This low rate does not have any effect on economic growth Cameroon. Its negative effect on growth in the Ivory Coast appears only when the fluctuations and the level of inflation are very high. Moreover, in comparison with the criteria of convergence, one of the obstacles to the achievement of this target is the level of inflation which is not respected because of exogenous shocks (conflicts in the Ivory Coast, inflation of world food prices and imported inflation).

4.3 Result of the Toda and Yamamoto Causality Test

The highlighting of the causal relationship between economic variables allows a better appreciation of the economic phenomena. The analysis of causality provides additional information on the anteriority of the events and facilitates the application of optimized economic policies.

The Granger non-causality test provides the traditional Fisher statistics, making it possible to determine if a set of parameters of the VAR model are null. However, this test is not suitable when the variables are cointegrated in a stable VAR model as specified by (Phillips & Toda, 1993; and Gujarati, 1995). Many authors therefore tried to improve the power of the test of Granger non-causality through the construction of alternative procedures (Johansen & Juselius, 1990; Mosconi & Giannini, 1992; Phillips & Toda, 1993). But these procedures are not simple and convenient (Huang, 2005; Rambaldi & Doran, 1996; Shan & Sun, 1998). The procedure of (Toda & Yamamoto, 1995) however is simpler and gives convincing results.

In the presence of cointegration, the analysis of causality following the usual approach of Granger is no longer valid (Zortuk, 2009; Brida et al., 2008). In this case, the analysis of causality is frequently done according to the alternative procedure suggested by (Toda & Yamamoto, 1995). Their procedure consists in studying causality going from a VAR in levels of order ($k+d_{max}$) where K is the optimal number of lags and d_{max} is the maximum

order of integration; by applying the tests of restrictions only to the k first coefficients. In our case, k= 1 and d_{max} =1, which leads us to use a VAR of order 2. The results obtained on the basis of the test of Wald are summarized in the tables below:

Table 6. Results of the Toda and Yamamoto causality test for Cameroon

Null hypotheses	**Wald tests χ^2** statistic	**p-value**	Decision on causality
Tx_INF does not cause Tx_CRO	4.342129	0.1141	YES
Tx_CRO does not cause Tx_INF	3.122214	0,2099	YES

Source: Authors using the Eviews7 software.

Table 7. Result of the Toda and Yamamoto causality test for the Ivory Coast

Null Hypotheses	**Wald tests χ^2** statistic	**p-value**	Decision on causality
Tx_INF does not cause Tx_CRO	8.666947	0.0131	NO
Tx_CRO does not cause Tx_INF	3.389115	0.1837	YES

Source: Authors using the Eviews7 software.

A look at the tables above shows that the rate of inflation does not cause the economic growth rate in Cameroon but causes the growth rate in the Ivory Coast and that the economic growth rate does not cause the rate of inflation for the 1970-2012 period in the two respective countries because the respective p-values (0.2099 and 0.1837) are higher than 5%. There is therefore no relationship between economic growth and inflation in Cameroon for the 1970-2012 period. On the other hand, there is a one-way causality between inflation and economic growth (TX_INF→ TX_CRO) in the Ivory Coast during this same period. This one-way causality in the Ivory Coast is in line with the study by (Chimobi, 2010).

5. Conclusion and Recommandations

5.1 Conclusion

The main finding of this study is that the rate of inflation does not have a significant effect on economic growth in Cameroon. On the other hand, it has a negative and significant effect on economic growth in the Ivory Coast. This result is in line with (Sarel, 1996) who models the relationship between inflation and economic growth in a sample of countries for the 1970-1990 period using a panel data regression model and arrives at the conclusion that when inflation is low, it does not have any significant effect on economic growth, and that this effect can even be slightly positive. But when inflation is high, it has a negative and statistically very significant effect on growth. This result is further explained by the fact that according to one of the objectives of the policies of convergence of the countries of the CEMAC and UEMOA zones, the rate of inflation is limited to 3%. This low rate does not have any effect on economic growth in CameroonIts negative effect on growth in the Ivory Coast appears only when the fluctuations and level of inflation are significant. Moreover, as regards the criteria of convergence, one of the obstacles of attaining this target is the level of inflation which is respected with difficulty because of exogenous shocks (conflicts in the Ivory Coast, inflation of world food prices and imported inflation).

Another main finding of this study is the fact that there is no causal relationship between inflation and economic growth in Cameroon. Contrary to the case of Cameroon, we find a one-way causality from inflation towards economic growth in the Ivory Coast. This result is explained by the fact that according to one of the objectives of the criteria of convergence, the average annual inflation rate in the CEMAC zone is limited to 3%. This rate is below the threshold recommended and does not cause economic growth in Cameroon. This result is compatible with that of (Sarel, 1996) whereas the result in the Ivory Coast is compatible with those of (Chimobi, 2010). Thus, this one-way causality obtained means that inflation is a significant lever for the economic growth Of the Ivory Coast. Based on these findings, we make recommendations to economic agents.

5.2 Recommendations

Our recommendations are directed to the following economic actors: the Bank of Central African States (BCAS) and the Central Bank of West African States (CBWAS) which are responsible for the monetary policies in the CEMAC and UEMOA zones and the States that control the national economic activity in these countries.

- *Recommendations related to the actions of the BCAS and CBWAS*

Since the reforms financial liberalization of the Nineties, the BCAS and the CBWAS use indirect instruments to control liquidity in order to maintain the level of inflation at 3% for each zone. By doing this, the *BCAS* and the *CBWAS* grant little importance to the stability of economic activity, unlike other central banks such as the Federal Reserve (FED) which pursues a double objective: price stability and economic growth. To this end, we recommend to the monetary authorities of the two countries to integrate the economic growth target as one of these top priorities in order to support a sustainable and viable growth in each country.

We recommend to the monetary policy authorities of the Ivory Coast to implement the stabilization of the volatility of inflation because it reinforces uncertainty around the decision of the economic agents.

Studies have shown that the threshold of the rate of inflation is around 6% and 8% respectively in the CEMAC and UEMOA zones. At this threshold, the tradeoff between inflation and economic growth is possible. By choosing a rate of 3%, the monetary authorities of the two zones are depriving the Cameroonian and Ivorian governments of a significant lever of economic growth. Since any expansionist policy must integrate on the one hand, aspects related to competitiveness and on the other, the taking into account the credibility of such an action. This credibility is mainly ensured by the monetary cooperation and agreements (It is an agreement which fixes the general framework of the economic and financial co-operation between France and the countries of the UEMOA (or CEMAC**)**. This framework refers to the guarantee of the fixed parity and its requirements which are the centralization of the exchange reserves, the adoption of a uniform regulation of foreign financial relations and sanctions incurred in the event of the non-respect of this agreement) which bind the BCAS and the CBWAS to the euro zone. This pegging constrains countries of the two zones to more rigor in the practice of monetary policy. Consequently, we strongly recommend the countries of the two zones to break the monetary cooperation agreements between BCAS, the CBWAS and the euro zone.

- *Recommendations to the states*

Given that inflation causes the economic growth in the Ivory Coast, we recommend to the government of the Ivory Coast that before making forecasts on the growth rate in the country on a given horizon, it is preferable to initially predict the rate of inflation on this time horizon.

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