Oil price shock and economic growth: Experience of CEMAC countries

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OIL PRICE SHOCK AND ECONOMIC GROWTH :

Experience of CEMAC countries

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Abstract

The objective of this paper is to evaluate the impact of oil shocks on the GDP in CEMAC countries. We use a panel VAR model approach to the variation of the real GDP growth, oil price inflation rate and money supply between 2000 and 2015. Our main results show that CEMAC countries mostly depend on oil rent. Consequently, the analysis of impulsion response functions and the Variance Decompositions show that, the shock on oil price negatively affects the growth rate of the GDP. We then suggest CEMAC countries to diversify their production, the destination of their exports and the sources of Government budget receipts or takings.

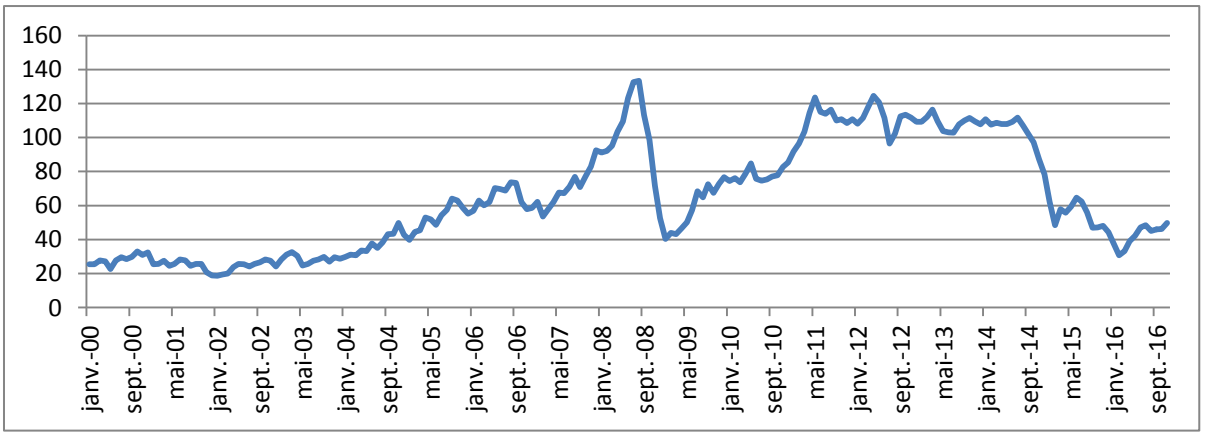
Key words: oil shock, GDP, Panel VAR

I- Introduction

Since 2014, the Central African Economic and Monetary Community (CEMAC) faces at the same time several types of shocks: securities (terrorist threats), politics (political crisis) and falling prices of natural resources. Concerning the persistent fall in the cost of natural resources, principally oil, started since June 2014, the cost of barrel passed from more than 100 US $, to less than 50 US $. Consequently, the economic growth curve in the zone follows a fall starting from 4.8 % in 2014 to 2.4 % in 2015, and in 2016, it is forecast at 1% .

The relation between oil price variables and the principal macroeconomic indicators was already the subject of numerous theoretical and empirical studies (Hamilton, (1983, 1988, 1996, 2003), Rasche and Tatom (1981), Mork (1989), Hooker (1996). This dynamic interest at the same time academicians, policy decision-makers, the actors of finance and of the civil society since the first crisis of oil triggered in 1970. So, a series of dramatic events in the 1970s sent the price of crude oil over $40 a barrel by the end of that decade, which would be over $100 a barrel at current prices. The price remained very volatile after the collapse in the 1980s but was still as low as $20 a barrel at the end of 2001 (Hamilton, 2009). After 2005, the barrel price remained above $60 despite the strong volatility. But since the fall in August 2014, the barrel price dropped below $60 in March 2015 and is maintained until now. The consequences of this strong decrease are dynamic for the exporting countries, in particular those of the CEMAC zone.

Figure 1 : Evolution of barrel price of January 1990.



Source: INSEE

This real decrease in barrel price influence the decisions of budgetary and monetary policies in function of the weight of the oil returns in the gross domestic product and the budgetary

returns. It is in this light that Copinschi (2015) brings out the weight of the oil rent in the Gross domestic product and the budgetary returns of CEMAC countries. Thus, in Cameroon, it is observed that the returns from oil represents 10% of Gross Domestic Product, 20% of the budget and represent 50% of export returns for a production of 75 000 barrel/d. In Congo, oil returns represents 50% of Gross Domestic Product, 75% of budgetary returns and 80% of export returns for a production of 281 000 barrel/d. In Gabon, oil returns represent 45% of Gross Domestic Product, 50% of budgetary returns and 70% of export returns for a production of 236 000 barrel/d. In Equatorial Guinea, oil returns represent 85% of Gross National Product, 85% of budgetary returns and 90% of export returns for a production of 281 000 barrel/d.

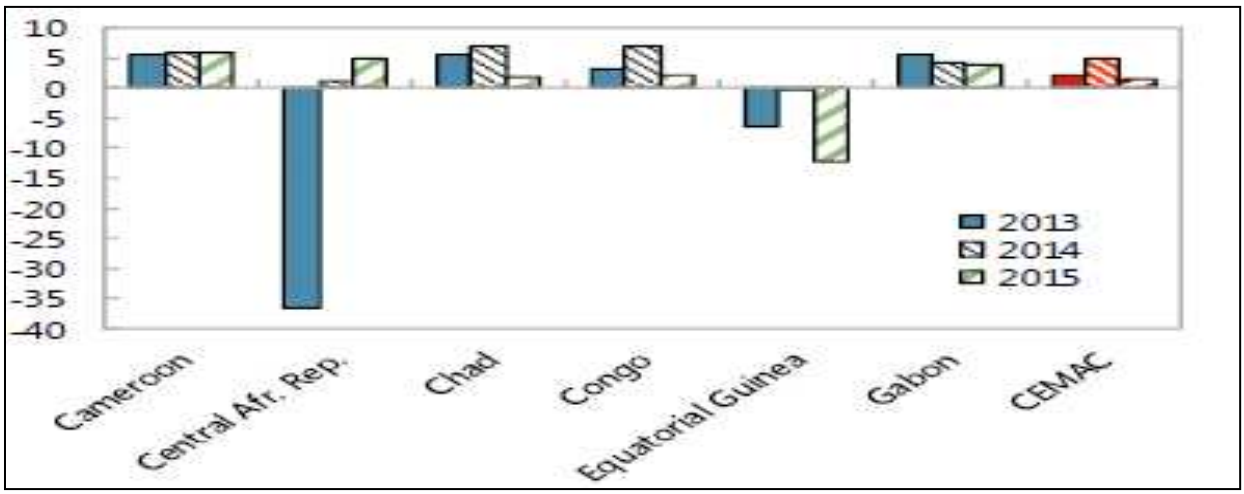
Table 1 : Relative Size of Economies and Importance of Oil Sector, 2015

	Country GDP/CEMAC's GDP	Country oil GDP/CEMAC's GDP	Country oil GDP/Country GDP	Country oil exports /country merchandise exports	Country fiscal oil revenue/ country fiscal revenue	Country external trade balance/ country GDP
Cameroon	38.7	1.8	4.7	38.5	14.1	-3.8
Central African Republi	2.2	0.0	0.0	0.0	0.0	-22.3
Chad	14.8	3.0	20.0	78.0	34.5	-15.5
Congo, Republic of	12.2	4.9	40.5	74.4	37.8	-14.6
Equatorial Guinea	12.8	3.8	30.0	81.4	81.6	41.7
Gabon	19.4	6.2	31.8	76.5	33.6	5.5
CEMAC	100.0	19.6	19.6	70.6	39.0	2.1

Source: IMF Country Report N° 16/290

Thus, in the IMF Country Report N° 16//277, it is shown that CEMAC growth was subdued in 2015. It slowed to 1.6 percent, from 4.9 percent in 2014, because of reduced public investment and lower oil production. Growth is projected to be 1.9 percent in 2016, as oil production and investment remain sluggish. From 2017 onward, growth is expected to reach 3½ percent a year, as oil prices gradually recover, some one percentage point below the average growth level of the past decade of high oil prices. Growth of money and credit to the economy turned negative in 2015 for the first time in a decade, contributing to keeping inflation low. The regional fiscal and current account deficits grew to 6 and 9 percent of GDP in 2015, respectively, as oil export proceeds fell by 32 percent. Continued low oil prices and high public expenditure will contribute to maintaining both deficits at about 6 and 8 percent of GDP in 2016, respectively.

Figure 2 : Real GDP Growth, 2013-2015



Source 1 : IMF country Report n° 16/277

Faced with the fall in oil returns, all countries of the region have, in the course of the year 2015, strongly reduce their public expenditures on investment, what aggravates the slowing effect of the economy by impacting the non-oil activity sectors but of which the financing greatly depends on oil returns (construction, etc.). Gabon and Congo has announced the important adjustments in the public expenditures and Cameroon has to follow. But it is in Equatorial Guinea that the recadrage is most severe: the amount of public investments for the year 2015 will experience a fall of close to 60% with respect to the previous year. Besides, the fall in foreign investments in the oil sector of these countries will equally have a negative impact on the growth of this year.

Considering this background, we study the macroeconomic dynamics between economic output growth, domestic price level, money supply and oil price over a set of CEMAC countries. To evaluate the relative importance of these variables in the movements of other variables in both short and long run, Impulse Response Functions (IRFs) and Forecast Error Variance Decompositions (FEVDs) are used.

II- Litteral Review

1- world

Many authors concentrated on analyzing the oil price-macroeconomic relationship (Hamilton, (1983, 1988, 1996, 2003), Rasche and Tatom (1981), Mork (1989), Hooker (1996)) The main results of the paper may be summarized as follows. Firstly, the linear (symmetric) oil price specification reveals that changes in oil price stimulate GDP growth in the short term, but

cause GDP to decline in the long term. Secondly, for non-linear (asymmetric) specifications, positive oil price shocks cause GDP to decline in the long term without experiencing growth in the short term. Another interesting finding is the response of output growth to negative (decreasing) oil price changes. Using negative oil price shock measures, GDP responds negatively in the short term, but eventually recovers although responses in the long term are not statistically significant (Aziz and Dahala (2015), Basnet and Upadhyaya (2015))

Ozturk (2015) analyzes the impact of oil price shocks on the selected macroeconomic variables in Turkey for the period of 1990Q1-2011Q4. Vector Auto regression (VAR) models and bivariate Granger causality tests are applied to determine the oil price shocks - macroeconomic relationship. The empirical findings shows that both symmetric and positive oil price shocks decrease industrial production, money supply, and imports while the negative oil price shocks increase imports.

Baumeister and Peersman (2013) Using time-varying BVARs, we find a substantial decline in the short run price elasticity of oil demand since the mid 1980s. This finding helps explain why an oil production shortfall of the same magnitude is associated with a stronger response of oil prices and more severe macroeconomic consequences over time, while a similar oil price increase is associated with smaller output effects. Oil supply shocks also account for a smaller fraction of real oil price variability in more recent periods, in contrast to oil demand shocks. The overall effects of oil supply disruptions on the US economy have, however, been modest.

Lutz (2008) A comparison of the effects of exogenous shocks to global crude oil production on seven major industrialized economies suggests a fair degree of similarity in the real growth responses. An exogenous oil supply disruption typically causes a temporary reduction in real GDP growth that is concentrated in the second year after the shock. Inflation responses are more varied. The median CPI inflation response peaks after three to four quarters. Exogenous oil supply disruptions need not generate sustained inflation or stagflation. Typical responses include a fall in the real wage, higher short-term interest rates, and a depreciating currency with respect to the dollar. Despite many qualitative similarities, there is strong statistical evidence that the responses to exogenous oil supply disruptions differ across G7 countries.

Aziz and Dahalan (2015) investigates the asymmetric effects of oil price shocks on real economic activities in ASEAN-5 from 1991 to 2014 using an unrestricted panel Vector Auto Regressive (VAR) method. Results from the impulse response function (IRFs) shows

evidence of an asymmetric relationship between oil prices and economic activities. Specifically, positive oil price shock measures negatively affect output growth both in the short term and in the long term. For oil price decrease specifications, real output responds negatively in the short term before recovering to its pre-shock level in the long term. The variance decomposition analysis (VDCs) also exhibit differences between the effects of positive and negative oil price shocks on economic activities, supporting the evidence of asymmetric relationship obtained in the IRFs simulations.

Brémond and al. (2014) study the relations between the price of oil and a large dataset of commodity prices, relying on panel data settings. Using second generation panel co-integration tests, our findings show that the WTI and commodity prices are not linked in the long term. Nevertheless, considering our results in causality tests, they show that short-run relations exist, mainly from the price of crude oil to commodity prices. We thus implement a Panel VAR estimation with an impulse response function analysis. Two main conclusions emerge: (i) fast co-movements are highlighted, while (ii) market efficiency is emphasized.

Blanchard and Gali (2007) characterize the macroeconomic performance of a set of industrialized economies in the aftermath of the oil price shocks of the 1970s and of the last decade, focusing on the differences across episodes. We examine four different hypotheses for the mild effects on inflation and economic activity of the recent increase in the price of oil: (a) good luck (i.e. lack of concurrent adverse shocks), (b) smaller share of oil in production, (c) more flexible labour markets, and (d) improvements in monetary policy. We conclude that all four have played an important role.

Cologni and Manera (2009) using a Markov-switching analysis for the G-7 countries show that positive oil price changes, net oil price increases and oil price volatility tend to have a greater impact on output growth. Moreover, their analysis suggests that the role of oil shocks in explaining recessionary episodes have decreased over time. Finally, they conclude that oil shocks tend to be asymmetric.

Hamilton (2008) explores similarities and differences between the run-up of oil prices in 2007–08 and earlier oil price shocks, looking at what caused these price increases and what effects they had on the economy. Whereas previous oil price shocks were primarily caused by physical disruptions of supply, the price run-up of 2007–08 was caused by strong demand confronting stagnating world production. Although the causes were different, the consequences for the economy appear to have been similar to those observed in earlier episodes, with significant effects on consumption spending and purchases of domestic

automobiles in particular. Absent those declines, it is unlikely that the period 2007Q4–2008Q3 would have been characterized as one of recession for the United States. This episode should thus be added to the list of U.S. recessions to which oil prices appear to have made a material contribution.

Mehrara and Mohaghegh (2011) study the macroeconomic dynamics in oil exporting countries using Panel VAR approach. On the basis of Impulse Response and Variance Decompositions analysis in a system included economic output, money supply, price index and oil price, we found that: (1) oil shocks are not necessarily inflationary; (2) money is not neutral in these countries; (3) money is the main cause of macroeconomic fluctuations; (4) oil shocks significantly affect economic output and money supply; (5) though oil price is highly driven by its own shocks, domestic shocks, particularly output and money shocks, can sizably affect oil price in the world market.

2- Africa

Nchor and al (2016) analysis effect of oil price shocks on the Ghanian economy. This is achieved through the use of Vector Autoregressive (VAR) and Vector Error Correction (VECM) models. The variables considered in the study include: real oil price, real government expenditure, real industry value added, real imports, inflation and the real effective exchange rate. The study points out the asymmetric effects of oil price shocks; for instance, positive as well as negative oil price shocks on the macroeconomic variables used. The empirical findings of this study suggest that both linear and nonlinear oil price shocks have adverse impact on macroeconomic variables in Ghana. Positive oil price shocks are stronger than negative shocks with respect to government expenditure, inflation and the real effective exchange rate. Industry value added and imports have stronger responses to negative oil price shocks.

Sanchez (2011) analyzed the welfare effects of rising oil prices in oil-importing countries using dynamic Computable General Equilibrium (CGE) model on six oil-importing counties (Bangladesh, El Salvador, Kenya, Nicaragua, Tanzania, and Thailand) for the period 1990–2008. He argues that oil price rise has significant adverse impact on GDP with an average annual GDP loss varying from 0.1% for Tanzania to 20% for Kenya.

Akinleye and Ekpo (2013) examine the macroeconomic implications of symmetric and asymmetric oil price and oil revenue shocks in Nigeria, using the vector autoregressive (var) estimation technique. The paper finds that both positive and negative oil price shocks influence real government expenditure only in the long run rather than in the short run, while

examining positive and negative shocks to external reserves revealed stronger implications for expenditure in the long run, with positive rather than negative oil price shocks having stronger short and long run effects on real GDP, and therefore triggering inflationary pressure and domestic currency depreciation as importation rises.

Apere and Ijomah (2013) investigates the time-series relationship on the impact of oil price volatility on macroeconomic activity in Nigeria using exponential generalized autoregressive conditional heteroskedasticity (EGARCH), impulse response function and lag-augmented VAR (LA-VAR) models. We found evidence that there is a unidirectional relationship exists between the interest rate, exchange rate and oil prices, with the direction from oil prices to both exchange rate and the interest rate. However, a significant relationship between oil prices and real GDP was not found.

Berument *et al.* (2010) in a study on Middle East and North African countries found the asymmetric effects of world oil price shocks on the GDP of Algeria, Iraq, Jordan, Kuwait, Oman, Qatar, Syria, Tunisia, and UAE to be positive and statistically significant, while positive but insignificant results were reported for Bahrain, Egypt, Lebanon, Morocco and Yemen.

III- METHODOLOGY

To investigate the sources of macroeconomics fluctuations in CEMAC countries, specifically in Cameroon, Chad, Congo Republic, Gabon, and Equatorial Guinea, with Panel VAR model.

Times series Vector Auto-Regression (VAR) models originate in the macro econometrics literature as an alternative to multivariate simultaneous equation models (Sims, 1980). In VAR models all variables are treated as endogenous and interdependent, both in a dynamic and in static sense, although in some relevant cases, exogenous variables could be included (Canova and Ciccarelli, 2013). Panel VAR have the same structure as VAR models, in the sense that all variable are assumed to be endogenous and interdependent, but cross sectional dimension is added to the representation (Canova and Ciccarelli, 2013).

Panel VAR have been used to address a variety of issues of interest to applied macroeconomists and policymakers. Bremond and al. (2014) studies the link between oil and Commodity prices with a panel VAR approach, Mehrara and Mohaghgeh (2011) studies the macroeconomic dynamics in oil exporting countries using Panel VAR approach.

III-1- Data

This paper uses four macroeconomics variables including real GDP growth, real oil prices, consumer index, and Supply money. Annually data from 2000 to 2015 is used for the

CEMAC countries. All data gathered from World Development indicator (WDI) database, but oil price of INSEE (Institut National de la Statistique et des Etudes Economiques) in France.

III-2- Model specification

To explore the importance of heterogeneities, dynamics, and simultaneous determination of oil price, real GDP growth, consumer index, Money Supply. We begin with the following baseline panel autoregressive distributed lag (ARDL) specification (Bremond and al. 2014):

$$Y_{i,t} = \alpha_i + A(L)Y_{i,t} + \varepsilon_{i,t}$$

Where i indicate the country, t runs from 1 to T, Y_{it} is the vector of endogenous variables, $\varepsilon_{i,t}$ is the vector of errors terms, $\alpha_i$is the country-group specific intercept matrix, and $A(L)$ is the matrix polynomial in the lag operator. The estimation is by generalized method of moment (GMM).

$$(Y_{it} = GGDP_{it}, oil\ prince_{it}, INFL_{it}, M2_{it})'$$

Where I denote the individual dimension composed by CEMAC country, and t=2000, …2015 the time. $GGDP_{it}$, oil $price_{it}$, $INFL_{it}$, and $M2_{it}$, denote real GDP growth, oil price, consumer index, Money Supply.

IV- Results

1- Data description, Unit Root, stability tests and cointegration test

1.1.Unit Root

Annexes 1 provide the unit root regression results of the variables entered in the model. We find that oil price, gross domestic product growth and money supply are stationary in first difference. Inflation is stationary at level.

1.2.Stability test

All the eigen values lie inside the unit circle, Panel Var satisfies stability condition.

Tableau 2: Stability test

Eigenvalue		**Modulus**
Real	**Imaginary**	
.8506035	**-.2951372**	**.9003512**
.8506035	**.2951372**	**.9003512**
.4237051	**0**	**.4237051**
.0265475	**0**	**.0265475**

2. Panel VAR estimation

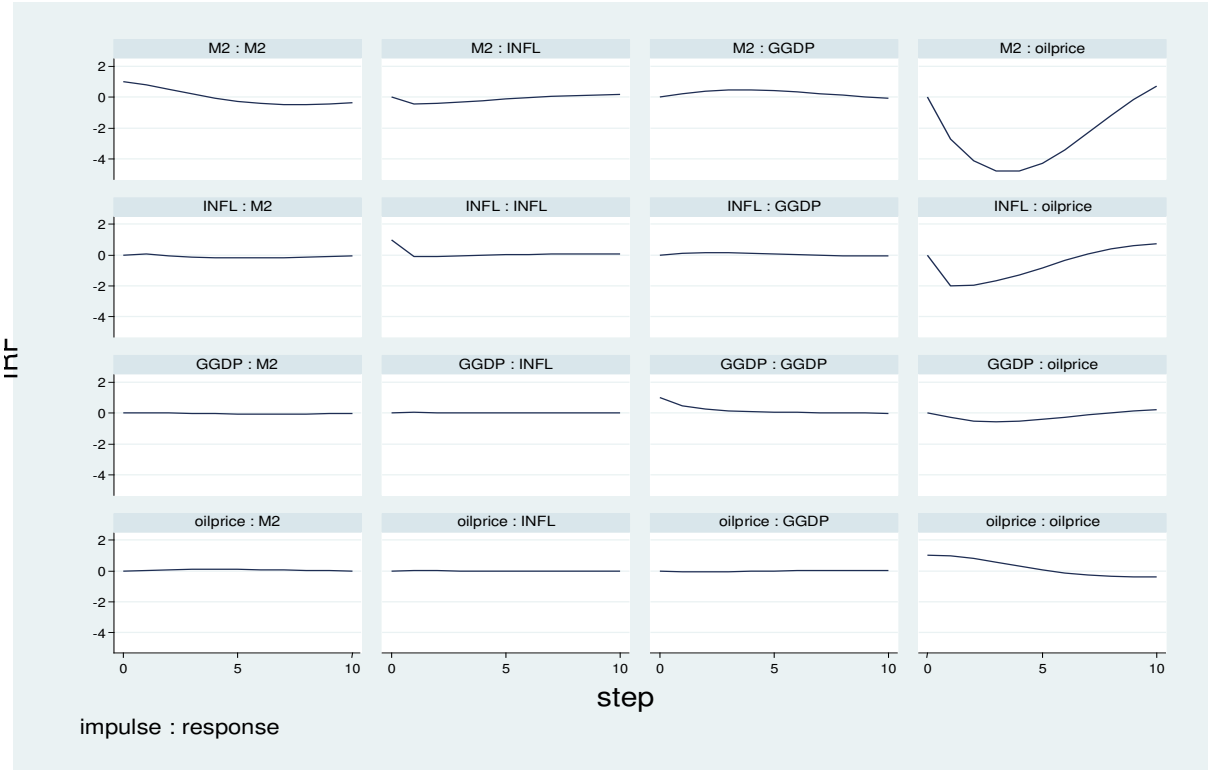
From our estimations, the GDP growth rate is negatively influenced by the price of oil and positively influenced by the level of inflation and money supply. Inflation is positively influenced by the price of oil and negatively by the money supply.

3. Impulse Response Function (IRF) Analysis

It is brought out of the functional analysis of impulse response that, the shocks on the prix of oil, on inflation and on money supply weakly contribute to fluctuations of the GDP growth rate. But, the shocks on the price of oil contributes more than the others. It is the main macroeconomic variable which influences the fluctuations of the GDP growth rate. From observations, the growth rate of NDP reacts to the shock as from the first periods. Later on, it starts stabilizing after the 5^{th} period.

It should also be noticed that, the shock in oil price strongly contributes to the fluctuation of money supply. This is currently observed in the strong reduction of liquidity in the BEAC zone. Inflation is also influenced by the fluctuations of oil price but slightly less than the money supply.

Figure 3 : Impulse Response Function (IRF)



4- Variance Decompositions

The analysis of the Variance Decompositions shows that at the first period, the fluctuation of the GDP growth rate do not depend only on the lag value of this growth rate and of the oil price. The other factors contribute to the fluctuations in growth rate as from the 2th period. For the rest of the periods, the contribution sum of inflation rates and money supply remains inferior to the contribution of oil price.

V- Conclusion

It comes from our previous analysis that, the CEMAC countries greatly depend on oil rent. In 2015, oil rent represented 4,7% of the GDP of Cameroon, 20% of the GDP of Chad, 40% of the GDP of Congo, 30% of the GDP of Equatorial Guinea and 31,8% of the GDP of Gabon. In a general manner, the oil rent represents 19,6% of the GDP of the CEMAC zone. Functional analysis of impulsional response and of the decomposition of the variance shows that, the shock on oil price, negatively affects the GDP growth rate. And this shock affects even more inflation and money supply. Moreover, the Variance Decompositions shows that, the shock on the oil price contributes more to fluctuations of the Gross Domestic Product than the inflation rate and money supply. In terms of policy recommendations, we then suggest, (i) to put in place a mechanism of sharing risk towards the exogenous shocks within CEMAC, (ii) reducing the dependency on the exportation of raw material, and densifying the intra CEMAC trade, (iii) diversifying the productions and the destinations of exportations, (iv) diversifying the sources of Government budget receipts, (v) reducing heterogeneities in order to render monetary policies more efficient.

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Annexes:

Annexe 1: Unit root test

Panel unit root test: Summary				
Series: D(GGDP)				
Date: 12/20/16 Time: 15:01				
Sample: 2000 2015				
Exogenous variables: Individualeffects, individuallinear trends				
User-specifiedlags: 1				
Newey-West automatic bandwidth selection and Bartlett kernel				
Balanced observations for each test				
			Cross-	
Method	Statistic	Prob.**	sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.35244	0.0000	5	65
Breitung t-stat	-6.34317	0.0000	5	60
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.76021	0.0000	5	65
ADF - Fisher Chi-square	37.9061	0.0000	5	65
PP - Fisher Chi-square	89.3865	0.0000	5	70
**** Probabilities for Fisher tests are computed using an asymptotic Chi**				
-square distribution. All other tests assume asymptotic normality.				

Panel unit root test: Summary				
Series: INFL				
Date: 12/20/16 Time: 20:00				
Sample: 2000 2015				
Exogenous variables: Individualeffects				
User-specifiedlags: 1				
Newey-West automatic bandwidth selection and Bartlett kernel				
			Cross-	
Method	Statistic	Prob.**	sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.12108	0.0000	5	67
Null: Unit root (assumes individual unit root process)				

Im, Pesaran and Shin W-stat	-3.79980	0.0001	5	67
ADF - Fisher Chi-square	32.9844	0.0003	5	67
PP - Fisher Chi-square	55.8292	0.0000	5	72
**** Probabilities for Fisher tests are computed using an asymptotic Chi**				
-square distribution. All other tests assume asymptotic normality.				

Panel unit root test: Summary				
Series: D(OIL_PRICE)				
Date: 12/20/16 Time: 16:09				
Sample: 2000 2015				
Exogenous variables: None				
User-specifiedlags: 1				
Newey-West automatic bandwidth selection and Bartlett kernel				
Balanced observations for each test				
			Cross-	
Method	Statistic	Prob.**	sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.44397	0.0000	5	65
Null: Unit root (assumes individual unit root process)				
ADF - Fisher Chi-square	28.5843	0.0015	5	65
PP - Fisher Chi-square	46.5007	0.0000	5	70
**** Probabilities for Fisher tests are computed using an asymptotic Chi**				
-square distribution. All other tests assume asymptotic normality.				

Panel unit root test: Summary				
Series: D(M2)				
Date: 12/20/16 Time: 16:05				
Sample: 2000 2015				
Exogenous variables: Individualeffects, individuallinear trends				
User-specifiedlags: 1				
Newey-West automatic bandwidth selection and Bartlett kernel				
Balanced observations for each test				
			Cross-	
Method	Statistic	Prob.**	sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-6.14226	0.0000	5	65
Breitung t-stat	-1.86444	0.0311	5	60
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.54554	0.0000	5	65
ADF - Fisher Chi-square	38.1602	0.0000	5	65
PP - Fisher Chi-square	77.7335	0.0000	5	70
**** Probabilities for Fisher tests are computed using an asymptotic Chi**				
-square distribution. All other tests assume asymptotic normality.				

Annexe 2: Panel VAR-Granger causality Wald test

Equation/Excluded		chi2	df	Prob
oilprice	GGDP	2,418	1	0,12
	INFL	8,947	1	0,003
	M2	2,161	1	0,142
	ALL	17	3	0,001
GGDP	oilprice	1,024	1	0,311
	INFL	0,213	1	0,644
	M2	0,356	1	0,551
	ALL	1,352	3	0,717
INFL	oilprice	1,132	1	0,287
	GGDP	0,934	1	0,334
	m2	1,503	1	0,22
	ALL	3,105	3	0,389
M2	oilprice	7,568	1	0,006
	GGDP	0,053	1	0,818
	INFL	1,011	1	0,315
	ALL	8,305	3	0,04

Annexe 3: Panel Vector Autoregression (GMM estimation)

	L1.	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
oilprice	oilprice	.991073	.1817967	5,45	0.000	.6347581	1.347388
	GGDP	-.2978365	.191518	-1,56	0.120	-.6732048	.0775318
	INFL	-1.999249	.6683857	-2,56	0.003	-3.30926	-.6892367
	M2	-2.722157	1.851696	-1,47	0.142	-6.351414	.9071008
GGDP	oilprice	-.050563	.0499574	-1,01	0.311	-.1484777	.0473517
	GGDP	.4635038	.1740421	2,66	0.008	.1223876	.8046201
	INFL	.1162443	.2518354	0,46	0.644	-.377344	.6098326
	M2	.2344472	.3928493	0,6	0.551	-.5355233	1.004418
INFL	oilprice	.0411436	.0386783	1,06	0.287	-.0346644	.1169517
	GGDP	.038541	.0398854	0,97	0.334	-.039633	.1167149
	INFL	-.1103765	.1762883	-0,63	0.531	-.4558953	.2351422
	M2	-.4259941	.3474316	-1,23	0.220	-1.106947	.2549592
M2	oilprice	.0430068	.0156337	2,75	0.006	.0123654	.0736483
	GGDP	.0055645	.0242345	0,23	0.818	-.0419343	.0530632
	INFL	.0597116	.0593917	1,01	0.315	-.0566939	.1761172
	M2	.8072593	.1405489	5,74	0.000	.5317885	1.08273

Annexe 3: Response variable and forecast horizon

Response variable and forecast horizon	
	impulse variable

		oilprice	GGDP	INFL	M2
oilprice	0	0	0	0	0
	1	1	0	0	0
	2	.8978778	.0053333	.0745763	.0222126
	3	.8346815	.0133794	.1019746	.0499645
	4	.7846813	.0193035	.1162055	.0798097
	5	.7457001	.0226544	.1235611	.1080845
	6	.7190945	.0239403	.1260716	.1308936
	7	.7057981	.0239276	.1252134	.1450609
	8	.7039962	.0234525	.1227213	.1498299
	9	.7089102	.0231763	.1203021	.1476115
	10	.7150543	.0233783	.1190008	.1425666
GGDP	0	0	0	0	0
	1	.013128	.986872	0	0
	2	.0329328	.963387	.002255	.0014251
	3	.05029	.9387494	.0060088	.0049518
	4	.0602804	.9204852	.0094463	.009788
	5	.0637276	.9098835	.0116871	.0147018
	6	.0638682	.9047521	.0127054	.0186744
	7	.0638477	.9020173	.0129293	.0212058
	8	.0654776	.8992737	.0128903	.0223584
	9	.0689943	.8954341	.0129823	.0225893
	10	.073538	.890632	.0133591	.0224709
INFL	0	0	0	0	0
	1	.0007111	.0099993	.9892896	0
	2	.0415465	.0240811	.906401	.0279715
	3	.0478949	.024275	.877414	.0504161
	4	.0470781	.0239207	.8639327	.0650685
	5	.0530775	.0236785	.8513259	.071918
	6	.069074	.0235808	.8344397	.0729055
	7	.0909836	.0237664	.8141103	.0711397
	8	.1124566	.0242415	.7939152	.0693868
	9	.1288868	.0248659	.7771369	.0691103
	10	.1387492	.0254625	.7653168	.0704714
M2	0	0	0	0	0
	1	.0119416	.0785761	.0037555	.9057269
	2	.0975508	.0614546	.021074	.8199206
	3	.3235916	.0499264	.015244	.611238
	4	.5124594	.0441101	.0273839	.4160466
	5	.6129952	.0428104	.0467568	.2974375
	6	.6516562	.0437013	.0646899	.2399526
	7	.6570356	.045243	.0785435	.2191778
	8	.6470363	.0466494	.0880173	.2182971
	9	.6324363	.0475542	.0934933	.226516

	10	.6199761	.0478455	.0956858	.2364927