Oil price volatility and macroeconomic determinants of growth: evidence from Morocco

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Oil price volatility and macroeconomic determinants of growth: evidence from Morocco

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Abstract:

Oil prices in the global market is usually found to be correlated with the economic growth of an economy. In this study, we make an attempt to investigate whether there is any significant relationship between oil prices and macroeconomic variables taking Morocco as a case study. We use the standard time series techniques such as, co-integration, long run structural modeling, vector error correction, and variance decompositions. We found a significant statistical relationship existing between inflation, oil price, trade balance, interest rate, and economic growth, whereby oil price and interest rate are significant macroeconomic variables on the economic growth of Morocco in the long run; and inflation and trade balance are significant on the economic growth in the short run. Oil price was found to have no impact on the economic growth in the short run. We also found evidence that exchange rate was insignificant. The results appear to be plausible and contain strong policy implications.

Keywords: Oil price; Macro economic determinants of economic growth, Morocco

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1. Introduction

Discussions on economic growth in the developing countries has taken a central stage among policy makers and economic and financial analysts in the recent years, and Morocco is not an exception. The main objective of Moroccan government is to maintain a sustainable economic growth in order to face major challenges like raising economic growth, reducing poverty and unemployment and its economic integration into the world economy.

There are many factors which contribute to the maintaining of sustainable economic growth of Morocco. Yet, the measurement of such is difficult due to many determinants which contribute simultaneously to economic growth. Therefore, in this study, I will precisely investigate the impact of interest rate, exchange rate, inflation, oil price, and trade openness on economic growth and to examine their contribution toward economic development of Morocco.

Interest rate is very important factor in predicting the trend of future economic growth. If the economic growth increases in future then interest rate spread will be lower. If economic growth decreases the opposite will happen. Thus, the effect of interest rate on economic growth is inevitable. Also, Empirical results show that there is negative relation between inflation and economic growth. When inflation is on increase, it reduces the investment which has bad effect on the economic growth.

The exchange rate is another important factor that affects the economic growth of countries including Morocco. Traditionally, it is known that volatility lowers the exports. Exchange rate appreciation decreases exports and encourages imports. Hence, if the exchange rate is appropriately valued, it will not influence the macroeconomic variables and macroeconomic performance of the country.

One of the main constraints of the economic development in Morocco is the surge of oil prices. High oil prices have direct effects on Morocco, a net oil importing country, as the trade balance deficit widens. Hence, oil prices put more pressure on the government budget as domestic prices are heavily subsidized. For this reason, the Moroccan government keep implementing trade reforms to ensure greater integration into the global economy, and achieve acceptable economic performance.

Traditionally, economic theory explains the development of trade through comparative advantage or resource abundance, recent efforts, as part of dynamic analysis, provide a positive long-term level and the change in openness on growth. But the problem of empirical measure of trade openness remains.

2. Problem statement and research questions

Morocco is an emerging country which depends essentially on the yield of agricultural activity, phosphate mining, and imports to complement its economic needs. It also follows a controlling policy of interest rate, inflation, and exchange rate as well as subsidize domestic prices including oil prices. The studies examining the relationship of macroeconomic variables on the economic output are numerous but scarce in the case of Morocco, and the ones existing are outdated. Therefore, the motivation behind conducting this study is to investigate the significance of abovementioned macro-economic variables on the economic growth of Morocco and therefore enrich the existing literature. In this context, the problem statement is to identify which explanatory variables impact significantly Moroccan economic growth. For this reason, we will address the following research questions: what are the impacts of the key macroeconomic variables on the economic growth in Morocco? And what are the policy implications?

To answer these questions, this paper will be divided into 5 sections. After the introduction, we

will explore the literature review in section 2. In section 3, we will present methodology, results, and interpretation, then conclude, in section 4, with a summary of study and the suggested policy implications.

3. Review of literature

Many research studies have approached the macroeconomic variables affecting the economic growth. Each of these studies have laid emphasis on different variables and offered various understandings to the drivers of economic growth. However, the existing literature has not yet reached a consensus about a typical set of variables that may affect economic growth

Interest rate, exchange rate, and inflation rate has been widely identified in the literature and they are empirically proved to affecting economic growth. Kashif et al. (2016) found that there's a significant effect of inflation rate, interest rate and exchange rate of economic growth, whereby the inflation rate and interest rate had a negative impact while exchange rate possessed positive relation to economic growth.

Similarly, a study conducted by Chughtai et al. (2015) indicate a significant effect of interest rate, exchange rate, and inflation on economic growth of Pakistan. Both inflation rate and exchange rate have positive impact on Pakistan’s economic growth while exchange rate was found positively significant on the economy. Nevertheless. The study confirmed that the influence of these variables still have less effect compared to other factors such as political instability, security concerns, and foreign debts.

Sajid et al. (2014) statistically and empirically found that inflation and interest rate have negative and significant association with GDP growth. Agalega & Antwi (2013) wrote that there exist positive relationship between inflation and GDP but the interest rate is negative.

Similar studies were conducted by various researchers with slightly different topics having

similar results. Ramzan et al. (2013) investigated the impact of trade openness, employment rate, exchange rate, foreign direct investment, inflation rate on GDP growth of Pakistan. The result showed that a long-term significant relation between all variables exist. Hassen et al. (2013) analyzed the impact of trade openness on economic growth in the case of Tunisia and he found that trade openness has a long-term positive and significant effects on economic growth.

On the other hand, Oil prices was theoretically assumed to have a significant impact on the economic growth of both exporting and importing countries including Morocco. A quite number of studies was conducted in this respect. Si Mohammed et al. (2016) conducted a cross-section study in eight oil-exporting and non-oil exports countries in the Middle East and North African region, and the results showed a negative correlation between oil and GDP in Morocco and Tunisia and a negative correlation between CPI and oil in Morocco compared to other countries. In addition, the interest rate was found well correlated with oil prices in both importing and exporting oil countries except Turkey, Morocco, Algeria and Kuwait.

Necibi & Issaoui (2013) found a long-term relation which showed that the GDP positively and significantly dependent on Brent oil price and on the inflation in a structure of administered price. This study was supported by Lahrech et al (2014) who wrote that oil, MASI index and the Moroccan economic sectors are significantly correlated; and bentour (2014) who found that the irregular rainfall and instability of oil prices increase the volatility of economic growth and the uncertainty around growth forecasts. Similarly, Brini et al. (2016) empirically revealed that, in the long run, oil price fluctuations have the major impact on real exchange rate of the oil-importing countries (Tunisia and Morocco) while the impact on inflation is smaller and absorbed by the rigidity of subsidized products prices.

We can observe that most of the studies focus on the impact of macroeconomic key variables

on economic growth. But, poor literature related to the Moroccan context especially daily and monthly data. As a result, a wide variety of macroeconomic variables are chosen in this study which will use monthly data to measure the impact of these variables on economic growth of Morocco.

4. Methodology

This study employs a time series technique which is most favored over linear regression due to the fact it tests theoretical long term relationship between variables, it lets the data itself to determine exogenously and endogenously of variables, and it embraces the dynamic interaction between variables

Data was sourced out from DataStream, and monthly times series data used covering the period from 2007 to 2016 in Morocco on Real Industrial Production (rip) which is used as a proxy for Economic growth, interest rate (INT), exchange rate (EX), inflation rate (CPI) , oil price (OIL), and trade openness (TB). Different econometric tools used in this study, in particular, are unit root test, cointegration test, error correction modelling, and variance decomposition in order to measure the empirical nature of the relations between such variables.

5. Results and interpretation

5.1.Testing stationarity of variables[1]

We begin with this step because it help in running cointegration test in step 3 later. We make our variables I (1) where they are non-stationary in their original form and stationary in their first differenced form. The differenced form for each variable used is created by taking the difference of their log forms. For example, DDXE = LDXE – LDXEt-1. We then conducted the Augmented Dickey-Fuller (ADF) test on each variable (in both level and differenced form).

[1] when the mean, variance, and covariance does not change over time

The table below summarizes the results.

Table 1a- Augmented Dickey-Fuller ADF test
Variables in Level FORM

Variables	T- Statistics	Critical Value	Implication
LXE	-3.1543	-3.4504	Non-Stationary
LCPI	-3.2189	-3.4504	Non-Stationary
LIPI	-2.0985	-3.4504	Non-Stationary
LTB	-3.2355	-3.4504	Non-Stationary
LINT	-1.9125	-3.4504	Non-Stationary
LOIL	-2.2343	-3.4504	Non-Stationary

Table1b- Augmented Dickey-Fuller ADF test
Variables in Difference FORM

Variables	T- Statistics	Critical Value	Implication
DXE	2.9153	-2.8877	Stationary
DCPI	-4.9565	-2.8877	Stationary
DIPI	-5.0293	-2.8877	Stationary
DTB	-5.477	-2.8877	Stationary
DINT	-5.1261	-2.8877	Stationary
DOIL	4.7225	-2.8877	Stationary

It can be concluded that all the variables are I(1) and this indicates that we can move to the cointegration test[2]. We compared the t-test of all the variables with the critical value 95% based on the highest computed value for AIC and SBC criteria.

5.2.Determination of Order of the VAR Model

Our concern in this step is to determine the order of the Vector Auto regression. In other words, how many lags will be used in this regression. The results indicate that AIC provides an order of (2) two and SBC recommends 0 lags.

5.3.Testing cointegration

After establishing the variables are I(1) and determining the optimal VAR order as 2, that means we can test for cointegration to know whether the chosen variables are or are not moving together. The results in the below table showed that we have one cointegration.

[2] The null hypothesis for the ADF test is that the variable is non-stationary. In all cases of the variable in level form, the test statistic is lower than the critical value and hence we cannot reject the null. Conversely, in all cases of the variable in differenced form, the test statistic is higher than the critical value and thus we can reject the null and conclude that the variable is stationary (in its differenced form).

Table 2: Test of Cointegration Granger Unit rook test for residuals

	T-statistics	DF statistics 95%
LXE	-3.7567	-4.8599
LCPI	4.42679	-4.8599
LIPI	-4.4878	-4.8599
LTB	-4.1284	-4.8599
LINT	-4.6007	-4.8599
LOIL	-3.384	-4.8599

As depicted in the table below, the maximal Eigenvalue, Trace and HQC indicate that there are two cointegrating vector whereas according to AIC and SBC, there are 6 and zero cointegrating vectors, respectively[3].

Table 3: Test of Cointegration Johansen Maximal Eigen value

Criteria	Null	Alternative	Statistics	95% Critical Value	Number of conintegration
Maximal Eigen value			50.7066	43.61	2
			43.8141	37.86	
Trace	r=0	r=1	165.8072	115.85	2
	r<= 1	r = 2	115.1006	87.17	
				AIC	6
				SBC	0
				HQC	1

The results indicate that there is two cointegrating vector as the macroeconomic variables are theoretically connected with other, that is each macroeconomic variable will either affects or be affected by the other variable to varying degrees. Therefore, *we shall assume based on the obtained results that there are two cointegrating vector.*

From a statistical perspective, the chosen variables results in a stationary error term and this

[3] In the case of Maximal Eigenvalue and Trace, the test statistic for null of r = 0 is greater than the 95% critical value whereas for other null hypotheses, statistic is less than the critical values. For AIC, SBC and HQC, the number of cointegrating vectors is obtained by locating the highest numbers.

can be interpreted by the fact that the (6) variables are theoretically related to each other, or moving together in the long term. Also, it can be said that these variables are co-integrated and their relation do not take place by chance[4]. The implication of this result to policy makers is that each variable should be taken into consideration because the co-integrated macroeconomic variables would realign themselves over the long term relationship with each other.

5.4.Long Run Structural Modelling (LRSM)

Next, we attempt to quantify this apparent theoretical relationship among the indices. We do this in order to compare our statistical findings with theoretical expectations. Relying on the Long Run Structural Modelling (LRSM) component of MicroFit, and normalizing our (6) chosen variables, we initially obtained the results in the following table.

Calculating the t-ratios manually, we found (1) variable to be significant which is the interest rate LINT.

Table 4: LRSM - Over identification and exact identification

Variable	Coefficient	Standard Error	t-ratio	implication
LXE	0.80851	0.85887	0.941365	insignificant
LCPI	-0.80249	1.2169	-0.65945	insignificant
LIPI	1	*NONE*	*NONE*	NONE
LTB	0.031311	0.050572	0.619137	insignificant
LINT	0.41665	0.16736	2.489543	significant *
LOIL	-0.12665	0.080015	-1.58283	insignificant

Variable	Coefficient	Standard Error	t-ratio	implication
LXE	0	*NONE*	NONE	NONE
LCPI	0	*NONE*	NONE	NONE
LIPI	1	*NONE*	NONE	NONE
LTB	0	*NONE*	NONE	NONE
LINT	0.33113	0.0869	3.810472	significant **
LOIL	-0.06556	0.01909	-3.4341	significant **

**LR Test of Restrictions CHSQ(3)= 1.7018[.637]

The obtained results were interesting and made us so curious why only one variable is found to be significant and the others are non-significant. Therefore, we decided to verify the significance of the variables by subjecting the estimates to over-identifying restrictions. We did this for all the variables (making one over-identifying restriction at a time) and the results

[4] Incidentally, this cointegration can also be proven by virtue of the fact that in the VECM (discussed below), there is at least one variable that is shown to be endogenous (the change in the variable is significantly related with the error correction term et-1).

confirmed earlier findings but another variable turns to be significant which Oil Price (LOil).

However, interestingly, when we made the over-identifying restrictions all at once, that is, testing the null hypothesis that CPI, IPI, and TB were all insignificant, the null hypothesis is not rejected, or in other words, that set of restrictions are correct.

This latest observation confirmed our earlier hunch, that oil and interest rate were actually significant variables. Applying our intuition, we are more inclined that to believe that the significance of the interest rate and oil is due to that Morocco is a major oil importing country and the significant fall in oil prices in the world market is expected to affect the Moroccan economy positively in the long run. The funds spent on the importing of oil could generally spent on major sectors in the economy, which could bring impact over the long term. On the other hand, interest rate is significant due to the stability of the financial sector, in particular, the Moroccan banking sector showing a greater resilience against the international turbulences in the financial market.

From the above analysis, we arrive at the following cointegrating equation (numbers in parentheses are standard deviations):

LIPI= 0.33113 LINT -0.065557 LOIL +0.0005 E

5.5.Vector Error Correction Model VECM

From our analysis thus far, we have established that at least (2) two variables are co-integrated to a significant degree, interest rate and oil. However, the cointegrating equation reveals nothing about causality, that is, which variable is leading and which variable is lagging. Information on direction of Granger-causation can be particularly useful for policy makers. By knowing which variable is exogenous and endogenous, policy makers can better forecast or predict expected results of their economy. Typically, a policy maker would be interested to know which variable is the exogenous one then he would closely be make some short-term

policy adjustments to stabilize the economy and prevent from external socks. This exogenous variable would be of much interest to the policy maker.

In light of this, the next part of our analysis involves the Vector Error Correction Model (VECM). Here, in addition to decomposing the change in each variable to short-term and long-term components, we are able to ascertain which variables are in fact exogenous and which are endogenous. The principle in action here is that of Granger-causality, a form of temporal causality where we determine the extent to which the change in one variable is caused by another variable in a previous period. By examining the error correction term, et-1, for each variable, and checking whether it is significant, we found that there are (2) exogenous variables, inflation (CPI) and trade balance (TB), as depicted in the table below. The other variables were found to be endogenous.

Table 5: VECM Results

Variable	ECM-1 (p-value)	implication
LXE	0.026	Endogenous
LCPI	***0.608***	***Exogenous***
LIPI	0.004	Endogenous
LTB	***0.367***	***Exogenous***
LINT	0	Endogenous
LOIL	0.033	Endogenous

The implication of this result is that, as far as the economy is concerned, the variables of interest to policy makers would be inflation and trade balance. In the Moroccan context, the policy maker should take the necessary measures to control domestic prices to maintain the purchasing power of people and therefore keep the economic going up. At the same time, though, Moroccan economy heavily depends on imports compared the volume of its export, the government should focus on measures to increase production and the output of the economy.

In addition, the VECM produces a statistic that may be of interest to policy makers. The coefficient of et-1 tells us how long it will take to get back to long term equilibrium if those

variables are shocked. The coefficient represents proportion of imbalance corrected in each period.

5.6.Variance Decomposition (VDC)

Whilst we have established that inflation and trade balance are the exogenous variables, we have not been able to say anything about the relative endogeneity of the remaining variables. In other words, of the remaining variables, which is the most lagging variable compared to others, or, the least lagging? As the VECM is not able to assist us in this regard, we turn our attention to variance decomposition (VDC). Relative endogeneity can be ascertained in the following way. VDC decomposes the variance of forecast error of each variable into proportions attributable to shocks from each variable in the system, including its own. The least endogenous variable is thus the variable whose variation is explained mostly by its own past variations.

We started out applying orthogonalized VDCs and obtained the following results:

Forecast at Horizon = 6 (months), 12 (months), 18 (months), 24 (months), 30 (months), 36 (months), and 48 (months) as summarized below:

Table 6: Orthogonalized VDC Variables relative Exogeneity

No.	6m	12m	18	24	36	48
1	LCPI	LCPI	LCPI	LCPI	LCPI	LCPI
2	LIPI	LIPI	LIPI	LIPI	LIPI	LIPI
3	LOIL	LTB	LTB	LTB	LOIL	LOIL
4	LTB	LOIL	LOIL	LOIL	LTB	LTB
5	LXE	LXE	LXE	LXE	LXE	LXE
6	LINT	LINT	LINT	LINT	LINT	LINT

6

Variable	LCPI	LINT	LIPI	LOIL	LTB	LXE	
LCPI	95.64%	0.04%	3.91%	0.01%	0.33%	0.07%	100.00%
LINT	0.19%	57.41%	12.18%	29.66%	0.01%	0.54%	100.00%
LIPI	2.36%	10.01%	84.93%	0.83%	0.04%	1.82%	100.00%
LOIL	1.86%	0.19%	16.65%	81.20%	0.01%	0.08%	100.00%
LTB	0.10%	0.50%	1.75%	17.65%	78.21%	1.79%	100.00%
LXE	2.21%	9.50%	4.56%	21.35%	0.31%	62.09%	100.00%
LPC							0.00%

48

Variable	LCPI	LINT	LIPI	LOIL	LTB	LXE	
LCPI	95.23%	0.03%	4.29%	0.03%	0.34%	0.07%	100.00%
LINT	0.12%	27.62%	21.29%	49.87%	0.01%	1.10%	100.00%
LIPI	3.06%	15.09%	78.41%	1.82%	0.04%	1.58%	100.00%
LOIL	2.48%	0.09%	22.31%	75.03%	0.02%	0.08%	100.00%
LTB	0.03%	0.61%	2.63%	21.89%	73.06%	1.79%	100.00%
LXE	2.42%	11.13%	6.61%	18.34%	0.28%	61.23%	100.00%
LPC							0.00%

According to these results, the ranking of variables by degree of exogeneity (extent to which variation is explained by its own past variations) is shown above.

We found this result somewhat realistic. This is because, from the previous VECM analysis, we determined that inflation was exogenous variable. However, trade balance was found to be relatively exogenous but ranking (4) in the order. This could be due to the orthogonalized VDC calculations of the relative exogeneity is biased towards order of ranking. In other words, it assumes that when a particular variable is shocked, all other variables are "switched off". Secondly and more importantly, othogonalized VDCs do not produce a unique solution. The generated numbers are dependent upon the ordering of variables in the VAR. Typically, the first variable would report the highest percentage and thus would likely to be specified as the

most exogenous variable.

5.7.VDC generalized

Following this discovery, we decided to rely instead on Generalized VDCs, which are invariant to the ordering of variables. In interpreting the numbers generated by the Generalized VDCs, we need to perform additional computations. This is because the numbers do not add up to 1.0 as in the case of orthogonalized VDCs. For a given variable, at a specified horizon, we total up the numbers of the given row and we then divide the number for those variable (representing magnitude of variance explained by its own past) by the computed total. In this way, the numbers in a row will now add up to 1.0 or 100%.

The tables below show the result.

Forecast at Horizon = 6 (months), 12 (months), 18 (months), 24 (months), 30 (months), 36 (months), and 48 (months) as summarized below:

Table 7: Generalized VDC Variables relative Exogeneity

No.	6m	12m	18	24	36	48
1	LCPI	LCPI	LCPI	LCPI	LCPI	LCPI
2	LIPI	LIPI	LIPI	LIPI	LIPI	LIPI
3	LTB	LTB	LTB	LTB	LTB	LTB
4	LXE	LXE	LXE	LXE	LXE	LXE
5	LOIL	LOIL	LOIL	LOIL	LOIL	LOIL
6	LINT	LINT	LINT	LINT	LINT	LINT

6							
Variable	LCPI	LINT	LIPI	LOIL	LTB	LXE	
LCPI	95.97%	0.08%	2.46%	0.03%	0.86%	0.61%	100.00%
LINT	0.19%	54.93%	12.91%	24.99%	0.06%	6.93%	100.00%
LIPI	2.20%	9.44%	82.76%	1.73%	0.10%	3.78%	100.00%
LOIL	1.46%	0.14%	13.33%	65.65%	0.13%	19.29%	100.00%
LTB	0.09%	0.49%	1.79%	17.71%	78.41%	1.51%	100.00%
LXE	1.70%	7.20%	3.10%	15.84%	0.56%	71.60%	100.00%

48							
Variable	LCPI	LINT	LIPI	LOIL	LTB	LXE	
LCPI	95.86%	0.01%	2.70%	0.09%	0.91%	0.43%	100.00%
LINT	0.11%	26.62%	23.00%	42.46%	0.02%	7.79%	100.00%
LIPI	2.78%	13.89%	75.94%	3.18%	0.07%	4.14%	100.00%
LOIL	1.93%	0.06%	17.60%	60.23%	0.13%	20.06%	100.00%
LTB	0.02%	0.58%	2.66%	21.74%	72.92%	2.07%	100.00%
LXE	1.88%	8.52%	4.59%	13.75%	0.59%	70.68%	100.00%

From the above results, we can make the following key observations:

a) The Generalized VDCs confirm the results of the VECM in that inflation is the most exogenous variable.

b) The relative rank in exogeneity is somewhat stable as time passes. Between 6 months and 48 months, there is only one change in the ranking oil and trade balance switching places)

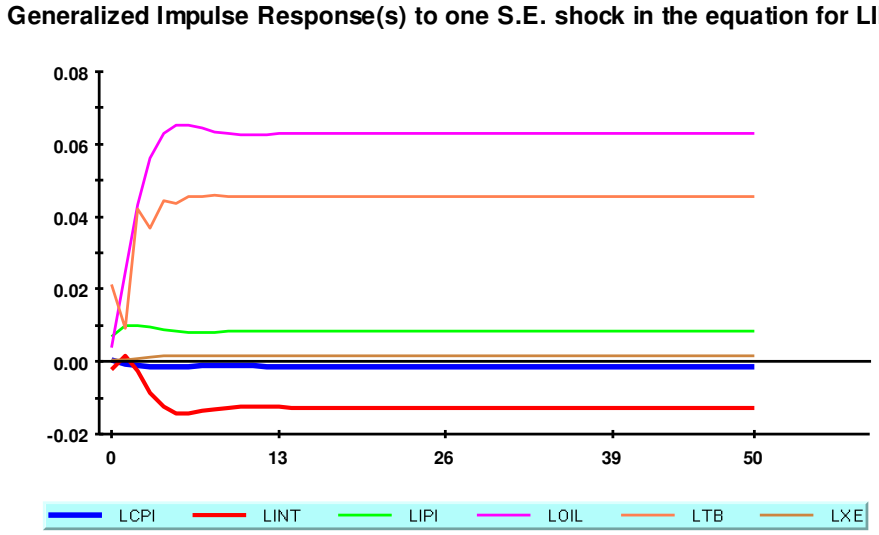
c) The difference in exogeneity between the variables is not substantial.

The above results would have the following plausible implications for policy makers. It appears that inflation is the most determinant of economic growth in Morocco in the short run. This is followed by trade balance. It is not surprising to see that oil prices and interest rate being the least influential, as Morocco is an oil importing country. The impact of falling oil prices does not have any short term impact on the economic growth of the country, but in the long run, it has a significant impact on the economic growth as confirmed earlier by the granger causality.

The small difference in relative exogeneity could be explained by the unpredictability of the oil market and ongoing uncertainty surroundings the GCC and the global market in general.

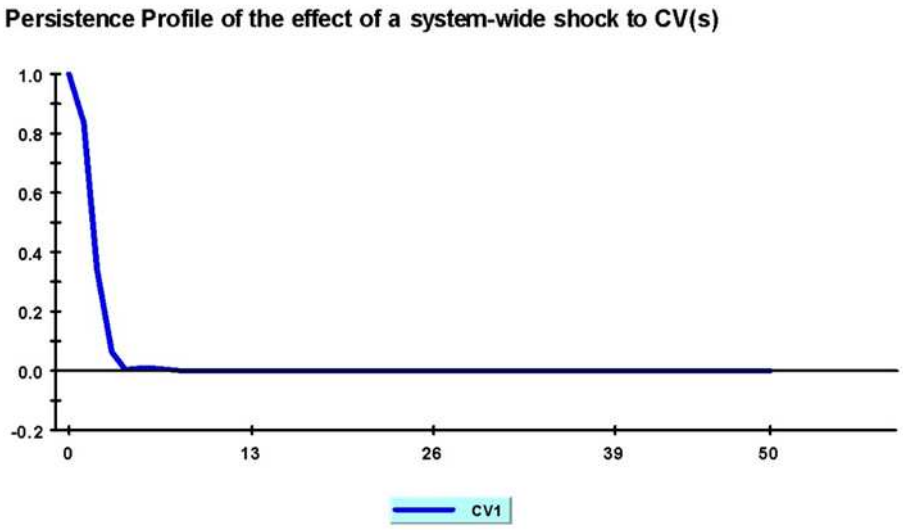
5.8.Impulse Response Functions (IRF).

The impulse response functions (IRFs) essentially produce the same information as the VDCs, except that they can be presented in graphical form as shown below:



5.9.Persistence profile

The persistence profile illustrates the situation when the entire cointegrating equation is shocked, and indicates the time it would take for the relationship to get back to equilibrium. Here the effect of a system-wide shock on the long-run relations is the focus (instead of variable-specific shocks as in the case of IRFs). The chart below shows the persistence profile for the cointegrating equation of this study.



6. Conclusions and Policy implications:

In conclusion, we revisit the main research question posed at the onset of this study. It was observed that oil price and interest rate are the most significant macroeconomic variables to the economic growth of Morocco on the long run. However, in the short run, inflation and trade balance are the key macroeconomic determinants of the economic growth.

The falling oil prices in the global market does not have any impact on the Moroccan economy in the short run, because when the oil prices falls, the Moroccan government will save a great proportion of funds to be spend on infrastructure and reducing the rate of unemployment and poverty but the outcomes of this will show up in the long run.

The exchange rate failed to show any significant impact on the Moroccan economy. This is in line with theory of international trade, based on the fact that the Moroccan currency (Dirham) is paged to a basket of strong currencies mainly USD by 60% and the EURO by 40%. Therefore, our findings supports the paging of Moroccan currency against the recent announcement by the Central Bank of Morocco to shift to floating policy. Therefore, further research may focus on the impact of floating currency on the macroeconomic determinants of the Moroccan economy.

As limitations of this study, it could be said that the choice of variables is based on theory and literature review and that some of the previous studies have used other variables and may not including the other variables is a limit . The short time span (2007-2016) may not be conclusive enough to measure the true impact of the macroeconomic determinants on the Moroccan economy.

In order to increase the economic competitiveness of Morocco, policy makers should take improving the domestic production as an urgent need to boost the export and improve trade balance. Also, monetary policy makers have to put more efforts to control inflation to increase

their vision in terms of currency so as to positively affect trade balance. The policy makers can also take a long position in buying contracts of oil at times when the oil prices are falling down to reduce the effects of high oil prices on the Moroccan economy; Interest rate should be managed in a way that will boost both domestic and foreign investment in order to improve the overall performance of the Moroccan economy.

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