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Hedging Effectiveness of Crude Palm Oil on the performance of stock Market Malaysia:

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ABSTRACT: The impact of different variables on the performance of stock market has seen the key issues for all the analysts .It has the significant role for enhancement the progress of the economy .For purpose of this study is to examine that financial position of the country .Palm oil is the major product of the Malaysia. Increase and decrease the prices of palm oil impact the stock index of Malaysia .In pursing the object, we have adopted the bound test .we have applied the co integration approach to analysis the association between underlying variables .we have taken the data from 1998 to 2013 and applied the ARDL approach and taken the results that there is existence both long and short run relationship.

KEYWORDS: Malaysia , bound test, ARDL, Palm oil, financial position.

1. INTRODUCTION:

A word of stock exchange means to determine the performance of the economy .A economy can be up and down with the movement of the stock market .Nevertheless, it is found that macroeconomic variables impact on the performance of the stock market .Most of the studies are being proving that oil prices as known as the proxy variable .The main objective of this study is to find out the potential effect of palm oil on the stock market of Malaysia .Malaysia is known as the best exports of palm oil and it has great impact on its economy .In Malaysia palm oil is traded in Bursa .In addition, there is also two more variables ,which have influenced on the stock market of all developing and under developing country .Empirical studies proved that there is negative association between interest rate and stock market.

2. ARBITRAGE PRICING THEORY:

This theory suggested that price of asset mostly relevant to risk.

$$E(rj) = rf + bj1RP1 + bj2RP2 + bj3RP3 + bj4RP4 + ... + bjnRPn$$

where:

E(rj) = the asset's expected rate of return
rf = the risk-free rate
bj = the sensitivity of the asset's return to the particular factor
RP = the risk premium associated with the particular factor

In the APT interest rate is known as the cost of financing .In all the theories the interest rate shows the negative association with the stock market.

Exchange rate is also known as the variable which affects the stock market .Exchange rate is the way of comparison of one currency and another currency .This theory suggested that local currency deprecation always positive and negative impact on the development of the economy. In this paper, we have analyzed that increase in the prices of palm oil also increase the demand and this thing shows that palm oil has impact on the performance of the economy.

3. LITERATURE REVIEW:

Bekhet, H. A. & Mugableh, M. I. Analyzed the impact of palm crude oil on the stock market of Malaysia .For this purpose, they had data from 1998 to 2008 and they had taken the Independent Variables namely Money Supply, exchange rates and oil prices to be tested the dependent Variable stock exchange and applied the classical regression model, best linear unbiased estimates (BLUE), Augment Dickey-Fuller .They showed that oil prices had positive association with the stock market [1].

Eita, J. H. Examined the impact of palm crude oil on the stock market of USA .For this purpose, they had data from 1991 to 2001 and they had taken the Independent Variables namely Money Supply, exchange rates and oil prices to be tested the dependent Variable stock exchange and applied Pearson correlation and ANOVA method .They showed that oil prices had positive association with the stock market [2].

Fama, E. F. Applied the impact of palm crude oil on the stock market of India .For this purpose, they had data from 1998 to 2008 and they had taken the Independent Variables namely Money Supply, exchange rates and oil prices to be tested the dependent Variable Stock Exchange and applied the Regression and Pearson correlation method .They showed that oil prices had positive association with the stock market [3].

Fama, E. F. Viewed the impact of palm crude oil on the stock market of Pakistan .For this purpose, they had data from 1999 to 2009 and they had taken the Independent Variables namely Money Supply, exchange rates and oil prices to be tested the dependent Variable stock exchange and applied the OLS model .They showed that oil prices had positive association with the stock market [4].

Fathi, S., Sameti, M., Nouri, B. A. & Esfahani, S. S. Viewed the impact of palm crude oil on the stock market of UK .For this purpose, they had data from 1995 to 2005 and they had taken the Independent Variables namely Money Supply, exchange rates and oil prices to be tested the dependent Variable stock exchange and applied the VAR model .They showed that oil prices had positive association with the stock market [5].

Hsing, Y., Budden, M. C. & Phillips, A. S. Analyzed the impact of palm crude oil on the stock market of France .For this purpose, they had data from 1997 to 2007 and they had taken the Independent Variables namely Money Supply, exchange rates and oil prices to be tested the dependent Variable stock exchange and applied the ADRL model .They showed that oil prices had positive association with the stock market [6].

Hussin, M. Y. M., Muhammad, F., Abu, M. F. & Awang, S. A Examined the impact of palm crude oil on the stock market of Tehran .For this purpose, they had data from 1990 to 2010 and they had taken the Independent Variables namely Money Supply, exchange rates and oil prices to be tested the dependent Variable stock exchange and applied the VEM model .They showed that oil prices had positive association with the stock market [7].

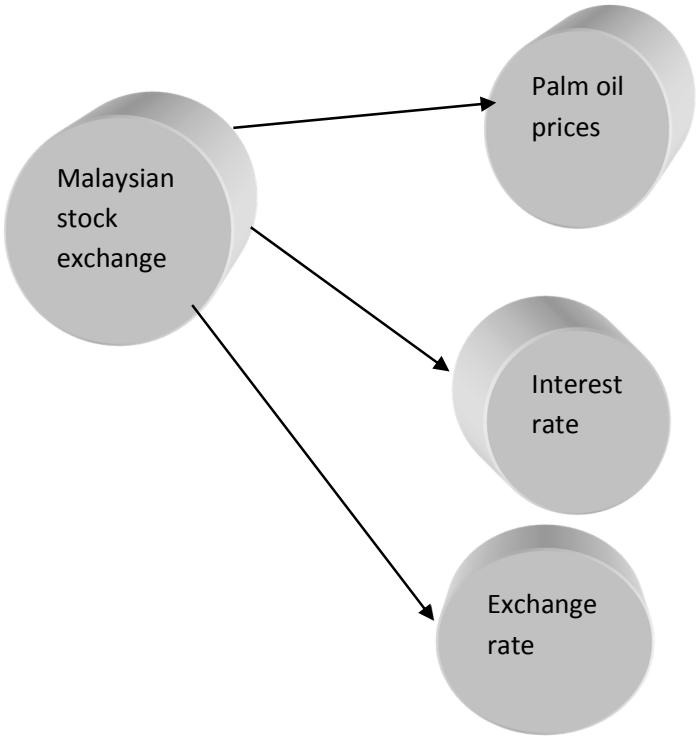
Kyereboah-Coleman, A. & Agyire-Tettey, K. F ,Viewed the impact of palm crude oil on the stock market of china .For this purpose, they had data from 1986 to 2008 and they had taken the Independent Variables namely Money Supply, exchange rates and oil prices to be tested the dependent Variable stock exchange and applied the VECM model .They showed that oil prices had positive association with the stock market [8].

Lee, C. L., Boon, T. H. & Baharumshah, A. Z. Observed the impact of palm crude oil on the stock market of Japan .For this purpose, they had data from 1989 to 2016 and they had taken the Independent Variables namely Money Supply, exchange rates and oil prices to be tested the dependent Variable stock exchange

and applied the multiregression model .They showed that oil prices had positive association with the stock market [9].

MacDonald, R. & Ricci, L Analyzed the impact of palm crude oil on the stock market of Korea .For this purpose, they had data from 1989 to 2009 and they had taken the Independent Variables namely Money Supply, exchange rates and oil prices to be tested the dependent Variable stock exchange and applied the VECM model .They showed that oil prices had positive association with the stock market [10].

4. THEORETICAL FRAMEWORK:



5. METHODOLOGY:

In this paper, we have applied the bound test for the valuation of cointrgration between the underlying assets and found the short and long run coefficients .in this paper; there are three variables, price of palm oil, interest rate and exchange rate.

MODEL:

General Model:

LKLCI = f(IBR, LEXR, LPOIL)

$LKLCI = \beta 0 + \beta 1IBRt + \beta 2LEXRt + \beta 3LPOILt + \varepsilon t$

Where

LKLCI=Logarithm of FBMKLCI index at time t

IBR =3 months interbank rate at time t

LEXR=Logarithm of exchange rate (RM/USD) at time t

LPOIL=Logarithm of palm oil price at time t

ε=error term at time t

Table no1:

LKLCI	IBR	LEXR	LPOIL	
Mean	6.827941	0.035791	1.277165	7.606664
Median	6.801362	0.031451	1.329498	7.568431
Maximum	7.406171	0.111501	1.514029	8.289336
Minimum	5.713437	0.020301	1.083669	6.790323
Std. Dev.	0.346613	0.017868	0.083704	0.380905
Skewness	-0.20613	3.130805	-0.70397	-0.05211
Kurtosis	2.671928	12.39913	2.707926	2.072101
Jarque-Bera	2.058817	946.0054	15.33465	6.466311
Probability	0.357219	0	0.000469	0.039434

The table no 1 showing the descriptive statistics of all the underlying variables .In the table no 1 the price of palm oil is 10 %here the values of exchange rate and interest rate are seen low. The values of correlation matrix is showing that there are negative association .The value of interest is showing positive with the price of palm oil. There is positive correlation of exchange rate with the palm oil.

Table no 2:

Correlation Matrix				
LKLCI	IBR	LEXR	LPOIL	
LKLCI	1			
IBR	-0.45266	1		
LEXR	-0.8797	0.287635	1	
LPOIL	0.608309	0.189018	-0.73407	1

In the table no 2 model is showing the both long and short run coefficients of the given model. The equation is estimated on the base of the given model.

Table no 3:

Augmented Dickey-Fuller (ADF)				
Intercept	**Intercept and Trend**			
Level	**First Difference**	**Level**	**First Difference**	
LKLCI	-1.13294	-10.93816***	-2.95234	-10.90800***
IBR	-10.38427***	-5.724789***	-9.931319***	-5.677567***
LEXR	-1.78635	-19.50551***	-4.218959***	-19.44615***
LPOIL	-1.69326	-9.177644***	-3.275872*	-9.194844***
Phillips-Perron (PP)				
Intercept	Intercept and Trend			
Level	First Difference	Level	First Difference	
LKLCI	-1.3474	-10.77139***	-3.418296*	-10.73614***
IBR	-2.880069**	-11.32068***	-2.44074	-11.58137***
LEXR	-1.4626	-21.90044***	-4.077203***	-21.51436***
LPOIL	-1.46006	-10.68226***	-2.48479	-10.72008***
Kwiatkowski-Phillips-Schmidt-Shin (KPSS)				
Intercept	Intercept and Trend			
Level	First Difference	Level	First Difference	
LKLCI	1.473203***	0.029138	0.061673	0.024555
IBR	0.521395**	0.245558	0.192458**	0.078369
LEXR	1.411036***	0.314515	0.259996***	0.289238***
LPOIL	0.972169***	0.114956	0.185118**	0.061711

The table no 3 is showing the values of unit root tests ,KPSS ,PP .There is still need to check the stationary values .The table no 3 is showing that all the underlying variables fall under the categories I(0) or I(1).

Table no 4:

Table 4: Results of Bounds Test for Cointegration Analysis		
Dependent variable:	**F-statistic**	
LKLCI	**6.9883*** **	
Case III		
(unrestricted intercept and no trend)		
Narayan (2005)	*k*=3	
Critical Value (n=80)	*I*(0)	*I*(1)
1%	4.569	5.961
5%	3.364	4.516
10%	2.824	3.886

In the table no 4 is showing that there is long run equilibrium among the underlying variables. The value of F-statistic is showing the 6.9884 and at significant at level 1.All the results are showing that there is cointegarion relationship between the underlying variables.

Table no 5:

Table 5: Long Run Elasticities and Short Run Adjustment Coefficients (Dependent variable: LKLCI)				
Variable	**Coefficient**	**Standard**	**t-statistic**	**p-value**
Error				
Long run elasticities				
IBR	-13.4365	2.9087	-4.6194	0
LEXR	-1.7561	0.77787	-2.2575	0.026
LPOIL	0.35754	0.16224	2.2039	0.028
INPT	6.8337	2.0865	3.2755	0.002
Error correction representations				
D(LKLCI1)	0.18871	0.060042	3.1429	0.003
D(IBR)	-1.8943	0.34223	-5.5351	0
D(LEXR)	-1.5817	0.19441	-8.1358	0
D(LPOIL)	0.050403	0.021301	2.3664	0.018
D(INPT)	0.96338	0.40691	2.3677	0.018
Ecm(-1)	-0.14098	0.028087	-5.0195	0

The table no 5 is showing the long run association at the level of 5%.As expected, it is found that palm oil is positive significant impact on the Malaysia stock exchange .Similarly ,the short run value is showing that there is exist negative significant .

Table no 6:

Table 6: Diagnostic Tests		
OLS Estimation	**ARDL Estimation**	
Test Statistics	**LM**	**LM**
Serial Correlation	8.8784(0.714)	15.0473(0.238)
Functional Form	0.040275(0.842)	1.8942(0.168)
Normality	45.9495(0.000)	53.6473(0.000)
Heteroscedasticity	0.027709(0.869)	15.8953(0.000)
Note: numbers in parentheses ( ) are probabilities.		

Table no 6 is showing that diagnostic test which are based on two tests OLS and ARDL approach .Both models are showing that the normality assumption are failed here .According to Paruolo (1998) argued that the reason of non .normality is due to high Kurtosis .The results of ARDL is showing that the model heteroscedasticity failed here .According to Shertha and Chowdhury (2006) ARDL model is natural to detect the heteroscedasticity.

6. CONCLUSION:

The purpose of stock market index is to indicate the economic position of the economy .Due to its significant role most f the studies done to examine the variables ,which has influenced on the stock markets .we have also analyzed the impact of stock market on the commodity prices .In the paper ,we have examined the impact of selected variables on the Malaysia stock exchange .In this study also analyzed the role of commodity on the performance of the stock prices .In this study ,it is seen that palm oil is the potential determinant of the Malaysia stock exchange .After employing the bounds test ,there is positive association between palm oil and Malaysian stock exchange .According to William(2011)there is negative association between exchange rate ,interest rate and stock exchange performance.

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