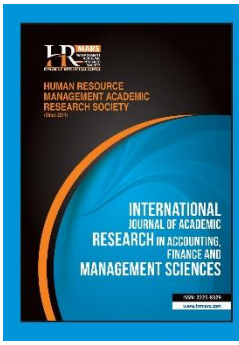

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To Link this Article: http://dx.doi.org/10.6007/IJARAFMS/v2-i4/9994 DOI:10.6007/IJARAFMS /v2-i4/9994

Received: *10* October *2012,* ***Revised:*** *11* November 2012*,* ***Accepted:*** *29* November 2012

Published Online: 16 December 2012

In-Text Citation: (Saad et al., 2012)

To Cite this Article: Saad, N. B. M., Ismail, N. B., Mohamad, N. E. A. B., & Manaf, N. B. A. (2012). Performance of Crude Palm Oil and Crude Palm Kernel Oil Futures in Malaysian Derivatives Market. *International Journal of Academic Research in Accounting Finance and Management Sciences*, *2*(4), 300–307.

Vol. 2, No. 4, 2012, Pg. 300 - 307

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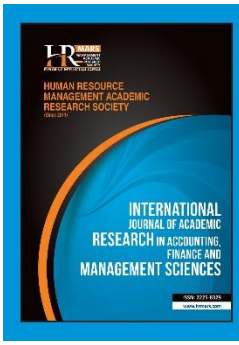
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Abstract

This study investigates the performance of two contracts traded that is Futures Crude Palm Oil (hereafter refers as FCPO) and Crude Palm Kernel Oil futures (hereafter refers as FPKO) in Malaysian derivatives market. The effects of contract's settlement, volume and open interest was analyzed towards open price (hereafter refers as price) for both contract traded. Secondary data is used, which are gathered from Bloomberg, Bursa Malaysia for N=1,296 over the period between 2006 and 2010. Overall the result revealed by regression and independent T-test shows that; the dependent variables and independent variables have a strong relationship, and the prices and volume of trading for FCPO is performed better and the most preferable contract compared to the FPKO contracts traded in Bursa Malaysia.

Keywords: Crude Palm Oil Futures, Crude Palm Kernel Oil futures, Trading Volume, Open Interest, Price

Introduction

Recently, derivatives market is a very new-fangled underlying instrument and has become increasingly imperative in the world of business finance and investment. Market participant should be released that it is essential for all professionals to understand how these market work, how they can be used and what determines prices in them. By definitions, a futures contract is an agreement to go long and short position an underlying asset at a certain time in the future for a certain price during contract initiation. There are many exchanges traded throughout the world trading futures contracts such Chicago Board of Trade and Chicago Mercantile Exchange in United States. Euronext in Europe, Tokyo Financial Exchange in Japan, Singapore Exchange in Singapore, Bursa Malaysia Derivatives Berhad in Malaysia and many more.

The development of the plantation and commodity sector is closely monitored by Ministry of Plantation Industries and Commodities (MPIC). Their vision is to make Malaysia the centre of

excellence for the commodity sector and as a major producer of higher value-added commodity-based products in the global markets.

Malaysia Crude Palm Oil Futures (FCPO) is currently the top futures contract by trading volume and open interest. It is also the country's oldest derivatives contract. It was begin traded under the Kuala Lumpur Commodity Exchange (KLCE) which then merging with the Malaysian Monetary Exchange (MME) in November 1998 to become the Commodity and Monetary Exchange (COMMEX). Afterward, the COMMEX was renamed to Bursa Malaysia Derivatives Bhd (BMD). BMD, formerly known as Malaysia Derivatives Exchange Berhad (MDEX), is a 75% owned subsidiary of Bursa Malaysia Berhad which provides, operates and maintains a futures and options exchange. BMD operates the most liquid and successful FCPO contract in the world (figure 1). It operates under the supervision of the Securities Commission and is governed by the Capital Market and Services Act 2007. BMD also falls under the jurisdiction of the Ministry of Finance of Malaysia, thus offering investors the security of trading on a regulated Exchange with infrastructure and regulations comparable to that of established markets worldwide.

Figure 1.
Source: http://www.bursamalaysia.com/website/bm/derivatives/about-us/corp_structure.html

Literature Review

Trading under derivatives market is quite complicate because trader will deal with the underlying instrument and the contract settlement happened in future date based on contract initiation. Volatility in prices make trader difficult to take position in cash and futures market even by hedging, speculating, spreading or arbitraging mechanism. Jones & Brooks (2005) found that Single Stock Futures (SSFs) settlement prices often have little relation to their respective underlying stock's closing prices. In addition, the paper presents evidence of a number of companies with underlying stock prices that closed above the settlement prices of their respective SSFs. These findings imply that many hedging and even large speculative trades may be difficult to execute in the current SSFs market. Investor interest must increase to provide sufficient volume for the market to efficiently support large trades and for SSF prices to reflect their true value at a given instance.

However, according to Brooks, Davies, & Kim (2006), hedging efficiency can be improved by using industrial classification to control for industry-specific effects or by using additional SSFs contracts to obtain additional diversification. Overall, matching the industry of the SSFs and spot stock is more important than the use of multiple SSFs for hedging efficiency. In addition, eliminating

market risk is at least as important as eliminating firm specific risk. Thus, hedging with market index futures as well improves hedging effectiveness compared to hedging with only SSFs contracts.

Chau, Holmes & Paudyal (2005) found that consideration is given to the impact of futures trading on the underlying market dynamics using a model which takes account not only of the volatility of the underlying, but also the extent to which derivatives promote or inhibit feedback trading. In overall, the findings provide interesting and useful insights and suggest that the listing of USFs has not impacted negatively on the underlying markets. It should, of course, be remembered that in all of the markets considered here index futures already existed prior to the introduction of USFs. Furthermore, all of the stocks in the USF sample are highly liquid stocks. Thus, it might be expected that these stocks would be less affected by the introduction of SSFs. Supported study done by Bartley, Robert and Richard (2007) found that both quoted and effective spreads decline for the underlying stocks. Trading activity measures (transaction size and volume) also indicate decline after the introductory. The migration of informed traders to futures results in less asymmetry and lower trading costs in the spot market.

Obiyatullah (2007) in his book on chapter Stock Index Futures Contracts: Analysis and Applications found that SSFs contract can be used for hedging, arbitrageur and speculation in addition to other specific used. The author also found that Single Stock Futures (SSF) provide automotive leverage and they have lower transaction cost and can be used to lower risk (hedging).

Noryati (2010) investigated the effects of the Malaysian futures - cash market relationship after the migration of Malaysian crude palm oil futures (FCPO) to automated system in December 2001 by employing EGARCH-t (p, q) model specifications. Findings reveal that the volatility persistence is marginally higher under the automated trading system relative to the open outcry system for the FCPO market; asymmetric volatility parameters for the spot market are insignificant for both pre- and post-auto periods. It appears that converting the futures market has, in part, led to higher degree of information asymmetry. Parallel result gathered by Noor Azlinna, Noryati & Suhaimi (2007), the volatility transmission is asymmetric in nature but the sign of asymmetric differs based on the direction of spillovers.

Raphael & Marcel (2009) empirically investigated whether continuous time pricing models are able to help reveal mispriced commodity futures contracts. Mispricing are identified based on the difference between model and observed prices, using four different pricing models for four different commodity markets, namely crude oil, copper, silver, and gold. Pricing errors are found to carry informational content for future price movements in excess of the overall market. Investment strategies based on these pricing errors yield significant excess returns, particularly for the relatively small copper and silver markets. Another studied done on price relationship between the spot and futures prices of crude palm oil contracts traded in the Malaysian Derivatives Exchange by Azmi & Shamsul (2004). Using historical variances of spot and futures price returns, they applied a model for approximating the convenience yield developed by Long (1995). This model was then tested on the actual crude palm oil prices for the spot-month and three month contracts from January 1988 to December 2002, to determine the forecasting accuracy of this model relative to the simple cost-of carry model. There was some improvement in the predictive ability of this approach which could be attributed to the inclusion of historical return variances. The improvement was also evident when tested against out-of-sample data, suggesting that the inclusion of historical return variances in the form of the convenience yield could provide a better forecast of crude palm oil futures prices.

Rosalan (1998) illustrated on the importance of palm oil sellers (producers, millers and exporters) and buyers (refiners, processors and importers) who own the actual commodity to hedge

on the .Kuala Lumpur Commodity Exchange (KLCE), which is the only exchange that trades crude palm oil (CPO) futures in the world. Thus, with a proper selection of hedging strategy on the KLCE, it is expected that the owners of physical palm oil stand to benefit in transferring price risks against the cash market.

Reviewing empirical study on financial and equity trading, this study were referred Hong & Jian (2010) which analyzed intraday volatility by S&P 500 stock index future product and basic on the high frequency trading strategy. The result presented that EGARCH model is the preferred one of intraday volatility estimation in S&P500 stock index future product. Furthermore, Mohd Zaini & Chan (2005) this research tells about the difference in trading mechanisms in the stock index futures and spot markets in Malaysia is argued to contribute to the lead-lag relationship between the two. Results of the study suggest that cash market and futures market are co integrated. The results also indicate that spot price do lead futures price but the lead-lag relationship is relatively weak as compared to the impact of futures price on spot price.

Obiyathulla, et al. (1999) examines several issues related to volatility, pricing efficiency, systematic patterns and lead-lag relationships. Based on their results, there is no evidence of any increase in the volatility of the underlying market following futures introduction. If anything, the one year period following futures introduction had lower volatility. Inter-market comparison showed futures volatility to be higher. No evidence of any expiration day effect was found.

Data and Methodology

It is a rare researcher who neglects to consider trading volume and spot price into account when interpreting and analyzing their charts, since they provide valuable information about developing trends, including fundamental analysts for timing to enter into or exit from derivative markets. Volume is simply a measure of the number of contracts traded in any one period while the open position is the total of buy or sell obligation outstanding in the market. The sample of this study consists of commodity, equity and financial derivatives contract traded in the Bursa Malaysia Derivatives Bhd for five-year period from 2006 to 2011. For the purpose of collecting information on the contracts' price, trading volume and cash settlement, this study used the regulatory trading' website (i.e. Bank Negara Malaysia (BNM), Securities Commission (SC), Bursa Malaysia Derivatives (BMD) and Bloomberg software. Besides that, data from Palm Oil Registration and Licensing Authority (PORLA) and Suruhanjaya Syarikat Malaysia (SSM) are also required especially for crude palm oil and kernel contract. There are two main variables, dependent and explanatory, and the proxies that represent the both variables as shown in table 1.

Table 1. Dependent and Explanatory Variables

Variables	Proxies
Dependent	• Price
Explanatory	• Open Interest) • Trading Volume • Cash Settlement

Next, the relationship between the dependent and explanatory variables will be estimated using the following regression equation:

$$P_{Hi} = \alpha + \beta_1(OPEN_i) + \beta_2(VOL_i) + \beta_3(SETTLE) + \varepsilon_i \quad (1)$$

Where α = the constant term; P_H = Price during contract traded;

β = the slope or coefficient estimates of the explanatory variables;

ε = the standard error of the i contract.

The study used pooling regressions to test the relationship between dependent and explanatory variables. Method of Multivariate Regression Analysis for each dependent variables constructed with SPSS is used to estimate the regression line. From the result of descriptive statistics, the next step is to come out with the regression analysis. Besides the regression analysis, the study also runs Pearson correlation analysis in order to see the correlation between dependent and explanatory variables. The studies begin to see the significant level between two variables. If the P value is less than 0.05 at significant level, it shows that it is significant where there is a relationship between two variables. In contrast, if the P value show that it more than 0.05 at significant level, it means there is insignificant as well as do not have any relationship between two variables. Simply put, if there is insignificant so it just end up to the conclusion that there are no relationship between two variables. But, if there is at significant level, means there have a relationship.

Then, hypothesis of the study is developed to cater for the pooling regression model. The hypotheses are:

H1: There is a relationship between price and performance of contract trading.

H2: There is a significant mean difference of contract performance between commodity instruments.

Result and Discussion

Table 2. Pearson Correlation Results

Variables	Price	OpenInterest	Volume	CashSettlement
Price	1	.120**	.040	.709**
		.000	.149	.000
OpenInterest	.120**	1	.874**	-.038
	.000		.000	.170
Volume	.040	.874**	1	-.088**
	.149	.000		.002
CashSettlement	.709**	-.038	-.088**	1
	.000	.170	.002	

**. Correlation is significant at the 0.01 level (2-tailed).

The Pearson correlations results reported all p-value of correlation are relatively low among contract performance justifiable that no multicollinearity problems exist as mentioned by Gujarati (1995) as depicted in table 2. The correlations results for price indicate positive coefficient with open interest (+0.20), and cash settlement (+0.709) all at 1% significant level but positive insignificant with volume (+0.040). Overall the correlations results indicate significant correlations exist between independent variables components with price. The result supported by He, Kwok, & Wan (2010) showed daily highs and lows of the West Texas Intermediate oil price are co-integrated, with the error correction term being closely approximated by the daily price range.

Table 3. Multivariate Regression Results

Variables	Price	
	t-value	p-value
Constant	-1.016	.310
Open Interest	6.208	.000
Volume	-2.822	.005
Cash Settlement	36.827	.000
F-Value	481.527	.000
R^2/Adj. R^2	.528	.527

As for the equation 1 for price in table 3, the coefficient is positive and significant for open interest (+ 6.028) and cash settlement (+36.827) is at 1% confidence level indicating that any increase in price can be explained by an increased in open interest and cash settlement. Whereas the volume (-2.822) indicate 1% confidence level be negatively significant relationship with price. Implying that this study was accept hypothesis 1 since the increasing or decreasing in contract settlement, volume and open interest give a direct influence to open price. Huge numbers of contract traded give a positive impact to open price to moving upward. In addition, the determination coefficient of equation 1 (R^2 *=0.528)* is quite high and indicating that the 52.8% the variance of price is explained by the variances of the independent variables respectively. Thus, this entails that the hypotheses of the regression coefficients are all zero and can be accepted at the 1% level of significant.

Table 4. Descriptive Statistics and Independent T-test Results

Variables	Commodity Instruments	Group Statistics			T-test for Equality of Means	
		Mean	Min	Max	t	Sig.
Price	FCPO	2276.45	2276.45	4200	18.302	.000
	FPKO	1187.96	1187.96	1573	30.600	.000
Open Interest	FCPO	5459.54	5459.54	36301	-3.050	.002
	FPKO	7030.68	7030.68	34864	-2.559	.011
Volume	FCPO	1116.95	1116.95	16682	-7.393	.000
	FPKO	2391.46	2391.46	13742	-6.394	.000
Cash Settlement	FCPO	2542.15	2542.15	3792	33.219	.000
	FPKO	1223.95	1223.95	1828	53.323	.000

Conclusions

Commodity Price instrument relatively very volatile which is reflected to their trading mechanism performance. This scenario had been proven by the statistically result by regression whereby it was indicate a significant relation between price with the open interest, volume of trading and cash settlement. In comparing between two contract performances, FCPO versus FPKO prices, FCPO contract is the most preferable contract compared to the FPKO contracts that are traded in Bursa Malaysia. However, the market participants have their own business focus when dealing with this contact especially hedgers. In contrast reflected to arbitrageur and speculators involved in making excessive return objective. This contract clearly has a major significant regards to its price which then convince the trader to trade or to arbitrage or to speculate such particular market. Overall

the result shows that the dependent variables and independent variables have a strong relationship whereby increasing in price of FCPO and FPKO will increase their trading volume, cash settlement and open interest. For recommendations, the trader or investor in Malaysia can invest in the FCPO contract as compared to FPKO since the contracts can maximize the trader profit.

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