

**UNIVERSITI TEKNOLOGI MARA**

**EFFECTIVE CROSS HEDGING:  
EVIDENCE FROM PHYSICAL  
CRUDE PALM OIL AND ITS  
INTERRELATED AND NON-  
INTERRELATED AGRICULTURAL  
AND ENERGY FUTURES  
CONTRACTS**

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## ABSTRACT

Since its establishment, Crude Palm Oil futures contract (FCPO) has been used to hedge its physical crude palm oil (CPO) in cash market. However, due to the excessive speculation activities on crude palm oil futures market, the recent researchers found that FCPO to be no longer an effective hedging tool to mitigate the price risk in cash market. This triggers the need for physical traders to find possible alternatives to ensure that the hedging role can be executed effectively. Therefore in this study, Ordinary Least Square, bivariate VAR and bivariate VECM were used to examine whether other interrelated and non-interrelated agricultural and energy futures contracts could serve as effective cross-hedging mechanisms for the CPO. Weekly data of agricultural and energy futures contracts from Chicago Board of Trade (CBOT), Intercontinental Exchange (ICE), New York Mercantile Exchange (NYMEX), Tokyo Commodity Exchange (TOCOM), and Dalian Commodity Exchange (DCE) are employed to cross hedge the physical crude palm oil prices. The study starts from 2006 until 2016. Empirical results indicate that bivariate VECM gives more hedging variance reduction. Overall FCPO is still the best futures contract for hedging purposes while Chicago Soybean (CBOTBO) provides the best alternative if cross hedging is considered. While Japanese crude oil futures (TOCOM) represents the energy futures market as the best cross hedge alternatives for CPO.

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# CHAPTER ONE

## INTRODUCTION

### 1.1 BACKGROUND OF THE STUDY

The adverse global financial market sentiment has affected the commodity markets especially crude palm oil traders. Nevertheless, the recent global crude oil glut, bad weather and changing in government policies of agricultural exporting countries have adversely affecting the crude palm oil market price (Khin and Mohamed, 2012). These market fundamentals had caused CPO price became unstable and unpredictable. Following to that, market players are in need of an instrument which can mitigate their price risk resulted from the agility of CPO market behaviour in the cash market. Hence, the Malaysian Ringgit (MYR) denominated crude palm oil futures or FCPO in short was introduced by the Bursa Malaysia Derivatives (BMD) for the purpose of price risk mitigation facility since its first establishment in the year of 1980 in Kuala Lumpur Commodity Exchange (KLCE). Like other futures contracts, FCPO price is derived from its' underlying asset which is CPO. It means that CPO and FCPO prices are deemed to move in the same direction and will become the future price discovery mechanism for CPO. The BMD facilitates the FCPO trading so that the market players are able to offset their price risk in physical market in futures market without hassle, or namely hedging. Among others, Ali (1998), Azizan, Ahmad and Shannon (2007), Rahman, Nawi and Naziman (2012), and Saad, Ismail, Mohamad and Manaf (2013) have proven the successful role of FCPO as the price discovery and hedging mechanism for its physical commodity.

However, as the cash market is only consist of physical palm oil players like planters and refiners which are the buyer and the seller of physical CPO, the futures market participants in the other hand are consist not only the physical players, but also the non-hedger participants like arbitrageurs and speculators. The arbitrageurs and speculators are eyeing for gains from the price changes and this will affect the true market sentiment (see Cifarelli and Paesani, 2016). Even most of the temporary intraday price swings were the results from the activities of short covering and profit taking by the non-hedger traders (Huchet and Fam, 2016). Following to this, the FCPO market