



**UNIVERSITI PUTRA MALAYSIA**

**OVERALL PERFORMANCE OF MALAYSIAN  
FUTURES MARKET: EVIDENCE USING CRUDE  
PALM OIL AND STOCK INDEX FUTURES CONTRACT**

**TAUFIQ HASSAN SHAH CHOWDURY**

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EVIDENCE USING CRUDE PALM OIL AND STOCK INDEX FUTURES  
CONTRACTS**

**By  
TAUFIQ HASSAN SHAH CHOWDURY**

**Thesis Submitted in Fulfillment of the Requirements for the Degree of  
Doctor of Philosophy in the Graduate School of Management,  
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**September, 2001**



**IN MEMORY OF MY PARENTS  
and  
GRAND PARENTS**



**Abstract of thesis presented to the Senate of the Universiti Putra Malaysia in fulfilment of the requirements for the degree of Doctor of Philosophy.**

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**September, 2001**

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**Faculty: Graduate School of Management**

This research analysed four important issues relating to the efficiency of futures market, namely pricing characteristics, informational role, arbitrage efficiency and hedging performance of two important derivative products namely crude palm oil futures (CPO) and stock index futures contracts (SIF). Daily data on CPO contracts for the calendar years 1987 through 1998 and 1996 through 1999 for stock index contracts were used.

Several hypotheses concerning the pricing behaviour of futures contracts (CPO and SIF) were tested to ascertain whether the pricing behaviour is consistent with theory in the context of an emerging market. The finding suggests that the pricing behaviour of CPO futures is consistent with theory over the whole period of analysis. And the liquidity increased with volume for the CPO futures. Delivery month does not have any significant impact on price volatility. For stock index futures, the pricing behaviour is not stable over time possibly due to the financial crisis (July 1997 to September 1998) and/or more importantly, due to the learning



period effect. The liquidity of this contract did not increase with the increase in volume probably due to the lack of speculators.

Excepting in a sub-period (1993-1995), the findings suggest that information is a major determinant of cash price movement of CPO contracts. For stock index futures, significant informational linkages between cash and futures prices is observed only after the financial crisis. There was no informational link between cash and futures markets before the crisis.

In terms of arbitrage efficiency, the CPO futures show weak arbitrage activity. Spot volatility reduces the spread between cash and futures though it was not simultaneous while futures volatility does not have an important role in reducing the spread. For stock index futures, spot volatility as well as futures volatility simultaneously reduces the spread in the post crisis period. In the pre crisis period, these contracts showed a weak-form arbitrage efficiency with expected sign.

Holders of spot positions are expected to hedge the risk of unexpected price changes. The traditional hedging theory regards the risk reduction as the motive for establishing a futures position, whereas portfolio approach to this theory incorporates the return (loss or gain) together with risk reduction concepts. The empirical results demonstrate the risk reduction effectiveness of stock index futures contracts. Incorporating the influence of hedging on return, it was found that risk reduction in most cases is higher than that of return reduction. But it is not meaningful for the initial years (1996 and 1997) because of thin trading (in terms of volume) compared to the underlying market. The evidence suggests that the index futures contracts can be used as a risk reduction instrument.

The findings also demonstrate the risk reduction ineffectiveness of CPO futures contracts despite high informational efficiency. The hedging did not improve the risk-return performance probably due to the low level of arbitrage efficiency. However after 1993, the return reduction in most cases exceeds the risk reduction in the CPO futures contracts. Contracts that mature within 1 and 2 months, performed better than the distant or expiration month contracts in terms of reduction of risk per unit of returns.

An important policy implication of these findings is that futures market authority (CPO) should concentrate on how to transform the market for the hedgers. Supply of adequate capital for hedgers, storer and also for clearinghouse is important to buffer against the shortage of capital due to losses. The reduction of transaction cost could increase the participation of hedgers and arbitrageurs. Coordination between futures industry authority and underlying market authority (especially for CPO futures) is important to increase the performance of the hedging and arbitrage activities. Stock index futures lacks the depth required for effective liquidity. Lack of participation could be due to the lack of knowledge and therefore less confidence to trade in the contracts or high transaction cost. One approach to mitigate this problem is to initiate a nationwide marketing program with intensive training for potential participants. Cost reduction could be another important factor. Participation can be increased if the contracts can be traded on a cost-effective manner.

Abstrak tesis dihantar kepada Senat Universiti Putra Malaysia  
bagi memenuhi keperluan Ijazah Doktor Falsafah

**PRESTASI PASARAN NIAGA HADAPAN MALAYSIA: PEMBUKTIAN  
MENGUNAKAN NIAGA HADAPAN MSM DAN KONTRAK SIF**

Oleh

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Kajian ini menganalisis empat isu penting berkaitan dengan kecekapan niaga hadapan, iaitu ciri harga, peranan maklumat, kecekapan arbitraj dan prestasi lindung nilai niaga hadapan minyak sawit mentah (MSM) dan SIF. Data harian kontrak MSM untuk tahun 1987 hingga 1998 dan tahun 1996 hingga tahun 1999 untuk stok kontrak indeks telah digunakan.

Beberapa hipotesis telah diuji untuk meneliti sama ada gelagat harga kontrak hadapan (MSM dan SIF) adalah konsisten dengan teori. Penemuan mencadangkan bahawa gelagat harga niaga hadapan MSM adalah konsisten dengan teori untuk jangka masa yang dikaji. Didapati bahawa kecairan meningkat apabila jumlah niaga hadapan MSM meningkat. Bulan penghantaran tidak memberi kesan yang ketara kepada turun naik harga. Untuk niaga hadapan stok indeks, gelagat harga adalah tidak stabil berkemungkinan disebabkan oleh krisis kewangan (Julai 1997 hingga September 1998) dan yang lebih penting, disebabkan oleh kesan tempoh pembelajaran. Kecairan kontrak ini tidak bertambah dengan meningkatnya jumlah urusniaga, ini mungkin disebabkan oleh kekurangan spekulator.

Kecuali bagi jangka waktu antara 1993-1995, penemuan mencadangkan maklumat adalah satu penentu utama pergerakan harga tunai bagi kontrak MSM. Untuk niaga hadapan stok indeks, hubungan maklumat antara harga tunai dan harga masa hadapan adalah bererti terutama selepas krisis kewangan. Tiada hubungan maklumat diperhatikan antara niaga tunai dan niaga hadapan sebelum krisis.

Dari segi kecekapan arbitraj niaga hadapan MSM menunjukkan aktiviti arbitraj yang lemah. Turun naik "spot" mengurangkan perbezaan di antara jualan tunai dan jualan hadapan walaupun ianya tidak serentak. Untuk niaga hadapan stok indeks kedua-dua turun naik "spot" dan hadapan secara serentak mengurangkan perbezaan dalam tempoh selepas krisis. Dalam tempoh sebelum krisis kontrak-kontrak ini menunjukkan corak kecekapan arbitraj yang lemah dengan tanda yang dijangka.

Pemegang kedudukan spot adalah dijangka melindungi nilai risiko perubahan harga yang diluar jangkaan. Teori lindungnilai tradisi mencadangkan bahawa pengurangan risiko sebagai matlamat untuk mengambil kedudukan dalam niaga hadapan. Walhal pendekatan portfolio kepada teori lindung nilai tradisi mengambilkira pulangan (untung dan rugi) bersama dengan konsep pengurangan risiko. Keputusan empirikal menunjukkan bahawa keberkesanan pengurangan risiko niaga hadapan stok indeks, mengambilkira kesan lindung nilai ke atas pulangan, didapati pengurangan risiko dalam kebanyakan kes melebihi pengurangan pulangan. Tetapi ia mungkin tidak bererti untuk tahun permulaan (1996 dan 1997) kerana urusniaga yang tipis (dalam bentuk jumlah urusniaga) dibandingkan dengan pasaran MSM. Ini menyarankan bahawa kontrak niaga hadapan indeks boleh digunakan sebagai alat pengurangan risiko.



Penemuan juga menunjukkan ketidakberkesanan kontrak niaga hadapan MSM dalam mengurangkan risiko (berbanding dengan pasaran negara maju) walaupun kecekapan maklumat yang tinggi. Lindung nilai tidak memperbaiki prestasi-risiko-pulangan kerana tahap kecekapan arbitraj yang rendah. Walau bagaimanapun selepas 1993, pengurangan pulangan dalam hampir semua kes melebihi pengurangan risiko dalam kontrak niaga hadapan MSM. Kontrak yang matang dalam masa satu dan dua bulan menunjukkan prestasi lebih baik daripada kontrak jangka panjang yang matang di akhir bulan.

Implikasi polisi utama kajian ini ialah pihak berkuasa niaga hadapan (MSM) sepatutnya menumpukan kepada bagaimana memenuhi keperluan pasaran untuk pelindung nilai. Ini merangkumi penawaran modal cukup untuk pelindung nilai, penyimpanan dan juga rumah penjelasan untuk menampung kekurangan modal kesan daripada kerugian. Pengurangan kos urusan niaga boleh meningkatkan penyertaan pelindung nilai dan arbitraj. Penyelarasan diantara pihak berkuasa industri niaga hadapan dan pihak berkuasa pasaran lain (terutama untuk niaga hadapan MSM) adalah penting untuk meningkatkan prestasi aktiviti lindung nilai dan arbitraj. Niaga hadapan stok indeks tidak memiliki “kedalaman” untuk kecairan berkesan. Kurang penyertaan kemungkinan disebabkan oleh kurang pengetahuan dan keyakinan untuk mengurusniaga dalam kontrak. Satu pendekatan untuk mengatasi masalah ini ialah memulakan program pemasaran keseluruhan negara yang melibatkan latihan untuk peserta berpotensi. Pengurangan kos boleh menjadi faktor lain yang penting. Penyertaan boleh dipertingkatkan jika kontrak boleh dilakukan dalam bentuk yang lebih efektif dari segi kos.

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I certify that an Examination Committee met on 24<sup>th</sup> September 2001 to conduct the final examination of Taufiq Hassan Shah Chowdury on his Doctor of Philosophy thesis entitled "Overall Performance of Malaysian Futures Market: Evidence using Crude Palm Oil and Stock Index Futures Contracts" in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows:

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## DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations, which have been duly acknowledge. I also declare that it has not been previously or concurrently submitted for any other degree at UPM or other institutions.

*Taufiq Hassan*

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Taufiq Hassan Shah Chowdury

Date: 24<sup>th</sup> September 2001

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## **LIST OF ABBREVIATIONS**

<b>CPO</b>	<b>Crude Palm Oil</b>
<b>WTO</b>	<b>World Trade Organisation</b>
<b>COMDEX</b>	<b>Commodity and Monetary Exchange of Malaysia</b>
<b>KLCE</b>	<b>Kuala Lumpur Commodity Exchange</b>
<b>KLOFFE</b>	<b>Kuala Lumpur Option and Financial Futures Exchange</b>
<b>SIF</b>	<b>Stock Index Futures</b>
<b>MME</b>	<b>Malaysian Monetary Exchange</b>
<b>KLIBOR</b>	<b>Kuala Lumpur Interbank Offered Rates.</b>
<b>MPOB</b>	<b>Malaysian Palm Oil Board</b>
<b>PORIM</b>	<b>Palm Oil Research Institute of Malaysia</b>
<b>PORLA</b>	<b>Palm Oil Registration and Licensing Authority</b>
<b>KLSE</b>	<b>Kuala Lumpur Stock Exchange</b>
<b>MDEX</b>	<b>Malaysian Derivatives Exchange</b>
<b>Exchange Rate</b>	<b>Since September 1997:</b>
<b>USD1 =</b>	<b>RM 3.80</b>