UNIVERSITI PUTRA MALAYSIA

SUPPLY AND DEMAND RELATIONSHIPS IN THE MALAYSIAN COCOA MARKET

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By

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Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfillment of the Requirements for the Degree of Master of Science

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DEDICATED TO ALLAH SWT, MY HUSBAND, MY MOTHER, MY FATHER,

AND MY FAMILY

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the degree of Master of Science

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Chairman: Professor Datin Paduka Fatimah Mohamed Arshad, PhD

Faculty: Economics and Management

The Malaysian cocoa sector has undergone a structural transformation during the last few decades. Cocoa area and production have shown an increasing trend in the 1970s until 1990s. However, after 1990s and beyond, the cocoa land area and production declined significantly due to the following factors. They were; declining world prices, higher labour costs, loss of production due to pests and diseases along with a switch in the relative profitable crops such as oil palm have caused the decrease in cocoa production. Meanwhile, the domestic demand for grindings and import have expanded significantly. In view of the significant structural shift that took place in the industry, it is important to examine which of these factors are truly significant in explaining the cocoa market in Malaysia and to foresee the future of the Malaysian cocoa market in the short-run and long-run. Thus, the objectives of this thesis are; (i) to assess the relationship and examine the variables which influence the supply and demand of the Malaysian cocoa industry; and (ii) to forecast the supply and demand of the Malaysian cocoa industry. The models have been estimated using Autoregressive Distributive Lag (ARDL). The coefficients obtained are then used to carry out ex ante and ex post forecasts.

The findings of this study imply that the producer prices of palm oil and government expenditure are the most sequential factors affecting the cocoa planted area in Malaysia. The fertilizer prices proved to have a significant effect on yield. The domestic as well as the import demand for cocoa are significantly affected by the Malaysian Index of Industrial Production, which implies that the increase in income of the importing nations leads to an increase in the grinding industry. Finally, the ex ante forecasts of cocoa supply and demand show that the supply and export of cocoa are increasing while the import and domestic demand are decreasing. The factors contributing to the increase in supply are; the high cocoa price and the increase in technology. Meanwhile, decrease in domestic demand is attributed to the low Index of Industrial Production. The ex post forecasts suggest opposite results. The supply and domestic demand of cocoa are exhibiting decreasing trend, while export and import are increasing. The contributing factors for the decrease in supply are; high prices of palm oil as competing crops and increase in fertilizer price. Meanwhile, the increase in export and import are attributed to the higher world GDP and Malaysian Industrial Index of Production which implies a growing demand from the grinding industry.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

PERHUBUNGAN BEKALAN DAN PERMINTAAN DALAM PASARAN KOKO DI MALAYSIA

Oleh

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Sektor koko Malaysia telah mengalami transformasi struktur dalam tempoh beberapa dekad yang lalu. Kawasan koko dan pengeluaran telah menunjukkan trend meningkat dalam tahun 1970-an sehingga 1990-an. Namun, selepas tahun 1990-an dan seterusnya, kawasan tanah koko dan pengeluaran telah menurun dengan ketara. Ini disebabkan oleh faktor-faktor berikut; penurunan harga dunia, kos buruh yang tinggi, kehilangan pengeluaran akibat perosak dan penyakit dan saingan dengan tanaman lain terutama kelapa sawit. Sementara itu, permintaan domestik bagi pengisaran dan import telah bertambah dengan ketara. Memandangkan perubahan struktur yang ketara telah berlaku, maka adalah penting untuk meneliti faktor utama yang mempengaruhi pasaran koko di Malaysia untuk tujuan telahan masa hadapan industri ini dalam jangka pendek dan panjang. Oleh itu, objektif tesis ini adalah; (i) untuk meneliti hubungan dan mengkaji pembolehubah yang mempengaruhi penawaran dan permintaan dalam industri koko Malaysia; dan (ii) untuk meramal penawaran dan permintaan koko di Malaysia. Model telah dianggarkan menggunakan Lag Edaran Autoregresi (ARDL). Pekali yang

diperolehi kemudiannya digunakan untuk melaksanakan ramalan ex ante dan ramalan ex post.

Dapatan kajian menunjukkan bahawa harga pengeluar minyak kelapa sawit dan perbelanjaan kerajaan adalah faktor yang ketara dalam mempengaruhi keluasan tanaman koko di Malaysia. Harga baja terbukti mempunyai kesan yang bererti kepada hasil. Permintaan dalam negeri dan import koko dipengaruhi oleh Indeks Pengeluaran Perindustrian Malaysia yang bermaksud peningkatan pendapatan daripada negara-negara pengimport meningkatkan kegiatan industri pengisaran. Ramalan ex ante menunjukkan bahawa penawaran dan eksport koko meningkat, sebaliknya import dan permintaan domestik kian berkurangan. Faktor yang menyumbang kepada peningkatan pengeluaran adalah harga koko yang tinggi dan kemajuan dalam teknologi. Sementara itu, penurunan dalam permintaan dalam negeri adalah disebabkan oleh Indeks Pengeluaran Perindustrian yang rendah. Ramalan ex post menunjukkan trend yang bertentangan. Penawaran dan permintaan koko dalam negeri menunjukkan trend menurun, manakala trend eksport dan import adalah meningkat. Faktor yang menyumbang kepada penurunan pengeluaran adalah harga minyak sawit yang tinggi sebagai tanaman saingan dan kenaikan harga baja. Sementara itu, peningkatan dalam eksport dan import adalah disebabkan kepada KDNK dunia yang lebih tinggi dan peningkatan Indeks Perindustrian Pengeluaran Malaysia yang menunjukkan pertumbuhan dalam sektor pengisaran.

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I certify that an Examination Committee met on 20 September 2013 to conduct the final examination of Nurjihan binti Idris on her Master thesis entitled: Supply and Demand Relationships in the Malaysian Cocoa Market" 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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This thesis submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfillment of the requirement for the degree of Master of Science. The members of the Supervisory 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 acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at Universiti Putra Malaysia or other institutions.

NURJIHAN BINTI IDRIS

Date: 20 September 2013

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