



**UNIVERSITI PUTRA MALAYSIA**

***THE CONTRIBUTION OF PROCESSING TRADE ACTIVITIES TO  
MALAYSIA'S DOMESTIC ECONOMY***

**NUR ADILAH HAMID**

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**THE CONTRIBUTION OF PROCESSING TRADE ACTIVITIES TO  
MALAYSIA'S DOMESTIC ECONOMY**

By

**NUR ADILAH HAMID**

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

**December 2016**

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

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**December 2016**

**Chair: Azman Bin Hassan, PhD**  
**Faculty: Economics and Management**

Transformation of the current international trade pattern has misled the information on how much Malaysia export are really made in Malaysia. Increased international outsourcings have spurred trade in intermediate goods, which is termed as processing trade. Malaysia is one the countries that actively participating in the processing trade activities in the Asian region. While empirical evidences in other countries clearly indicate the unfavorable effects on local economies, empirical works to quantify the impact of increased processing trade in Malaysia are clearly lagged behind. The fact is that the conventional national accounts framework does not separate the processing trade activities in the calculation of gross domestic products (GDP). In this study, we further improve the GDP accounting by separating the manufacturing sectors according to domestic and processing trade sectors, and integrating them consistently in a so-called 'dualistic' input-output table. Results clearly show that the processing trade sectors do not only associated with higher foreign content but also have lower growth linkages to the domestic economy. From the overall processing exports, only 39.6% are benefited to the domestic value added while another 60.4% are attributed to foreign content. Based on the findings, we strongly suggest the government to review the current Free Industrial Zone policies by putting more emphasize on the domestic manufacturing sectors and finding new focused sectors for exports.

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

## SUMBANGAN AKTIVITI PERDAGANGAN PEMROSESAN KEPADA EKONOMI DOMESTIK DI MALAYSIA

Oleh

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Transformasi corak perdagangan antarabangsa pada hari ini telah menimbulkan kekeliruan terhadap maklumat mengenai berapakah jumlah eksport Malaysia yang benar-benar dihasilkan di Malaysia. Peningkatan *outsourcings* antarabangsa telah mengalakkan pertumbuhan perdagangan barangan pengantara yang ditermakan sebagai *processing trade*. Malaysia merupakan salah satu negara yang mengambil bahagian secara aktif di dalam aktiviti *processing trade* di rantau Asia. Bukti-bukti empirikal di negara lain jelas menunjukkan kesan negatif *processing trade* ini kepada ekonomi tempatan. Walau bagaimana pun kesan sebenar *processing trade* di Malaysia masih lagi tidak diketahui oleh kerana kekurangan kajian yang berkaitan. Tambahan pula, akaun konvensional negara tidak memisahkan aktiviti *processing trade* dalam pengiraan Keluaran Dalam Negara Kasar (KDNK). Oleh itu kajian ini akan memberi sumbangan kepada penambahbaikan perakaunan KDNK dengan memisahkan sektor pembuatan yang sedia ada kepada sektor *processing* dan sektor *domestic* kemudian mengintegrasikan kedua-duanya di dalam jadual yang dinamakan 'dualistik' input-output. Hasil daripada kajian ini membuktikan eksport *processing* hanya menyumbang sebanyak 39.6% kepada nilai tambah domestik, manakala 60.4% adalah keuntungan kepada negara luar yang ditermakan sebagai *foreign content*. Berdasarkan hasil penemuan kajian, kerajaan perlu mengkaji semula dasar Zon Bebas yang sedia ada, memberikan lebih penekanan kepada sektor domestik, dan mencari sektor fokus baru bagi eksport.

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I certify that a Thesis Examination Committee has met on 1 December 2016 to conduct the final examination of Nur Adilah Binti Hamid on his (her) thesis entitled “The Contribution of Processing Trade Activities to Malaysia’s Domestic Economy” in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Master of Science.

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## LIST OF ABBREVIATIONS

GDP	Gross Domestic Products
FZ	Free Zones
FIZ	Free Industrial Zones
FCZ	Free Commercial Zones
FTZ	Free Trade Zones
TPPA	Trans-Pacific Partnership Agreement
LMW	Licensed Manufacturing Warehouse
FDI	Foreign Direct Investment
E&E	Electronic and Electrical
NKEA	National Key Economic Areas
CCM	Companies Commission of Malaysia
DOSM	Department of Statistics Malaysia
MAD	Mean Absolute Deviation
DI	Dissimilarity Index
VS	Vertical Specialization
BEC	Broad Economic Categories



## CHAPTER 1

### INTRODUCTION

#### 1.1 Introduction

The global paradigm shift in international trade from 'trade in goods' towards 'trade in task' which is driven by value chain that revolutionize international trade worldwide is major motivation of this study. In particular, trade in task has emerged to dominate processing trade. Malaysia has long participate in processing trade activities since early 1970s but the actual size, spillover effect, and contribution of the trade activities are ambiguous. Processing trade refers to import for export activities with free duty treatment given on the imported inputs which normally conducted in special reserve areas provided by the government.

In fact, strong presence of processing trade activities have mislead the information on the actual return of Malaysian exports due to high imported input intensity found in the production of processing export. The larger the import or foreign content embedded in export the lower the domestic value added return will be. Therefore, this study deals with measuring the impacts of processing trade in Malaysia through the development of so-called "dualistic" input-output table that incorporate two type of trade structures named processing and domestic sector.

#### 1.2 Trade in Task

Rapid globalization has transformed the current international trade practices. Most of the goods nowadays are not produced in a single location, whereby the production activities have been fragmented and outsourced globally. Figure 1.1 illustrates the global production chains for the production of Apple iPhone which highly involve in international outsourcing activities. From the design of the product to the manufacture of the components, assembly, processing, and packaging activities are distributed from one country to another country (Cadarso et al., 2008). Thus, today trade has transformed from 'trade in final goods' toward to the 'trade in task' which has encouraged specialization of different economies in particular task that adds value along the production chain (IDE-JETRO and WTO, 2011).

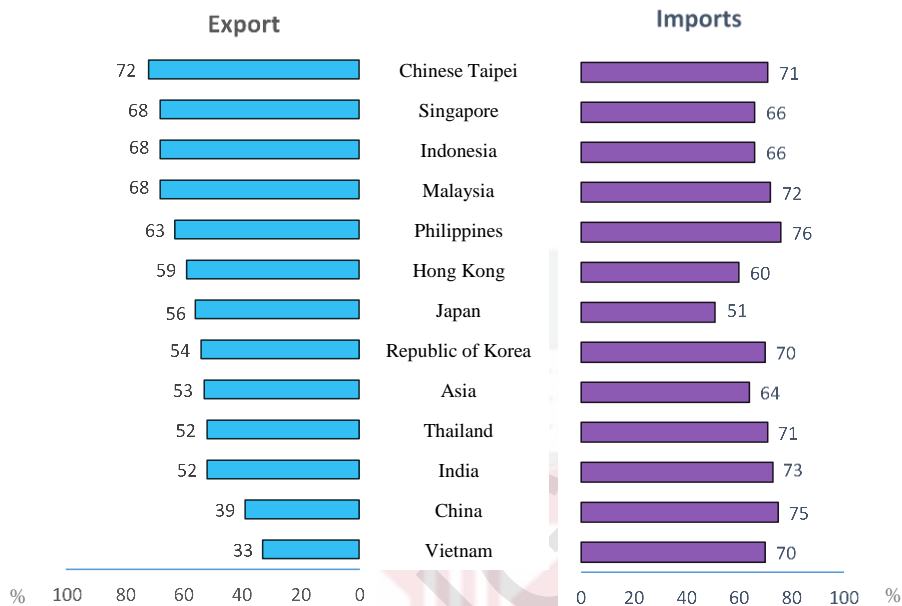


**Figure 1.1 Trade in task in the case of Apple iPhone 5s**  
(Source: The Wall Street Journal, 2014)

Various terms are used in describing trade in task in the literatures such as trade in value added, international outsourcing, vertical specialization, trade fragmentation, and processing trade. All refer to the same trade concept in which the production process has been sliced up and distributed globally. However, processing trade used by Koopman et al., (2008) or processing sector discuss in this study is more specific to describe processing and assembling activities using imported inputs for re-export purposes provided with special tariff and tax incentives treatment by the government. Explicitly, processing trade largely refers to import for export activities that normally associated with Export Processing Zones or in Malaysia widely known as Free Industrial Zones (FIZ) which is established under the Free Zones (FZ) policies (Koopman et al., 2008; Ma et al., 2009).

As results to transformation of the current trade pattern, trade in intermediate goods parts, and components have grown at a faster pace as compared to the trade in final. In the past 14 years world exports of intermediate goods have tremendously increased by 93% from 1995 to 2009 (US\$ 2,774 to US\$ 5,373 billion), with an average growth rate of 4.8% per annum product (IDE-JETRO and WTO, 2011). In fact, Malaysia is ranked number four among the major Asian traders who own huge share of intermediate goods in the country trade account, constituted 68% of the country total exports and 72% of its total imports for non-fuel goods in 2009 (as illustrated in Figure 1.2) (IDE-JETRO and WTO, 2011). This implies that Malaysia do actively involves in trade in task which require extensive evaluation on the impacts of the trade activities.

Moreover, the establishment of Free Industrial Zones (FIZ) since the year 1970 that promote export processing activities may provide justification on why Malaysia has significant share of trade in intermediate goods in the country trade account.



**Figure 1.2 Share of intermediate goods in total non-fuel trade of major Asian traders, 2009**

(Source: IDE-JETRO and WTO, 2011)

Movement from 'trade in goods' towards to the 'trade in task' requires new trade accounting approach as the traditional approach is bias and misleading (Zhang et al., 2012; Johnson and Noguera, 2012). The current changing of international trade activities has enable the re-distribution of value added embedded in export among the participation countries. Thus, to measure the actual local producer contribution on export, value of imported intermediate inputs or foreign content embedded in export need to be extracted. This is because foreign content on export is considered as the return gained by other countries who add values on the imported inputs. Traditional approach only records the contribution of exports in terms of the final gross monetary value of the products, instead of amounts that the country actually adds on the goods and ignore the foreign contents volume (Zhang et al., 2012). It should be noted that the higher the foreign content embedded in export, the lower the domestic value added return and less contribution on the country GDP and vice versa. As implication, the current national accounting practice has tendency to overestimate the export return of Malaysian economy. Therefore, new accounting approach need to be proposed to properly measure the actual performance and return of the country export.

Given the extensive growth in outsourcing, trade in task, and processing trade activities it is not surprising that a substantial amount of research has now been devoted attempting to understand the causes and consequences of this disintegration of production. Indeed, empirical works across developing countries has put emphasize on the importance to distinguish the different structure of trade due to the dissimilar consequences on the economy. Processing trade found to have high intensity of imported intermediate input use in the production due to free duty treatment provided on the imported inputs. Thus, this special characteristics have caused different impacts on local economy as compared to the normal trade activities. Empirical evidences in other countries clearly indicate that processing trade structure is unlikely to have substantial contribution to the generation of gross domestic products (see Koopman et al., 2012) but rather enlarges income inequality (see Ho et al., 2005), generates less employment (Chen et al., 2012), hires low skilled labors (Wang and Yu, 2012), pays lowest wages to the workers (Yu and Tian, 2012), lower productivity spillover (see Görg and Hanley, 2008) and increases CO<sub>2</sub> emission (Lin and Sun, 2010).

Therefore, to measure how much Malaysian export are really made in Malaysia in the current transformation of the trade structures has become a new critical issues as the traditional accounting approach is biased and misleading. Malaysia active involvement in processing trade activities have further complicate the export return measurement. To answer this important question demands for an analysis that distinguishes trade structures into processing and non-processing trade sectors. The main contribution of this study, this study will further improve the GDP accounting by separating the manufacturing sectors according to domestic and processing trade sector and integrating them consistently in a so-called "dualistic" input-output table. Disaggregating sectors into dualistic trade structure allows more information on the size, relative contribution, and impacts of proceeding trade activities to the Malaysia economy.

It should be highlighted that the dualistic nature of trade exists due to the different settings and privileges of the sectors that have diverse impact towards the economy. Processing trade or processing sector refers to trade activities conducted in special reserve areas provided by the government called as Free Industrial Zones (FIZ) area which enjoy special tariff treatment, duty drawback scheme, and other tax incentives on import and export activities. Processing trade also known as import for export activities with free duty treatment is given on the imported inputs. Thus, products exported from this area tend to have more foreign or import content in the production due to the easy access to the foreign inputs. Meanwhile, non-processing sectors are firms who are located outside of the zones and are not entitled to these benefits. The differences of these two trade structure have caused variation on the impacts toward the local economy especially in terms of the domestic value added return on export towards the country GDP.

### **1.3 Problem Statement**

Malaysia is one of the Asian countries who actively participate in processing trade activities with strong support from the government since early 1970s. To-date, Malaysia has developed 35 areas of Free Zones (FZ) which are divided into 18 Free Industrial Zones (FIZ) and 17 Free Commercial Zones (FCZ). Free Zones policies have been introduced as one of the country export expansion strategy. Specifically processing trade are promoted through FIZ which encourage firms to undertake manufacturing processing export activities, while FCZ focuses on inter-port services to support the FIZ operation. However, to the best of our knowledge, the impacts of processing trade activities on the Malaysian economy are completely limited. This is because the current national accounts framework for the estimation of Gross Domestic Product (GDP) does not make distinctions the export-oriented sectors into processing trade activities and normal trade activities. This lacking has two implications. The first implication there will be missing information regarding the relative size and contribution of processing-trade activities on macroeconomic indicators. Secondly, the magnitude spillover effects of processing trade activities into the local economy could not be quantified.

Moreover, ignoring firms participation in processing trade especially countries who actively involved in this trade activities may cause serious bias on estimating the country economics performance, export returns, firms operation, and their international trade activities (Koopman et al., 2012; Wang & Yu, 2012). Overlooking the imported input intensity in the production may cause misleading information in measuring the actual return of the Malaysia export because the higher the import content, the lower the actual return on export (domestic value added) will be. Consequently, the current GDP accounting approach fail to differentiate the dualistic nature of the Malaysia trade structure and tend to overestimate the actual export contribution. Thus, this study develops a so-called “dualistic” input-output table that separate manufacturing export-oriented sector into processing trade and normal trade activities in order to properly measure the Malaysia export returns. In addition, based on the dualistic input-output table, the structural characteristics of the processing trade activities and their contribution to the domestic economy could be revealed and this may help providing new insights to the policy makers.

### **1.4 Research Questions**

In this study, two research questions are targeted to be answered which are:

- I. How much the actual return of Malaysia export by taking into account the amount of domestic value added and foreign content embedded on the export?

- II. To what extent the size, magnitude spillover effects and contribution of processing trade activities to the local economy?

### **1.5 Objectives of the Study**

Therefore, based on the research questions formulated two objectives are aimed to be done. These include:

- I. To measure the domestic value added and foreign content embedded in the export considering the Malaysia dualistic trade structure
- II. To determine the size, spillover effect and contribution of processing trade activities to the local economy.

### **1.6 Scope of Study**

This research work study the impacts of processing trade activities conducted within the Free Industrial Zones (FIZ). The establishment of Free Industrial Zones under Free Zones policies is one of the government strategy that promote export processing trade activities in Malaysia. Currently the government has developed 18 FIZ throughout Malaysia. The study covers the period of 2010 following the latest Malaysian Input-Output table published by the Department of Statistics Malaysia (DOSM). Specifically, this study will disintegrate the FIZ firms who participate in processing trade activities from the standard Malaysian Input-Output table and classified them under processing sector. Meanwhile, the rest of the firms or industries located outside of FIZ will be categorized under domestic sector. Subsequently, both of the sectors will be incorporated together in a so-called "dualistic" input-output table.

### **1.7 Significances of the Study**

Failure to account for the firms' involvement in processing trade may cause bias in measuring the actual return of the Malaysia export, thus tend to overestimate the actual export returns on the country GDP. Studying the dualistic trade structure on Malaysia economy will provide answer for the question on how much Malaysia export are really made in Malaysia. Both of the trade structure have different foreign content or imported input intensity use in the production that result in different returns on export. Therefore, findings of the study will improve the current GDP accounting in measuring the actual return of the Malaysia export. Consequently, it will provide more accuracy to the policy maker in evaluating the export performance of Malaysian industries.

In addition, knowing the relative size, spillover effect, and contribution of processing trade activities to the local economy may provide insight for the government in the effort to re-evaluate the effectiveness of the current Free Zones policies. The result enable government to make comparison between the benefits gained from the processing export with the cost of providing various incentives and facilities to the FIZ firms. In fact, the upcoming Malaysia involvement with The Trans-Pacific Partnership Agreement (TPPA) may require extensive review on the importance of the FIZ since TPPA has the same objectives like FIZ which are to stimulate exports and attract more Foreign Direct Investment into the country. Results and findings of the study may provide evidences and justifications on the relevancy of Free Zones policies in the current context of Malaysia economy.

### **1.8 Organization of the Study**

The thesis comprises of 5 chapters. The first chapter describes the general overview of the study consisting of background of trade in task, main issues, research questions, objectives, scopes, and significances of the study.

Then, Chapter 2 provides in depth explanation on processing trade based on the facts and evidences from the existing literatures with further information regarding to the nature of the processing trade, processing trade activities in Malaysia, impacts of the trade to the economy, and methodology apply by other researchers in examining the impacts of processing trade activities.

Chapter 3 is divided into two sections (section 3.2 and 3.3). The first section (section 3.2) elaborates the basic structure and methodology in constructing the dualistic input-output table including the relevant analysis that can be applied in answering the research questions. The second section (section 3.3) discusses the data sources and estimation technique use in the analysis.

Chapter 4 exemplifies findings of the study. It starts with the explanation of the Malaysia processing structural characteristics. Then, follow with the results on relative contributions or impacts of processing trade sector covering the domestic and foreign contents embedded in exports, output and value added multipliers, and domestic linkages on local economy. The last section compares the outcome of Malaysia processing trade study with China processing trade in the effort to verify and validate the dualistic input-output table estimation.

Last but not least, Chapter 5 concludes the main findings, policy implication, limitation and recommendations of the study.

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