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**BILATERAL INTRU-INDUSTRY TRADE BETWEEN
MALAYSIA AND ASEAN PARTNERS**

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under my supervision. The relevant comments made on the paper during its presentation have been incorporated in the present version of the paper to my full satisfaction.

I have pleasure in recommending that the graduate committee may approve the paper in partial fulfilment of the requirements for the degree of Master of Economics.

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ABSTRACT

The study analyses the pattern of intra-industry trade between Malaysia and its ASEAN partners and attempts to examine its determinants in terms of both country-specific and industry-specific variables. An examination of Malaysia's aggregate intra-industry trade with all its partners indicates that two major commodity sections, Food and Machinery & Transport Equipment experienced uninterrupted growth since 1968, culminating in their positions as the two commodity sections with the highest intra-industry trade levels in 1990. Although Malaysia's intra-industry trade level with ASEAN is higher than that with its non-ASEAN partners, the gap is getting narrower.

Narrowing the analysis to 33 selected SITC groups within the two commodity sections for 1990 reveals that taste overlap between trading partners is an important country characteristic in determining intra-industry trade between Malaysia and its ASEAN neighbours. The significantly important industry characteristics are values of re-export and total trade. Results of restricted models for each of the five ASEAN partners reveal that the significance of the industry variables varies between partner countries.

TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENT	(i)
ABSTRACT	(ii)
TABLE OF CONTENTS	(iii)
LIST OF TABLES	(v)
SECTION	
1. INTRODUCTION	1
1.1 Introductory Remarks	
1.2 Objectives And Scope Of Study	
1.3 Organization Of The Paper	
2. BACKGROUND	2
2.1 The ASEAN Framework	
2.1.1 Longevity	
2.1.2 Intra-regional Setbacks	
2.1.3 Common External Stance	
2.1.4 The ASEAN Lesson	
2.2. Malaysia-ASEAN Trade Scenario	
3. THE METHODOLOGY	17
3.1 Method Of Analysis	
3.1.1 Descriptive Tools	
3.1.2 The Regression Model	
3.2 The Data	
3.3 Limitations Of Study	

4. EMPIRICAL RESULTS	26
4.1 Intra-Industry Trends	
4.1.1. Multilateral Intra-industry Trade	
4.1.2. Bilateral Intra-industry Trade	
4.1.3. Identification Of Industries	
4.2. Determinants Of Intra-Industry Trade	
5. CONCLUSION	38
REFERENCES	41

LIST OF TABLES

TABLE	PAGE
1. Malaysia : Direction of External Trade - 1985, 1992	13
2. Percentage Composition of Malaysian External Trade with ASEAN and Non-ASEAN Partners - 1992	14
3. Percentage Distribution of Malaysian Export and Import by Commodity Sections among ASEAN partners - 1992	15
4. Determinants of Intra-Industry Trade	22
5. Malaysian External Intra-Industry Trade - 1968, 1980, 1985, 1990, 1992	27
6. Malaysian Intra-Industry Trade With ASEAN and Non-ASEAN Countries - 1985, 1992	29
7. ASEAN Countries : Bilateral Intra-Industry Trade with by 1-digit SITC Commodity Section - 1992	30
8. ASEAN Countries : Bilateral Intra-Industry Trade with Malaysia by Selected 3-Digit Commodity Groups - 1990	32
9. Summary of Regression Results of Overall Model for Combined Data on Singapore, Thailand, Philippines, and Indonesia	35
10. Summary of Regression Results of Restricted Models for Singapore, Thailand, Philippines, Indonesia and Brunei	37

1. INTRODUCTION

1.1 Introductory Remarks

When tariffs and other obstructions to the flow of trade among members of ASEAN are gradually being reduced, the volume of trade is expected to expand drastically with the bulk of the increase, especially in the trade of manufactures being confined to the exchange of differentiated products within the same broad industry group.^{1,2} Thus with freer trade, specialization and international division of labour among partners are implemented at an ever increasing refinement of product differentiation.

The basic contention of such a phenomenon, according to the Linder model, is based on the per capita income of the population segments in each of the trading nations.³ A rich country with comparative advantage in production of high-quality capital intensive advanced manufactures will find a more ready market at home or in countries with similar per capita income.

¹ The Association of Southeast Asian Nations was established in August 1967 by Indonesia, Malaysia, the Philippines, Singapore, and Thailand to promote peace, stability and growth in the region. Brunei joined in 1984.

² For a brief review on the ASEAN Preferential Trading Arrangements (PTA) and other economic co-operation mechanisms, see for example John Wong(1988).

³ See for example Root (1990) p.110-117 for a discussion on the overlapping market segments in the Linder model.

When per capita income differences reach a certain higher magnitude, trade can only take place in qualitatively homogenous products.

Following the above line of arguments, determinants of intra-industry trade⁴ such as market size and taste overlap were associated with income and measured in terms of functions of income variables such as the GDP and the GNP.

1.2 Objectives And Scope Of Study

The study focuses on two main objectives :

(A) To study the trends in intra-industry trade between Malaysia and each of its ASEAN trading partners, with special emphasis being given to the more recent years. This aspect is descriptive in nature and will help to identify the sub-sectors/commodities with high incidence of intra-industry trade.

It is carried out in two phases:

(i) Tracing the patterns of intra-industry trade intensities for major commodity sections.

An increase in intra-industry trade is an indication that the trading economies are approaching a more competitive situation while a downward trend denotes growing complementarity.

4

Greenaway and Tharakan (1986) defined intra-industry trade (IIT) as the simultaneous export and import of products that are very close substitutes to each other in terms of factor inputs and consumption.

For the purpose of studying the overall pattern of intra-industry trade, the trend descriptions are generalized to all one-digit SITC items.

- (ii) Identification of Commodity Groups with high incidence of intra-industry trade.

These set of commodity groups will be the focus of study on the determinants of intra-industry trade in section 4 of this report.

- (B) Tests hypotheses on determinants of intra-industry trade between Malaysia and its ASEAN partners.

The analysis will involve employing the technique of multiple regression analysis on the 1990 cross-section data covering the commodity groups identified in a(ii) above. The following explanatory variables are tested as hypothesized determinants of intra-industry trade.

- (a) COUNTRY-SPECIFIC VARIABLES

- (i) Market size of trading partners.
- (ii) Inequality of per capita income of trading partners.
- (iii) Taste overlap.

- (b) INDUSTRY-SPECIFIC VARIABLES

- (i) Commodity type.
- (ii) Re-export content
- (iii) Product differentiation
- (iv) Total Trade

1.3 Organization Of The Paper

The paper is divided into five main sections. After a brief introduction in section 1, section 2 introduces the background to the ASEAN mechanism and presents a recent scenario of the overall trade patterns between Malaysia and its ASEAN partners. Section 3 lays down the methodology of the empirical analysis to be employed, followed by the corresponding presentation of the results in section 4. Section 5 concludes the paper with a brief review of the findings.

2. BACKGROUND

In order for us to place our observations concerning the extent of bilateral intra-industry trade between Malaysia and its ASEAN partners in the appropriate context, it is imperative that we take into consideration the ASEAN organizational mechanism, particularly those that has direct bearings on Malaysia's trade relations with the other ASEAN members.

2.1 The ASEAN Framework

The ASEAN experience is characterized by its ability to survive and remain united inspite of the failures of their joint projects.

2.1.1. Longevity

ASEAN comprises of Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Brunei (joined in 1984). Considering the short-lived nature of Third World economic groupings, the heterogeneity of its member nations with respect to politics, social, physical size and natural resource endowments, and economic development status, as well as the external environment dominated by the raging Vietnam war at the start of its formation in 1967, ASEAN's longevity is an exemplary landmark of regional co-operation. Thus, inspite of being potentially incompatible prior to the formation of ASEAN (Singapore had been independent for barely two years, Indonesia's military confrontation with Malaysia had ended a year earlier, and the philippines had not yet formally settled its dispute with Malaysia over the Malaysian state of Sabah), the association owed its longevity to the following approaches :

(i) Flexible Approach Agreeable To All

The 1967 Bangkok Declaration called for regional co-operation in a broad sense with no planning for political alliance or an economic community. This is in sharp contrast to the practice of other third world regional schemes that are characterized by ambitious targets, comprehensive programmes, and elaborate implementational procedures. By opting for an unstructured and open-ended strategy, the pace of co-operation has never been forced upon the member countries which have yet to create a sense of community.

(ii) Realization of ASEAN Solidarity

The call for ASEAN solidarity is translated into the 'consensus mechanism' in the ASEAN decision making process. Although the mechanism requires lengthy negotiations and repeated consultations, resulting in the low implementational rates of ASEAN projects, it carries important benefits which eventually outweigh its disadvantages. It has proven to be an effective means of tackling the delicate problem of 'distributive gains' from regional co-operation programmes. The trade-offs, as exemplified by the failure of ASEAN Industrial Projects, carries strong political implications in terms of satisfying the various national interests of the individual member countries.

2.1.2. Intra-regional Setbacks

The main thrust of the existing mechanism of ASEAN economic co-operation as it has evolved from the Bali summit in 1976 is made up of three basic components:

could then become viable as regional industries due to the enlarged regional market.

However, the trade-offs for equity and competitiveness which carry strong political implications (the various national objectives of the member nations must be satisfied) poses a formidable stumbling block to the approval of even the economically viable projects. The proposed projects failed to get off the ground.

(iii) ASEAN Industrial Complementation

One of the provisions of the Basic Agreement on AIC is that to entrust the ASEAN Chambers of Commerce and Industry (ASEAN - CCI) with the key role of identifying appropriate products or industries for inclusion in the AIC package. The ASEAN-CCI is the official spokesman for the private sector in this setup. Beyond this stage, the bureaucratic web becomes so complicated that so far no AIC package had actually been approved by the Economic Ministers Meeting as none was considered workable and acceptable to the ASEAN governments.

A more flexible arrangement (requiring the participation of just two firms and two ASEAN countries provided they together hold at least 51 per cent of the equity) called 'ASEAN Industrial Joint Ventures' (AIJV), was introduced in 1981. This resulted in 21 proposals being approved at the 16th ASEAN Economic Ministers Meeting in May 1984. AIJV, however, is of a small scale and piecemeal nature, the majority of the 21 proposals being confined to the making of motor-cycle and automobile parts.

2.1.3. Common External Stance

After the fall of Indo-China in 1975, ASEAN has since been wielding its unified influence to achieve extra-regional co-operation for the common interest of its members. The following are some highlights of such display of block might.

- (i) At the 17th ASEAN Economic Minister's Meeting in Bangkok in 1985, ASEAN issued a strong warning to the US government over the proposed Textiles Bill (the Jenkin's Bill).
- (ii) ASEAN has provided a framework for regular dialogue with Australia, Canada, the EC, Japan, and the US for improving bilateral relations.
- (iii) ASEAN has put pressure on the advanced countries to extend the Generalized System of Preferences (GSP) for its manufactured exports.

While these activities do not constitute globally threatening gestures to impose ASEAN'S own brand of New International Economic Order, they are effective means of invitation to mutually beneficial dialogues. The ASEAN umbrella merely legitimizes a certain degree of respect for the small member nations, enabling them to come within hearing distance to the rich and powerful.

In contrast to other third world economic co-operation arrangements which aspire for 'self reliance' and treat foreign multinationals as intruders, ASEAN policymakers have been pragmatic enough not to exclude foreign economic interests from participating in the regional co-operation processes. Thus

invitation for dialogue is complemented with an open-door policy to foreign investment.

2.1.4 The ASEAN Lesson

From the ASEAN experience, there are lessons to be learned, especially by developing countries intending to band themselves in an integration. ASEAN owes its longevity to its ability to maintain the right environment. This is achieved through its flexible and open-ended approach and its consensus-based decision-making process. While flexibility is positively anticipated, especially at the initial stage when the gains from grouping were not so apparent, the resulting web of bureaucracy due to observance of mutually agreed stringent administrative measures had seriously stunted the progress of intra-regional projects. Since more emphasis was given to protection against distributional disagreements than the economics of trade expansion, an important question is whether the final approval and subsequent allocation of AIP (urea project for Malaysia and Indonesia, the diesel engine project for Singapore, the superphosphate project for the Philippines, and soda ash project for Thailand), and AIC\AIJVC (mainly motorcycle and auto parts) programmes took into consideration the comparative advantage of each member nations.

The gains come in the form of the ability to influence extra-regional trading behaviour for the benefit of member countries, either through a unified ASEAN forum or through the mutual encouragement of foreign investment.

A relatively new form of integration that is gaining popular approvals in the ASEAN region is that of growth triangles. Growth triangles entail integration of contiguous parts or provinces of three countries such as the Singapore-Johore-Riau (Sijori), and the Northern Growth Triangle (NGT). This form of integration is expected to overcome some of the previous shortcomings of the ASEAN mechanisms. While the AIP's viability depends mainly on the enlarged regional market, growth triangles act as a 'production bloc' within which labour, technology and capital move freely, rendering the triangle into an attractive investment centre and making its products competitive internationally. The trilateral co-operation not only allows some member countries to forge closer co-operation without having to involve the rest, but extended the bureaucratic flexibility further by allowing neighbouring parts of each participating countries to be directly involved. The central governments are expected to play a facilitating role in removing bottlenecks and barriers that contribute to high production and transaction costs. Given the high degree of complementarity in resource and factor endowments among the participating countries in the Sidori and NGT triangles, growth triangles are expected to lead to further increase in intra-industry trade among participating members of ASEAN since intermediate inputs can be sourced from one another. Thus, Malaysia's Proton car can source some components from Thailand, which may in turn provide easier access for the Malaysian cars in the Thai market.

2.2 Malaysian-ASEAN Trade Scenario

Having briefly looked at the historical background pertaining to the ASEAN mechanism, and to enable us to place the more specific Malaysian bilateral intra-industry issue in the current context, we shall now look at the more recent characteristic of Malaysian trade with ASEAN partners.

As shown in table 1 below, for the 1985-1992 period, while the ASEAN share of Malaysian export increased from 25.8% to 29.5%, the corresponding ASEAN share of Malaysian import declined from 22.4% to 20.4%.

TABLE 1**MALAYSIA : DIRECTION OF EXTERNAL TRADE - 1985, 1990**

<u>DESTINATION OF EXPORT/ SOURCE OF IMPORT</u>	<u>EXPORT</u>		<u>import</u>	
	<u>1985</u> (%)	<u>1992</u> (%)	<u>1985</u> (%)	<u>1992</u> (%)
ASEAN				
Singapore	19.4	23.1	15.9	15.7
Thailand	3.4	3.7	3.5	2.5
Indonesia	0.4	1.2	1.1	1.6
Philippines	2.4	1.1	1.9	0.6
Brunei	0.2	0.4	0.0	0.0
<u>ASEAN TOTAL</u>	<u>25.8</u>	<u>29.5</u>	<u>22.4</u>	<u>20.4</u>
E.E.C.	14.5	14.9	14.4	12.5
Japan	24.4	13.3	23.0	26.0
U.S.A.	12.9	18.6	15.2	15.8
Korea, Rep. of	5.8	6.5	2.3	0.5
Taiwan	2.3	3.2	2.7	1.6
China	1.0	4.5	2.0	2.0
India	2.8	4.1	0.8	0.3
Rest of the world	10.5	5.4	17.2	20.9
<u>TOTAL</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
TOTAL VALUE (RM MILLION)	38016.7	103487.1	30437.8	101704.6

Source : Calculated from External Trade Summary, 1985, 1992,
Department of Statistics, Malaysia.

From table 2 below it is obvious that Machinery and Transport Equipments commodity section contributed a dominant share of Malaysian trade with both the ASEAN and the non-ASEAN partners, for both export and import.

TABLE 2

PERCENTAGE COMPOSITION OF MALAYSIAN EXTERNAL TRADE WITH
ASEAN AND NON-ASEAN PARTNERS - 1992

<u>COMMODITY SECTIONS</u>	<u>EXPORT</u>		<u>IMPORT</u>	
	<u>ASEAN (%)</u>	<u>ELSEWHERE (%)</u>	<u>ASEAN (%)</u>	<u>ELSEWHERE (%)</u>
Food	5.58	2.82	6.01	5.21
Beverages & Tobacco	0.49	0.00	0.19	0.44
Crude Materials	4.98	13.10	1.49	2.87
Mineral Fuels	17.62	10.82	16.49	1.02
Animal & Veg Oils	4.30	7.62	1.10	0.13
Chemicals	2.86	1.73	6.51	8.50
M'factured Goods	8.95	8.33	10.90	17.31
Machinery & Transport	45.59	43.20	49.90	56.24
Miscellaneous Manufactured Articles	9.30	11.84	5.02	5.98
Miscellaneous Transactions	0.33	0.05	2.39	2.29
All Commodity Sections	100.00	100.00	100.00	100.00

Source : Calculated from External Trade Summary, 1992,
Department of Statistics, Malaysia.

TABLE 3

PERCENTAGE DISTRIBUTION OF MALAYSIAN EXPORT AND IMPORT BY COMMODITY SECTIONS AMONG ASEAN PARTNERS - 1992

<u>Destination of M'sian Export/Origin of M'sian Import</u>						
<u>COUNTRY:</u>	<u>S'gapore</u>	<u>Indonesia</u>	<u>Thai</u>	<u>Philp.</u>	<u>Brunei</u>	<u>Total</u>
<u>COMMODITY SECTIONS</u>						
Food	Exp: 0.8537*	0.0433	0.0373	0.0222	0.0435	100.0
	Imp: 0.0916	0.2141	0.6835*	0.0107	0.0001	100.0
Beverages & Tobacco	Exp: 0.4617*	0.0167	0.0480	0.4157	0.0578	100.0
	Imp: 0.3394	0.6000*	0.0304	0.0301	-	100.0
Crude Materials	Exp: 0.3710	0.0366	0.5125*	0.0739	0.0058	100.0
	Imp: 0.3039	0.2614	0.3247*	0.1097	0.0003	100.0
Mineral Fuels	Exp: 0.5799*	0.0714	0.2447	0.0921	0.0119	100.0
	Imp: 0.9539*	0.0408	0.0011	0.0042	0.0000	100.0
Animal & Veg Oils	Exp: 0.7339*	0.2140	0.0164	0.0347	0.0010	100.0
	Imp: 0.0718	0.8110*	0.0013	0.1159	-	100.0
Chemicals	Exp: 0.5241*	0.0978	0.2408	0.0886	0.0486	100.0
	Imp: 0.7696*	0.0969	0.1230	0.0102	0.0003	100.0
M'factured Goods	Exp: 0.7533*	0.0463	0.1124	0.0623	0.0256	100.0
	Imp: 0.6225*	0.2546	0.1032	0.0194	0.0003	100.0
Machinery & Transport	Exp: 0.8904*	0.0185	0.0736	0.0129	0.0045	100.0
	Imp: 0.8446*	0.0077	0.1040	0.0435	0.0001	100.0
Miscellaneous M'factured Articles	Exp: 0.9538*	0.0059	0.0135	0.0104	0.0164	100.0
	Imp: 0.8073*	0.0887	0.0911	0.0124	0.0005	100.0
Miscellaneous Transactions	Exp: 0.7814*	0.0421	0.1343	0.0264	0.0158	100.0
	Imp: 0.9030*	0.0909	0.0034	0.0012	0.0015	100.0
All Sections	Exp: 0.7817	0.0422	0.1239	0.0397	0.0125	100.0
	Imp: 0.7703	0.0780	0.1220	0.0295	0.0002	100.0

Source: Calculated from External Trade Summary, December 92, Department of Statistics, Malaysia.

The distribution of Malaysian imports and exports among ASEAN partners for each commodity section for 1992 are shown in table 3 above. The leading countries in terms of percentage shares of Malaysian import or export for each commodity sections are highlighted with an '*' symbol. Thus, except for Malaysian imports of food, beverages & tobacco, crude materials, and animal & vegetable oils, and Malaysian export of crude materials, Singapore remains as Malaysia's dominant Asean trading partner.

3. THE METHODOLOGY

3.1. Methods of Analysis

In line with the two objectives of the study, both descriptive tools and regression analysis are used.

3.1.1. Descriptive Tools

The empirical analysis on trend of intra-industry trade concerns the following aspects:

- (i) Share of intra-industry trade in total trade.
- (ii) Identification of industries having high incidence of intra-industry trade.

At the preliminary stage of the study, and to enable us to identify the appropriate sectors to focus our attention, we employ the Grubel and Lloyd's index to gauge the intra-industry trade between Malaysia and the rest of the world as well as with the group of ASEAN countries.

According to this formulation,

$$B[i] = 1 - \frac{|X[i] - M[i]|}{(X[i] + M[i])}$$

B[i] is the index of intra-industry trade, indicating the importance of intra-industry trade to country i for an individual product group. M and X are the respective total import and export values.

Average Level Of Intra-industry Trade (Summary measure for all i commodities) for a country j,

$$B[j] = 1 - \frac{\sum |X[i] - M[i]|}{\sum (X[i] + M[i])}$$

After using the formulae in a multilateral fashion we