



UNIVERSITI PUTRA MALAYSIA

***DETERMINANT OF TRADE COSTS AND THEIR IMPACT ON
TRADE FLOWS IN ASEAN-5***

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ASEAN-5**

By

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Determinant of Trade Costs and their Impact on Trade Flows in ASEAN-5

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Trade costs may have significant impact on trade and can be caused by several factors, such as distance and infrastructural inefficiency. Based on Prabir (2006) and Promfret and Sourdin (2009), the gap between the Cost insurance and freight (CIF) and Free on board (FOB) value of trade flows are useful measure of trade cost in term of consistent volume of trade. Even though the CIF-FOB gap is frequently referred to as transport costs (Hummels 2007), but the magnitude of the trade costs is affected by many variables directly or indirectly (Anderson & Wincoop,

2004) Thus, the CIF-FOB measurement is more than freight rates by air or sea but it's reflect the policy, distance and commodity composition of trade. This study examines the role of infrastructure on trade costs in ASEAN-5 and its impact towards trade flows among member countries namely Malaysia, Indonesia, Philippines, Singapore and Thailand

To examine the role of infrastructure toward trade costs, this study adopted a panel data analysis from the period 1980 to 2009, using fixed and random effects model. The results support the findings of the previous studies such as Bernard et al. (1999), Anderson et al. (2001, 2004), Bernard et al. (2003) and Promfret et al. (2009) on distance, Hill (2004) and Coulibaly et al. (2005) on transport infrastructure, Freund et al. (2000), Yi et al. (2005) and Petropoulou (2005) on ICT, and Clark et al. (2001) on port efficiency. The analysis offer evidence that improvement in infrastructure such as paved road and railway routes facilitates the movement of goods from producers to consumers. Our result thus supports the significance of transport infrastructure quality to determine trade costs.

Likewise, using fixed and random effects model, the impact of trade costs on trade flows shows a significant relationship and has the appropriate sign. Based on bilateral data from 1990 to 2010, Gross Domestic Product for exporting and importing country (GDP_i) and (GDP_j), Endowment ($Endo$), and Common Border ($Combord$) are statistically significant. Similarly, for population, exporter country show significant and positive sign. This imply that the higher the population in exporting country, the higher the production of goods thus, the higher the export as well. In contrast, the coefficients for the population of the importer country show a negative and significant result. This indicates that increase in population in importing country will increase the demand of import.

There has been solid evidence at macroeconomic level that an efficient infrastructure would reduce trade costs and at the same time improve trade flows. This is supported by a highly significant in road, rail, sea and air infrastructure coefficient implying that an efficient, secure and integrated transport cooperation among ASEAN members is needed for recognizing the full potential of the Free Trade Area and also for intraregional trade and investment. In addition, a secure and connected information infrastructure is important for supporting the region's competitiveness and economic growth. Highly significant in ICT infrastructure such as internet and mobile phone that show better information and communication infrastructure that will lead to a reduction in trade costs and increasing the trade flows in this region.



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

**Peranan Infrastruktur terhadap Kos-kos Dagangan dan Kesannya kepada Aliran
Perdagangan di ASEAN 5**

Oleh

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Abstrak

Kos-kos dagangan boleh memberi impak yang besar ke atas perdagangan yang dipengaruhi oleh beberapa faktor, seperti jarak dan ketidakcekapan infrastruktur. Berdasarkan Prabir (2006), dan Promfret dan Sourdin (2009), jurang antara nilai “cost-insurance-freight” (CIF) dan “free-on-board” (FOB) dalam aliran perdagangan merupakan satu pendekatan yang baik dalam pengiraan kos dagangan untuk perdagangan yang konsisten. Walaupun jurang CIF-FOB sering dirujuk sebagai kos pengangkutan (Hummels, 2007), namun demikian, magnitud kos-kos dagangan dipengaruhi oleh banyak pembolehubah secara langsung atau secara tidak langsung (Anderson & Wincoop, 2004). Oleh itu, pengukuran CIF-FOB adalah lebih daripada sekadar bayaran pengangkutan melalui udara atau laut tetapi ia lebih mencerminkan dasar, jarak dan komposisi

komoditi perdagangan itu sendiri. Kajian ini tertumpu kepada peranan infrastruktur terhadap kos-kos dagangan negara ASEAN-5 dan kesannya ke atas arah aliran perdagangan di kalangan negara-negara anggota iaitu Malaysia, Indonesia, Filipina, Singapura dan Thailand

Untuk mengkaji peranan infrastruktur ke arah kos dagangan, kajian ini menggunakan analisis data panel bermula dari tahun 1980 sehingga tahun 2009, dengan menggunakan model kesan tetap dan kesan rawak. Keputusan yang diperolehi menyokong hasil kajian sebelumnya seperti Bernard et al. (1999), Anderson et al. (2001, 2004), Bernard et al. (2003) dan Promfret et al. (2009) untuk jarak, Hill (2004) dan Coulibaly et al. (2005) ke atas infrastruktur pengangkutan, Freund et al. (2000), Yi et al. (2005) dan Petropoulou (2005) untuk ICT, dan Clark et al. (2001) tentang kecekapan pelabuhan. Analisis membuktikan bahawa peningkatan dalam infrastruktur seperti jalan berturap dan laluan kereta api memudahkan pergerakan barang-barang daripada pengeluar kepada pengguna. Hasil keputusan ini menyokong kepentingan kualiti infrastruktur pengangkutan dalam menentukan kos-kos dagangan.

Begitu juga, dengan menggunakan model kesan tetap dan kesan rawak, kesan daripada kos dagangan ke atas aliran perdagangan menunjukkan hubungan yang signifikan dan memberi petunjuk yang bersesuaian. Berdasarkan data dua hala dari tahun 1990 sehingga 2010, Keluaran Dalam Negara Kasar bagi negara pengeksport and negara pengimport (GDPi) dan (GDPj), Penganugerahan (Endo), dan Sempadan Bersama (Combord) signifikan secara statik. Begitu juga, penduduk negara pengeksport menunjukkan tanda yang signifikan dan positif. Ini membayangkan bahawa lebih ramai penduduk di dalam negara pengeksport, pengeluaran barang-barang akan meningkat dan seterusnya meninggikan eksport. Sebaliknya, jika pekali bagi penduduk negara pengimport menunjukkan hasil yang negatif dan signifikan, ia menunjukkan

bahawa peningkatan jumlah penduduk dalam negara pengimport akan meningkatkan permintaan import.

Terdapat bukti yang jelas di peringkat makroekonomi bahawa infrastruktur bukan sahaja dapat mengurangkan kos dagangan tetapi pada masa yang sama meningkatkan aliran perdagangan. Ini dapat dibuktikan dengan pekali infrastruktur seperti jalan raya, kereta api, laut dan udara menunjukkan signifikan yang tinggi. Ini membayangkan bahawa kerjasama didalam pengangkutan yang lebih cekap, selamat dan bersepadu di kalangan ahli-ahli ASEAN amat diperlukan untuk menggunakan potensi sepenuhnya didalam Kawasan Perdagangan Bebas (FTA) disamping perdagangan dan pelaburan antara-rantau. Disamping itu, infrastruktur maklumat yang selamat dan berhubungkait adalah penting dalam menyokong daya saing dan pertumbuhan ekonomi kawasan ini. Signifikan yang tinggi pada pekali infrastruktur ICT seperti internet dan telefon mudah alih menunjukkan bahawa aliran maklumat dan infrastruktur komunikasi yang lebih baik akan membawa kepada pengurangan dalam kos dagangan dan seterusnya meningkatkan aliran perdagangan di rantau ini.

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May Allah s.w.t bless all the people with happiness, good health and prosperity in their life. InsyaAllah.

Amin.

I certify that and Examination Committee has met on _____ to conduct the final examination on **Mohd. Khairul Rafiz bin Ramli** on his degree thesis entitled “**The Role of Infrastructure on Trade Costs and its Impact on Trade Flows in ASEAN-5**” in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the student be awarded the **Master Science Economics**.

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DECLARATION

I declare that the thesis is my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously, and is not concurrently, submitted for any other degree at Universiti Putra Malaysia or at any other institution.



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Tarikh:

PERAKUAN

Saya memperakui bahawa tesis ini adalah hasil kerja saya yang asli melainkan petikan dan sedutan yang tiap-tiap satunya telah dijelaskan sumbernya. Saya juga memperakui bahawa tesis ini tidak pernah dimajukan sebelum ini, dan tidak dimajukan serentak dengan ini, untuk ijazah lain sama ada di Universiti Putra Malaysia atau di institusi lain.



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LIST OF ABBREVIATIONS

ADB:	Asian Development Bank
AEC:	ASEAN Economic Community
AFTA:	ASEAN Free Trade Area
APEC:	Asia-Pacific Economic Cooperation
ARF:	ASEAN Regional Forum
ASEAN:	Association of Southeast Asian Nations
ASC:	ASEAN Security Community
ASCC:	ASEAN Socio-Cultural Community
CIF:	Cost-Insurance-Freight
CEPII:	Institute for Research on International Economy
CEPT:	Common Effective Preferential Tariff
CIS:	Commonwealth of Independent States
DOTS:	Direction of Trade Statistics
EU:	European Union
FDI:	Foreign Direct Investment
FOB:	Free-On-Board
FTA:	Free Trade Area
GDP:	Gross Domestic Product
GMS:	Greater Mekong Sub-region
GNP:	Gross National Product
HS:	Harmonized Commodity Description and Coding System
ICT:	Information and Communication Technology
ISI:	Import Substituting Industrialization
IMF:	International Monetary Fund
LME:	London Metal Exchange
MNC:	Multinational Corporations
NAFTA:	North American Free Trade Agreement
PTA:	Preferential Trade Agreement
SITC:	Standard International Trade Classification
TEU:	Twenty-foot Equivalent Unit



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