



UNIVERSITI PUTRA MALAYSIA

**IMPACT OF INFRASTRUCTURE ON TRADE AND
FOREIGN DIRECT INVESTMENT IN MALAYSIA**

NOR ASMA BINTI AHMAD

FEP 2012 4

**IMPACT OF INFRASTRUCTURE ON TRADE AND FOREIGN DIRECT
INVESTMENT IN MALAYSIA**



By

NOR ASMA BINTI AHMAD

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in

Fulfilment of The Requirements for the Master of Science in Economics

February 2012

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

**IMPACT OF INFRASTRUCTURE ON TRADE AND FOREIGN DIRECT INVESTMENT
IN MALAYSIA**

By

NOR ASMA BINTI AHMAD

February 2012

Chairman: Normaz Wana Binti Ismail, PhD

Faculty: Economics and Management

This study examines the impact of infrastructure on trade and FDI in Malaysia from 1980 to 2008. The first analysis aims to test the theoretical assumption whereby the improvements in infrastructure will reduce the trade costs and will be able to enhance trading opportunities by including selected infrastructure indicators in the augmented gravity equation. A panel data is employed to capture the impact of different types of infrastructure on trade between Malaysian and its 36 trading partner whereas for the second analysis, time series of Malaysian data is estimate to capture the impact of infrastructure on FDI by using ARDL method. The results reveal that the physical, non-physical and soft infrastructure has positive impact in boosting the level of Malaysian exports. Empirical results also support that the improvement in infrastructure will affect FDI into Malaysia positively.

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

KESAN INFRASTRUKTUR KE ATAS PEDAGANGAN DAN PELABURAN LUAR LANGSUNG DI MALAYSIA

Oleh

NOR ASMA BINTI AHMAD

Februari 2012

Pengerusi: Normaz Wana Binti Ismail, PhD

Fakulti: Ekonomi dan Pengurusan

Kajian ini mengkaji kesan infrastruktur ke atas perdagangan dan FDI di Malaysia dari tahun 1980 hingga 2008. Analisis yang pertama bertujuan untuk menguji andaian teori di mana pembaikan dalam infrastruktur akan mengurangkan kos perdagangan dan akan dapat meningkatkan peluang-peluang perdagangan dengan memasukkan penunjuk infrastruktur terpilih dalam persamaan graviti diimbuhkan. Data panel digunakan untuk menunjukkan kesan pelbagai jenis infrastruktur ke atas eksport di antara Malaysia dan 36 rakan dagangannya, manakala bagi analisis kedua, data Malaysia dalam siri masa dianggarkan untuk menunjukkan kesan infrastruktur ke atas FDI dengan menggunakan kaedah ARDL. Keputusan mendedahkan bahawa infrastruktur fizikal, infrastruktur bukan fizikal dan infrastruktur tidak nampak mempunyai kesan positif dalam meningkatkan tahap eksport Malaysia. Keputusan empirikal juga menyokong bahawa pembaikan dalam infrastruktur akan mempengaruhi FDI ke Malaysia secara positif.

ACKNOWLEDGMENTS

I am grateful to the Almighty God for sustaining me through out the process of doing this thesis and for its completion. This has been challenging and exciting new experience for me. I would like to express my appreciation especially to my supervisor Dr. Nomaz Wana Binti Ismail for her helpful and valuable advice, comments, guidance and encouragement through out the process of completed this thesis. I would like to thank her for the contribution of ideas and the times she had spent for discussions that enables me to set through the problem I faced. I want to extent my appreciation to my supervisory committee member, Dr. Law Siong Hook for his suggestions and constructive comments that substantially improve my work.

I would like to express my great thanks and gratitude to my family their encouragement and supporting since I began my study in UPM. The sacrifices that my parents made for me during my study will always be remembered. Finally, I wish to thank all those who have helped in one way or another especially to my friends for helping me during the completion of the thesis.

I certify that an Examination Committee met on 16th February 2012 to conduct the final examination of Nor Asma Binti Ahmad on her Master of Science thesis entitle “The Impact of Infrastructure on Trade and FDI in Malaysia” 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 Examination Committee are as follows:

Wan Azman Saini Bin Wan Ngah, PhD

Faculty Economics and Management
Universiti Putra Malaysia
(Chairman)

Shivee Ranjane a/p Kaliappan, PhD

Faculty Economics and Management
Universiti Putra Malaysia
(Internal Examiner)

Zaleha Binti Mohd Noor, PhD

Faculty Economics and Management
Universiti Putra Malaysia
(Internal Examiner)

Ruzita Binti Mohd Amin, PhD

Associate Professor
Kuliyah of Economics and Management Sciences
(External Examiner)

SEOW HENG FONG, PhD

Professor and Deputy Dean
School of Graduate Studies
Universiti Putra Malaysia

Date:

This thesis was submitted to the Senate of the Universiti Putra Malaysia has been accepted as fulfillment of the requirement for the degree of Master of Science. The members of the Supervisory Committee were as follows:

Normaz Wana Binti Ismail, PhD

Faculty Economics and Management
Universiti Putra Malaysia
(Chairman)

Law Siong Hook, PhD

Associate Professor
Faculty Economics and Management
Universiti Putra Malaysia
(Member)

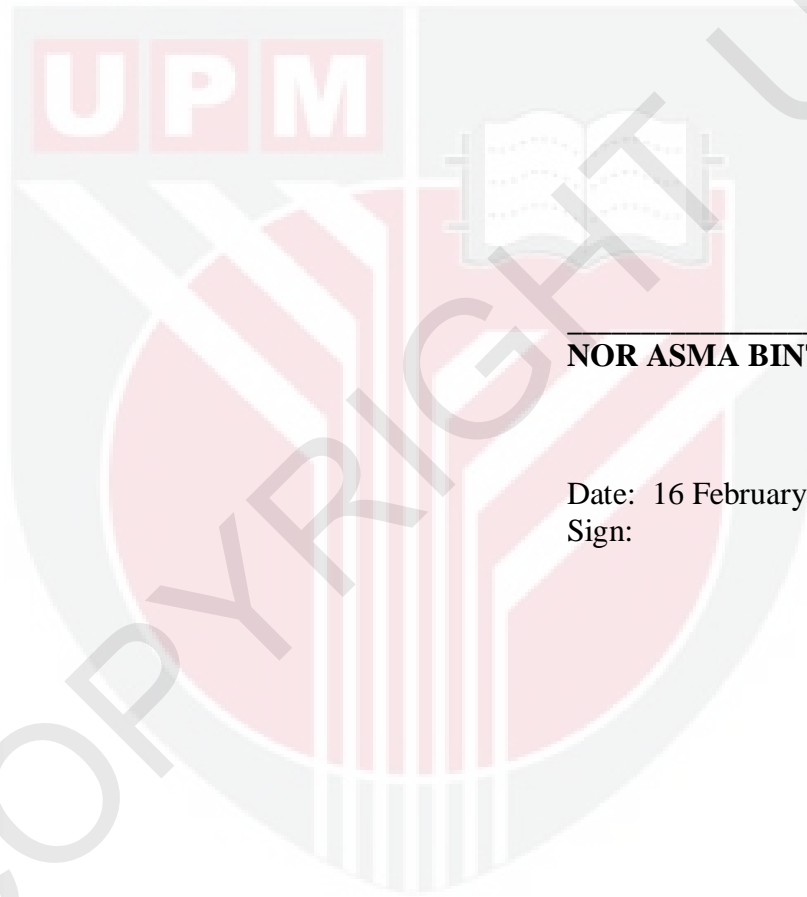
BUJANG BIN KIM HUAT, PhD

Professor and Dean
School of Graduate Studies
Universiti Putra Malaysia

Date:

DECLARATIONS

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 University Putra Malaysia or other institution.



NOR ASMA BINTI AHMAD

Date: 16 February 2012
Sign:

TABLE OF CONTENTS

	Page
ABSTRACT	ii
ABSTRAK	iii
ACKNOWLEDGEMENTS	iv
APPROVAL	v
DECLARATIONS	vii
LIST OF TABLES	xi
LIST OF FIGURES	xiii
LIST OF ABBREVIATION	xiv
CHAPTER	
1 OVERVIEW OF THE STUDY	1
1.0 INTRODUCTION	1
1.1 DEFINITIONS OF INFRASTRUCTURE	5
1.2 TRADE IN MALAYSIA	6
1.2.1 Trade Policy	6
1.2.2 Trade Performance	8
1.3 FDI IN MALAYSIA	14
1.3.1 Definition of FDI	14
1.3.2 FDI Performance	14
1.4 PROBLEM STATEMENT	20
1.5 OBJECTIVE OF THE STUDY	22
1.6 SIGNIFICANCE OF THE STUDY	22
1.7 ORGANIZATION OF THE STUDY	24
2 INFRASTRUCTURE IN MALAYSIA	26
2.0 INTRODUCTION	26
2.1 HARD INFRASTRUCTURE	26
2.1.1 Physical Infrastructure	27
2.1.1.1 Roads	27

	2.1.1.2	Railways	29
	2.1.1.3	Ports	30
	2.1.1.4	Airports	32
	2.1.2	Non-Physical Infrastructure	34
	2.1.2.1	Information and Communications Technology	34
	2.2	SOFT INFRASTRUCTURE	
	Error! Bookmark not defined.		
	2.2.1	Financial Infrastructure	
	Error! Bookmark not defined.		
	2.2.2	Doing Business	41
3	LITERATURE REVIEW		45
	3.0	INTRODUCTION	45
	3.1	THEORETICAL LITERATURE REVIEW	46
	3.1.1	Trade	46
	3.1.2	FDI	48
	3.2	EMPIRICAL LITERATURE REVIEW	50
	3.2.1	TRADE COSTS	50
	3.2.2	HARD INFRASTRUCTURE AND TRADE	55
	3.2.3	SOFT INFRASTRUCTURE AND TRADE	63
	3.2.4	INFRASTRUCTURE AND FDI	69
	3.3	GAP OF THE STUDY	75
4	CHAPTER METHODOLOGY		76
	4.0	INTRODUCTION	76
	4.1	THE IMPACT OF INFRASTRUCTURE ON TRADE	76
	4.1.1	MODEL SPECIFICATION	78
	4.1.2	THE METHOD	82
	4.1.2.1	Econometric Issues	82
	4.1.2.2	Panel Data Model	84
	4.1.2.3	The Random Effects Model	85
	4.1.2.4	The Fixed Effects Model	87
	4.1.2.5	The Hausman Test	89

4.2	THE IMPACT OF INFRASTRUCTURE ON FDI: ARDL MODEL	90
4.2.1	THE METHOD: ARDL BOUNDS TEST	92
4.3	DATA DESCRIPTION	94
4.4	SUMMARY OF THE CHAPTER	95
5	EMPIRICAL RESULT	96
5.0	INTRODUCTION	96
5.1	INFRASTRUCTURE AND TRADE	96
5.2	INFRASTRUCTURE AND FDI	104
5.2.1	Cointegration	104
5.2.2	Long run Elasticity	105
5.2.3	Short run Elasticity	110
5.3	RESULT SUMMARY	112
6	CONCLUSION	113
6.0	SUMMARY OF THE STUDY	113
6.1	POLICY IMPLICATION	115
6.2	FUTURE STUDY	117
	REFERENCES	118
	APPENDICES	133
	BIODATA OF THE STUDENT	142