



**UNIVERSITY OF MACAU
FACULTY OF SOCIAL SCIENCES AND HUMANITIES
DEPARTMENT OF ECONOMICS**

**Import Demands, Term of Trade
Effects and Total Factor Productivity
in Australia**

by

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A thesis submitted in partial fulfillment of the requirements for the degree of Master of Social Sciences at the University of Macau.

April 2012

ABSTRACT

Abstract of thesis entitled Import Demands, Term of Trade Effects and Total Factor Productivity in Australia, submitted by Lam Sut Ngo (M-A7-6805-3) for the degree of Master of Social Sciences in Economics at the University of Macau in April 2012.

Australia's nominal GDP has experienced a rapid growth since the 1960s. Its nominal GDP in 2007 is almost 43 times than that in 1966. The main reason is that the increasing in price leads the economic growth. Nevertheless, the growth in real GDP has not been substantial. Moreover, the prices and factor endowments play important role in the determination of Australian imports. Results from the economic literatures show that the own price elasticity of imports is larger in the medium run than in the short run.

The purpose of this thesis is to investigate the role of prices and factor endowments in the determination of Australian imports and to examine each factor (e.g. technological change, terms of trade, factor endowments and domestic prices) contributes on Australian nominal GDP growth. Empirical results indicate that the own price elasticity of imports in the medium run is larger than that in the short run, which is consistent to the findings of previous studies. We also find that domestic prices and capital dominate the Australia's nominal GDP growth.

DECLARATION

I hereby declare that this thesis submitted is my own work, except where due reference is made, and that it has not been accepted in this University or in any equivalent institution for a degree, diploma or other qualification, this thesis is the best of my knowledge and belief.

Signed _____



ACKNOWLEDEMENTS

I would like to express my deepest gratitude to the following persons, who support and encourage me throughout my study. Without their help, this thesis would not been accomplished.

First of all, I would like to thank my supervisor, Prof. Gary Wong, who devoted his time and effort to my thesis. He always provided helpful guidance and patience during the completion of my thesis. Next I would like to thank sincerely my committee chairperson, Prof. Patrick Ho, and my examiner, Dr. Vinh Dang for their suggestions and comments of this work.

I am also grateful to the staff in the Department of Economics, my co-workers, and my classmates for their sincere help and support in the past few years during my graduate studies. Special thank to Ms. He Miao, for her encouragement and support during these years. I also thank to Mr. Zhuo Shuaihe for his advice and moral support.

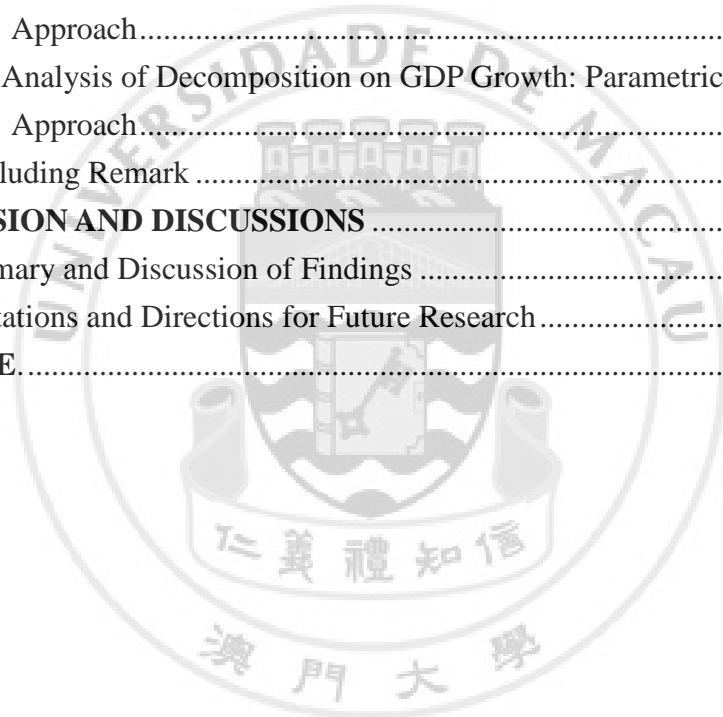
My gratefulness is also given to the University of Macau for granting me the Graduate Assistantship that enable me to concentrate on my study and research. I would also like to show my appreciation to the Department of Economics for offering me the opportunities to assist in research in the Department.

Last but not least, I am thankful to my parents, my sister and brother, and all my friends who support and animate me at every moment. I would like to express my deep appreciation to them.

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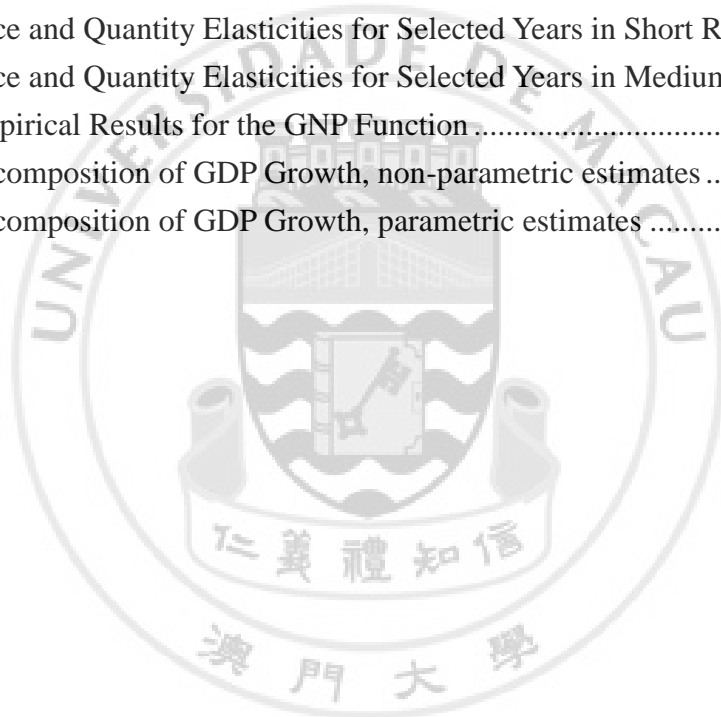
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LIST OF NOTATION

The following is a list of notation used throughout this thesis. The notation is also explained on its occurrence in subsequence chapters. Notation which is not extensively used will not be listed here but will be explained in the text.

Y	= the production possibilities set
Y^S	= the aggregate short-run production possibilities set
\mathbf{q}	= the vector of non-negative inputs
\mathbf{q}_1	= the vector of all fixed inputs
\mathbf{q}_2	= the vector of all variable inputs
\mathbf{y}	= the vector of outputs
\mathbf{p}	= the vector of outputs prices corresponding to \mathbf{y}
\mathbf{w}	= the vector of input prices corresponding to \mathbf{q}
x	= the aggregate import quantity
r	= the price index of total import
$T(\mathbf{y}, \mathbf{q})=0$	= transformation function
$\Pi(\mathbf{p}, \mathbf{w})$	= profit function
$Y(\cdot)$	= the output supply function
$Q(\cdot)$	= the input demand function
$X(\cdot)$	= the import demand function
$P_q(\cdot)$	= the inverse demand (or “shadow” price) function of fixed input
$\Gamma^S(\mathbf{y}, \mathbf{q}_1, \mathbf{q}_2)$	= the short run transformation function
$\Pi^v(\mathbf{p}, \mathbf{w}; \mathbf{q}_1)$	= the variable profit function
$\hat{\Pi}(\mathbf{p}, r; \mathbf{q})$	= the GNP function
$\Pi^M(\mathbf{p}, r, p_L; q_K)$	= the variable profit function in the medium run
$SF_i = \frac{\partial \ln \pi}{\partial \ln p_i}$	= the output supply function in GDP share form
$SF_j = \frac{\partial \ln \pi}{\partial \ln q_j}$	= the input demand function in GDP share form
$ST_i^M = \frac{\partial \ln \Pi^M}{\partial \ln p_i}$	= the i th profit share functions

$E_{ F_i p_h}$	$= \frac{\partial \log(F_i)}{\partial \log(p_h)}$
$E_{ F_i q_j}$	$= \frac{\partial \log(F_i)}{\partial \log(q_j)}$
$E_{ T_i^M p_h}$	$= \frac{\partial \log(T_i^M)}{\partial \log(p_h)}$
$E_{ T_i^M q_k}$	$= \frac{\partial \log(T_i^M)}{\partial \log(q_k)}$
δ_{ih}	= the Kronecker delta
λ_L	= the rate of technological changes for labour
λ_K	= the rate of technological changes for capital
\mathbf{ex}_t	= the vector of all exogenous variables
ξ	= the vector of parameters
$\mathbf{u}_t, \mathbf{v}_t$ and \mathbf{z}_t	= the vectors of disturbances at time t
$\boldsymbol{\varepsilon}_t, \boldsymbol{\theta}_t$ and \mathbf{v}_t	= the vectors of serially uncorrelated error terms
χ_k^2	= the chi-square critical values with k degree of freedom
$\Gamma_{t,t-1}$	= the nominal GDP growth index
$R_{t,t-1}$	= the index of technological change
$A_{t,t-1}$	= the terms of trade adjustment index
$Q_{L,t-1}$ (or $Q_{K,t-1}$)	= the labour quantity effect (or capital quantity) effect
$P_{Nt,t-1}$	= the domestic price effect for non-trade goods
$\Pi_{t,t-1}$	= the potential GDP index
$E_{t,t-1}$	= the unexplained residual

Noted:

- Vectors of values or functions are denoted in this thesis by dropping the subscripts and using bold letters.