THE IMPACT OF TRANSPORTATION IN MALAYSIAN ECONOMY :AN INPUT OUTPUT ANALYSIS

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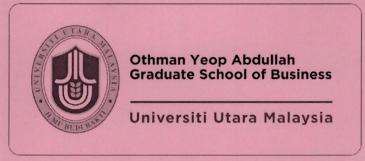
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ABSTRAK

Kertas kerja ini bertujuan untuk mengkaji peranan dan pengaruh viielati pengangkutan terhadap ekonomi viielati Malaysia dengan menggunakan kaedah analisisa input-output. Data Jadual Input Output 2005 telah digunakan untuk menganalisisa kesan pengganda dan kesan hubungan antara-industri di 23 sektor. Antara lain, sub-sektor di bawah pengangkutan yang sedang dianalisis adalah Pengangkutan Darat, Pengangkutan Udara dan Pengangkutan Air dimana termasuk Pelabuhan dan Perkhidmatan Operasi Lapangan Terbang, Lebuhraya, Jambatan dan Perkhidmatan Operasi Terowong serta Komunikasi. Pendekatan metodologi adalah melalui penggunaan kaedah input-output yang menggunakan analisisa pengganda dan analisa hubungan antara-industri. Dengan mengambil industri pengangkutan sebagai eksogen, kajian semasa ini menerokai kesan ekonomi terhadap Keluaran Dalam Negeri Kasar (KDNK), pendapatan isi rumah dan kesalinghubungan antara-industri. Keputusan menunjukkan bahawa Pengangkutan Udara dan Komunikasi di Malaysia mempunyai kekuatan yang lebih dalam menyerap produk industri berkaitan. Dari sudut penawaran, kekuatannya berdasarkan kepada kepenggunaannya sebagai input oleh industri-industri lain. Selain dari itu, ia mempunyai kapasiti relatif yang agak kuat untuk menjana industri lain.

Kata Kunci: Pengangkutan, Input-Output, Pengganda, Kesalinghubungan

ABSTRACT

This paper aims to investigate the role and influence of the transportation sector on the national economy of Malaysia by using input-output analysis. Data of Input Output Tables 2005 is used to analyse the multiplier effects and inter-industrial linkage effects in 23 sectors. Among others, the sub-sector under the transportation that are being analysed are Land Transport, Air Transport, and Water Transport which includes Port and Airport Operation Services, Highway, Bridge and Tunnel Operation Services as well as Communication. The methodological approach is through the use of input-output which utilizes the multiplier analysis and inter industrial linkages analysis. Taking the transportation industry as exogenous, current study further explores its economic effects on Gross Domestic Product (GDP), household income and inter-linkages. The results show that the Air Transport and Communication in Malaysia has more strength in absorbing the products of related industries. In term of supply, it has strength of being used as an input by other industries as well as it has a relatively strong capacity for pulling in other industries.

Keywords: Transportation, Input-Output, Multiplier, Inter Linkages

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Transportation is the most important and vital to the movement of both freight and passengers around the world. Without transportation system in every country the people can consider the activities in their life is not efficient. It is also have a benefits and role to the other industries in a national economy. The transportation network is not only important because it provides an economic base and employment, but also because it is a service that is utilized to some extent by most sectors in the economy (Kawamura, Sriraj and Lindquist , 2009). Transportation can be define as any device used to move an item or services from one location to another. Commons forms of transportation include planes, trains, automibiles. But the specific in this study is on Land Transport, Water Transport, Air Transport, Port and Airport Operation Services, Highway, Bridge and Tunnel Operation Services and Communication also considered in transportation sector.

Malaysia is a south-east Asian country and surrounding countries and water bodies of Malaysia. It covers an area of 329,750 sq km and a population of approximately 28.86 million in year 2011. Land and rail transport are responsible for providing domestic freight and passenger services, while water and air transportation

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REFERENCES

- Mohd Sahar Sauian, Norbaizura Kamaruddin and Ruzanita Mat Rani (2010), "The Importance of Transportation and Financial Sectors in the Malaysian Service Industries: An Input-Output Analysis".
- Rong-Her Chiu and Yu-Chang Lin (2012), "Applying input-output to investigate the inter-industrial linkage of transportation industry in Taiwan" Journal of Marine Science and Technology.
- Ethan Halpern-Givens (2007), "Evaluating the Economic Impact of Improvements in Freight Infrastructure: An Input-Output Approach".
- Kwak, S. J., Yoo, S. H., and Chang, J. I. (2005), "The role of the maritime industry in the Korean national economy: an input-output analysis," MarinePolicy,
- Leontief, W. (1966), Input-Output Economics, Oxford University Press, New York.
- Sauian, M.S, Aznan N F.N, Khairol Azmi N. (2009), "The importance of Service

 Sector in Value –Added Generation using Input-Output Analysis", Education and

 Management Communications in Computer and Information Science,
- Cella, G. (1984). 'The Input-Output Measurement of Interindustry Linkages'.
- Andreosso-O'Callaghan, B. & Yue, G. (2004)." *Intersectoral Linkages and Key Sectors in China, 1987-1997*". Asian Economic Journal, 18 (2), 165-183.
- Department of Statistics, Malaysia. (2005). Malaysia Input-Output Tables 2000.

- Dietzenbacher, E. & Van Der Linden, J. (1997). "Sectoral and Spatial Linkages in the EC Production Structure. Journal of Regional Science".
- Han, X., Fang, B., Chen, D., and Sloboda, B. (2010). "Household-Provided Transportation: An Extension of the TSAs".

Journal of Transportation and Statistics (2002), Volume 5, Number 2/3.

Malaysia Economic Report (2010), Ministry of Finance, Malaysia.

- Miller, R.D, Blair, P.D. (2009) "Input-Output Analysis: Foundation and Extension", Cambridge University Press.
- O'Cornor, R, Henry, E W. (1975). "Input-Output Analysis and Its Applications", Charles Griffin & Company Limited. London.
- Sauian, M.S (2007). "Input-Output Analysis: An Enthusiastic Approach in Securing Sectoral and Productivity Planning", Proceedings of the 9th International Conference in Statistical sciences, ICCS-IX Malaysia.
- Pizzoli, E. (2004) "Agricultural Sector in the Input-Output Matrix: Micro-data

 Approach for the Italian Case". Conference on Input-Output and General

 Equilibrium Modeling, Free University of Brussels.
- Lee, T, Mokhtarian, P L (2004). "An Input Output Analysis of the Relationship between Communication and Travel Industry", University of California, Davies.

Input-Output Table Malaysia 2000. Department of Statistics Malaysia, 2005.

- Annual National Accounts (2011): Gross Domestic Product 2000-2010, Department of Statistics, Malaysia.
- Economic Transformation Programme (2010): A Roadmap for Malaysia, PEMANDU, Prime Minister's Department.
- Mansor, M. (2010). "Economic Contribution of Finance and Insurance Sector to the Economy: An Input-Output Approach", M.Sc Thesis, UiTM (Unpublished).
- Baumol, William J. and Edward N. Wolff (1994) "A key role for input-output analysis in policy design. Regional Science and Urban Economics".
- Blair, Peter D. and Andrew W. Wyckoff (1989) "The changing structure of the U.S. economy: An input-output analysis".
- Dietzenbacher, Erik (2000). "Spillovers of Innovation Effects." Journal of Policy Modeling,
- Horowitz, Joel L., Frank S. Koppelman and Steven R. Lerman (1986) "A Self-Instructing Course in Disaggregate Mode Choice Modeling". Publication No. IA-11-0006, U.S. Department of Transportation, Urban Mass Transportation Administration, Washington, DC.
- Isard, Walter (1951) "Interregional and Regional Input-Output Analysis: A model of space economy. Review of Economics and Statistics"
- Kanemitsu, Hideo and Hiroshi Ohnishi (1989) "An Input-Output analysis of technological changes in the Japanese economy: 1970-1980".

Plaut, Pnina O. (1997) "Transportation-Communications Relationships in Industry".

Transportation Research.