THE IMPACT OF ENVIRONMENTAL QUALITY ON PUBLIC HEALTH EXPENDITURE IN MALAYSIA

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ABSTRACT

Health is one important factor in the development of human capital. Good health will lead to increased levels of productivity. This study was conducted to examine the co-integration between environmental quality and socio economic factor for national health expenditure. This study used secondary data from the World Bank Indicators and the Department of Statistics Malaysia. This analysis employs annual time series data on real per capita Health Expenditure (HE), real per capita Gross Domestic Product (GDP), Carbon Dioxide (CO2), Nitrogen Dioxide (NO2) and Sulphur Dioxide (SO2) emission in metric tonnes per capita, Fertility Rate (FR), Mortality Rate (MR) infant per 1,000 live births. The data were obtained from World Bank Development Indicator (WDI) and spanned over the period 1970 – 2013. This data was analyzed using the software E-views and the methodology applied was a co-integration and ARDL approach in order to explore the possibility of estimating both short and long run impacts of environmental quality. The study found that GDP, CO2, MR, FR, NO2 and SO2 could be treated as having relationship which health expenditure in the long run in Malaysia. SO2, fertility and infant mortality rate showed a significant factor in the country's health expenditures affect substantially. The new generation is an important element in ensuring the continuance and sustainability of national development in the future.
ABSTRAK

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# TABLE OF CONTENT

PERMISSION TO USE ................................................. i  
ABSTRACT ........................................................... ii  
ABSTRAK ............................................................ iii  
ACKNOWLEDGEMENT .............................................. iv  
TABLE OF CONTENT ............................................... v  
LIST OF FIGURE .................................................... vii  
LIST OF TABLE ..................................................... viii  

## CHAPTER 1: INTRODUCTION

1.1 Background of the Study ........................................ 1  
1.2 Environment Policy In Malaysia ............................... 3  
1.3 Policy on Healthcare Financing In Malaysia .................. 7  
1.4 Statement of the Problem ....................................... 10  
1.5 Research Question ............................................. 12  
1.6 Objective of the Study ......................................... 13  
1.6.1 General Objective ........................................ 13  
1.6.2 Specific objective ......................................... 13  
1.7 Significant of Study .......................................... 13  
1.8 Scope of the Study ............................................ 14  
1.9 Organization of the Study ..................................... 14  

## CHAPTER 2: LITERATURE REVIEW

2.1 Theoretical Review ............................................. 15  
2.2 Empirical Review .............................................. 20
CHAPTER 3: METHODOLOGY AND DATA

3.1 Samples and Data Description 23
3.2 Sources of Data 23
3.3 The Specification Model 24
3.4 Estimation Procedure 26
   3.4.1 Test of the Stationarity 26
   3.4.2 Co-integration Version Model 27
   3.4.3 Procedure of Boundary Test 29
3.5 Conclusion 31

CHAPTER 4: RESULTS AND DISCUSSIONS

4.1 Regression Analysis 32
4.2 Conclusion 41

CHAPTER 5: CONCLUSIONS AND POLICY IMPLICATIONS

5.1 Conclusions and Discussions 42
5.2 Policy Implications 44
5.3 Suggestion for Further Studies 45

REFERENCE 46
# LIST OF FIGURE

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1.1: Healthcare Spending In Malaysia</td>
<td>9</td>
</tr>
</tbody>
</table>
# LIST OF TABLE

<table>
<thead>
<tr>
<th>NO. TABLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 4.1:</td>
<td>33</td>
</tr>
<tr>
<td>Results of Unit Root Test</td>
<td></td>
</tr>
<tr>
<td>Table 4.2:</td>
<td>34</td>
</tr>
<tr>
<td>Autoregressive Distributed Lag Estimates; Dependent Variable is Health Expenditure (HE)</td>
<td></td>
</tr>
<tr>
<td>Table 4.3:</td>
<td>36</td>
</tr>
<tr>
<td>Co-integration Result of Bounds Test for Malaysia In Health Expenditure (HE)</td>
<td></td>
</tr>
<tr>
<td>Table 4.4:</td>
<td>37</td>
</tr>
<tr>
<td>Estimated Long-Run Coefficient Using the ARDL Approach of Log Health Expenditure (HE)</td>
<td></td>
</tr>
<tr>
<td>Table 4.5:</td>
<td>40</td>
</tr>
<tr>
<td>Result of Error Correction Representation for the Selected ARDL Model</td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER ONE

INTRODUCTION

This chapter outlines the introduction of the thesis. In this context, the rationale of the study is presented in the form of problem statement, research hypotheses and research objectives. The importance and scope of the study are also outlined in this chapter. The chapter closes with the research organization.

1.1 Background of the Study

Concern for health has traditionally underlain much of the political priority given to environmental issues across the world. There are many factors out there that influence the health of a population, such as diet, sanitation, socio-economic status, literacy, lifestyle and also environmental. The impact of environmental risk factors on health are extremely varied and complex in both severity and clinical significance. The effects of environmental degradation on human health can range from death caused by cancer due to air pollution to psychological problem resulting from noise. Air pollution from rapid industrialization and the use of energy has been recognized to be a cause of serious health problem.

The increasing deterioration in environmental quality across the world is posing serious challenge to healthy living through the increasing threat of global warming. Increase of global warming and greenhouse gas emissions due to consumption of fossil fuels was affecting the environmental quality. Particulate, sulphur dioxide and carbon dioxide emission from burning of fossil fuels are contributing significantly to pollution
The contents of the thesis is for internal user only
REFERENCE


Ministry Of Health Malaysia (MOH). Annual report from various years. Information And Documentation System Unit.


*Nigeria Economic Society Selected Paper For The 1998 Annual Conference*

267-276*

Oni, Babatunde L (2014). Analysis of the Growth Impact of Health Expenditure in 
Nigeria. *Journal Economic and Finance, Volume 3. pp77-84*

relationships in dynamic heterogenous panels*: University of Cambridge, 
Department of Applied Economics

dynamic heterogenous panels. *Journal of The American Statistical Association, 
94(446),621-634*

analysis of level relationships. *Journal of Applied Econometrics 16; 289-326*

Rahman Md Mostafizur (2011). Causal Relationship among Education Expenditure, 
Health Expenditure and GDP: A Case Study for Bangladesh. *International 
Journal Of Economics and Finance, Vol 3, No. 3*

Security, Health and Education Policies in Indonesia, Malaysia, the Philippines, 
Singapore and Thailand*. Basingstoke: Macmillan

& Barraclough, S. *Health Care In Malaysia. The Dynamics Provision, Financing 
And Access. (pp. 72-84)*. London Routledge

Ravallion, M., heil M. and Jalan J. (2000). Carbon Emission and Income Inequality, 
*Oxford Economic Papers, 52:651-669*

Level Of Government Spending Really Matters?.

Sapuan and Sanusi (2009). Assessing The Effect Of Public Social Expenditure And 
Approach. (78-82)

Expenditure and income. *Health Economics, 16(6), pp. 559-578*

Geneva: World Health Organisation
*Health Place 15; 374-382*

World Bank (2014). World Development Indicators; World Bank, Washington