



## The Determinants of CO<sub>2</sub> Emissions in Malaysia: A New Aspect

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### ABSTRACT

In light of the deterioration of environmental quality, this study aims to identify the determinants of CO<sub>2</sub> emissions in Malaysia using the autoregressive distributed lag and the decomposition-type threshold methods. This study signifies that economic growth is the main contributor to CO<sub>2</sub> emissions which is in line with the theory of the Environmental Kuznets Curve curve. Meanwhile, this study also confirms that vertical intra-industry trade between Malaysia and China together with the bilateral FDI from China to Malaysia are the significant determinants of CO<sub>2</sub> emissions in Malaysia. As such, this study suggests that the Malaysian government should monitor the implementation of the green growth strategy to enhance the sustainability of the economic and trade growth without compromising environmental quality.

**Keywords:** CO<sub>2</sub> Emissions, Economic Growth, Vertical Intra-industry Trade

**JEL Classifications:** F18, F43, Q43

### 1. INTRODUCTION

Rocketing global economic growth has been accompanied by the simultaneous increase in the world's consumption of energy and this has resulted in a surge of CO<sub>2</sub> emissions. The CO<sub>2</sub> emissions level in developing countries will surge continuously if they continue the conventional patterns of economic growth (OECD, 2012).

Based on Quitzow et al. (2013), Asia has been transformed into the major manufacturing hub of the world. This transformation has led to significant economic growth in Asian countries and has given rise to emerging markets such as Malaysia. It is noted that Malaysia was one of 13 countries identified by the Commission on Growth and Development in their 2008 Growth Report to register an average economic growth rate of more than 7% annually for 25 years consecutively or more (The World Bank Group, 2016). The remarkable trade performance was one of the main contributors to Malaysia's growth rate. Malaysia's total trade has increased from RM988.2 billion in 2009 to RM1465.4 billion in 2015 (MITI, 2015). This was mainly contributed by the manufacturing sector. Meanwhile, China has emerged as the top trading partner of Malaysia since 2009 (MITI, 2015). As China

has become the centre of global production in recent decades, the trade pattern between Malaysia and China has been focusing more on vertical intra-industry trade (VIIT). Arising from this, China's FDI outflow to Malaysia has surged from USD202.88 million in 2000 to USD294.33 million in 2010 (National Bureau of Statistics of China).

However, it is noticeable that the astonishing economic growth and trade performance of Malaysia was accompanied by a deterioration in environmental quality. CO<sub>2</sub> emissions have reached a worrisome level in which they have increased roughly two-fold from 129.5 metric tonnes in 2000–236.1 metric tonnes in 2014 (CEIC database). As such, this study aims to contribute to the literature on Malaysia's environment and trade by identifying the determinants of CO<sub>2</sub> emissions in Malaysia. This study examines whether economic growth, VIIT between Malaysia and China as well as China's FDI in Malaysia will affect CO<sub>2</sub> emissions in Malaysia as little attention has been paid to analyse the impact of VIIT and the bilateral FDI on CO<sub>2</sub> emissions in past studies. The outcome of this study will provide implications for Malaysian policy makers to enhance the sustainability of economic growth without compromising environmental quality.