THE ECONOMICS AND ENVIRONMENTAL IMPACT OF CARBON TAX IN INDONESIA: GLOBAL TRADE ANALYSIS PROJECT-ENERGY AND ENVIRONMENTAL (GTAP-E) MODELS

Abstract

Indonesia is committed to reducing emissions by 29% through Business as Usual (BAU) as a form of commitment to the Paris Agreement. To achieve this target, Indonesia will implement a carbon tax. This study uses the GTAP-E simulation model to see the impact of implementing carbon taxes on the macroeconomy and the environmental impact on Green House Gasses (GHG) emissions in Indonesia. Four scenarios are applied to see the relationship between variables. The main results of this study are carbon taxes can reduce GHG emissions in Indonesia. This policy can be used as an effective instrument for controlling pollution growth. However, the implementation of the carbon tax impacts reducing GDP and increasing the price of fossil fuels.

Keywords: GTAP-E model, carbon tax, macro economy, GHG emissions, the energy sector

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Intisari

Indonesia berkomitmen untuk menurunkan emisi sebesar 29% melalui Business As Usual (BAU) sebagai bentuk komitmennya terhadap Paris Agreement. Untuk mencapai target tersebut, Indonesia akan menerapkan pajak karbon. Studi ini menggunakan model simulasi GTAP-E untuk melihat dampak penerapan pajak karbon terhadap perekonomian macro dan dampak lingkungan berupa emisi Gas Rumah Kaca (GRK) di Indonesia. Empat scenario diterapkan untuk melihat hubungan antar variable. Hasil utama penelitian ini adalah pajak karbon dapat mengurangi GHG emission di Indonesia. Kebijakan ini dapat digunakan sebagai instrument yang efektif untuk mengontrol pertumbuhan polusi. Akan tetapi, penerapan pajak karbon berdampak pada penurunan GDP dan peningkatan harga bahan bakar fosil.

Kata kunci*: GTAP-E model, carbon tax, macro economy, GHG emissions, energy sector*