Exploring the links between Corporate Taxation and Shadow Economy effects on Carbon Dioxide (CO_2) Sectoral Emissions in the Global South

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Extended Abstract

Corporate taxes matter for both the shadow economy and the reduction of global CO_2 emissions. However, given that multinational corporations are signatories to international tax treaties, policymakers may face challenges in enacting appropriate policies to solve the issues, as CO_2 emissions from energy use and industry accounts for 2% of total CO2 emissions in 2018, or around 37.5 $GtCO_2$ per year (Olivier & Petters, 2018, 2019). This puts the goal of reducing global warming to less than 2 and 1.5 ° C in jeopardy. In 2017, G20 members alone, accounted for 78% of global CO_2 emissions, with China responsible for 26.8% in the global south in 2017 (Olivier & Petters, 2018, 2019). Closing this gap in this manner will necessitate the formalization of informal enterprises, proper policy design in terms of regulations and possibly the implementation of carbon taxes (Abid, 2015). By promoting a successful energy transition and lowering energy-related CO_2 emissions, it can lead to global decarbonization (net-zero emissions by 2050).

Corporate taxes such as carbon tax is a policy tool that can help to mitigate this environmental impact of CO_2 emissions (Allan et al., 2014; Cheng et al., 2015; Guo et al., 2014; Liu & Lu, 2015; Tang et al., 2015; Zhang et al., 2017), because untaxed or unregulated shadow economic activities have direct relationships with environmental outcomes (Abid, 2015), and the cost does not need to be high (Elkins & Baker, 2002; Lin & Jia, 2018). Knowledge gaps on the relationship between corporates taxes and the shadow economy on CO_2 emissions persist, particularly in the global south countries that act as "cheap labour" and production hub for many multinational corporations in a bid to catch up with the industrialized countries. Further research is needed to determine the feasibility of and approaches to net-zero CO_2 emissions by 2050.

In this paper, we investigate how corporate tax rates and the shadow economy affect enterprises' CO_2 sectoral emissions (manufacturing and industrial construction, residential building, and transportation) by reviewing the literature and estimating a variety of econometric techniques such as panel-corrected standard errors (PCSE), feasible generalized least squares (FGLS), and two-steps system generalized method of moments (GMM).

According to our early findings, the effects of corporate tax rates and the shadow economy vary between regions and sectors. Our findings show that increasing the corporation tax rate decreases emissions in the residential and transportation sectors, but not in the manufacturing and industrial construction sectors. The shadow economy, on the other hand, lowers emissions in the manufacturing and industrial construction sectors but not in the residential and transportation sectors. Our findings also show that market structure and economic globalization are significant determinants of CO_2 emissions, with greater effects on manufacturing, industrial construction, and transportation sectors. This suggests that governments in the global south should carefully design carbon taxes across each sector, focusing on energy-intensive enterprises while establishing a carbon emissions trading scheme. This will minimize CO_2 emissions and aid in the successful transition to renewable energy.

Keywords: Corporate tax rate; CO_2 emissions; CO_2 reductions; Shadow Economy; Global South

JEL: Q51, Q58, E26, H26, G38, C20

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