Do Countries Adjust the Carbon Intensity of Energy Towards Targets? – The Role of Financial Development on the Adjustment

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Summary

A sign of emerging downward trends in the carbon intensity of energy (CO2 intensity) is an early indicator of progress in transitioning to low-emission energy. To trade off the obligation of reducing carbon emissions against the cost saving benefits of using fossil fuels, a country may choose an optimal share of use of low-emission energy. We use the partial adjustment model based on the trade-off theory of firms' capital structure to investigate whether countries adjust their CO2 intensities towards specific targets. Using the sample covering 62 economies from 1992 to 2013, we find that the gaps between their actual and target CO2 intensities narrow over time, suggesting adjustment towards their optimal levels of the use of low-emission energy. Countries with a higher degree of financial development display faster downward than upward speeds of adjustment towards targets. However, the opposite applies to countries with a lower degree of financial development. Consistently, countries with a higher (lower) degree of financial development adjusted their CO2 intensities faster (slower) downward and slower (faster) upward towards their targets. Such findings are not related to the state of economic development of the countries. This demonstrates that financial development plays an important role in mitigating CO2 emissions.