Green Development*

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Abstract

The fast decline in the cost of renewable energy has promoted a shift toward cleaner sources. In this paper, we evaluate whether the green transition might spur faster growth in parts of the developing world by reshaping the world's economic geography. To this end, we develop a spatial dynamic economic model with an explicit energy sector. In our model, locations differ in their endowments and technology to produce fossil fuels and clean energy, as well as in the costs of shipping these energy goods across locations. These factors, in turn, determine the level of investment between energy sources and, thus, the local pace of the green transition and the overall growth of the economy. We quantify the model for more than 18,000 locations in the world using data on fossil fuel reserves, clean energy suitability, taxes and subsidies by energy source, and transportation networks. Our simulations suggest a strong inertia, as the locations that currently produce fossil fuels and clean energy increase their extent of specialization over time. Although some regions of the developing world are geographically well endowed to generate clean energy, their overall low productivity hinders a green development.

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