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ENVIRONMENTAL TAX ON DIRECTED TECHNOLOGICAL INNOVATION IN A GREEN GROWTH MODEL

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Abstract

To ensure that green growth is achieved and socially optimal, we develop an endogenous growth model featuring a directed technological innovation, environmental taxation and economic activity. Our model investigates the inner dynamic interactions of green growth. Then, a numerical analysis is presented to trace how the green growth will be achieved by the four parameters: the size of tax distortions, the rate of capital tax, the elasticity of pollution conversion and the cost of carbon abatement technological innovation. It is found that a tax distortion for lump-sum transfer payments can explore the double dividend. The benefits arising from the income tax becomes larger the more stringent capital tax and environmental tax.

Key words: carbon abatement technological innovation, endogenous growth model, environmental externality, tax distortion

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