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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 are achieved and socially optimal, we develops 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 become larger the more stringent capital tax and environmental tax.

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

*Received: March, 2019; Revised final: May, 2019; Accepted: June, 2019; Published in final edited form: September, 2019*

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