R&D subsidy policy with public debt accumulation*

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Abstract

In this study, I introduce research and development (R&D) subsidies and public debt accumulation into a basic R&D based growth model. By examining the dynamics of the public debt-wage ratio, I obtain the following results. First, dynamic inefficiency under zero public debt is not a necessary condition for a positive steady-state value of public debt; that is, long-run public debt can be positive even when the growth rate exceeds the interest rate in a zero-debt economy. Second, I replicate the pattern in which the manageable range of the initial public debt-wage ratio narrows as the income tax rate decreases. Third, I examine the effects of the income tax rate on the steady-state debt-wage ratio and the long-run growth rate, revealing a nonlinear relationship.

Keywords: Overlapping generations model, variety expansion model, R&D subsidy, public debt

JEL Classification Numbers: E13, E62, H60, O38,

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