

Dynamic Analysis of Fiscal Policy Lag in the New Keynesian Model with Exogenous Growth*

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Abstract

This study provides a theoretical analysis on the effects of a fiscal policy lag on equilibrium stability. We investigate how the effects of a fiscal policy lag vary by introducing sustained economic growth into the New Keynesian model. The New Keynesian model has been used to demonstrate that active monetary policies should be combined with passive fiscal policies to achieve local equilibrium determinacy. A previous study has also shown that when a time lag in fiscal policy responses exists, the equilibrium can become unstable even with these policies. Policy lags increase positive eigenvalues for the model, and may trigger the instability of the steady state and create volatility in the economy. However, we find that the possibility that policy lags increase negative eigenvalues in the case of sustained economic growth; that is, policy lags can contribute to economic stabilization. From a mathematical viewpoint, this is because the model economic system becomes a delay-differential equation system with delay-dependent parameters.

Keywords: New Keynesian model, policy lag, technological change, delay-differential equation, equilibrium determinacy

JEL Classification: E32; E52

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