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Public Investment, Debt, and Welfare: A Quantitative Analysis *

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Abstract

In this paper, we examine the relationship between infrastructure investment and economic welfare in the context of a heterogeneous agent, incomplete-markets economy. Using a quantitative model to match the key aggregate and distributional features of the U.S. economy over the period 1990-2015, we show that the welfare-maximizing share of public investment in GDP depends critically on whether one internalizes the transition path between stationary equilibria or not. When welfare changes are evaluated by only comparing long-run stationary equilibria, the model implies that the government should increase infrastructure investment above its average share of 4 percent of GDP in the data. However, once the transition path and short-run dynamics are internalized, welfare-maximization generates an intertemporal trade-off in the path of infrastructure spending: a short-run increase significantly above its observed share in the data, but a long-run decline below this share to satisfy the government's budget constraint.

Keywords: Infrastructure, public investment, heterogeneous agents, public debt, welfare, transitional dynamics.

JEL Classification: E2, E6, H3, H4, H6

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