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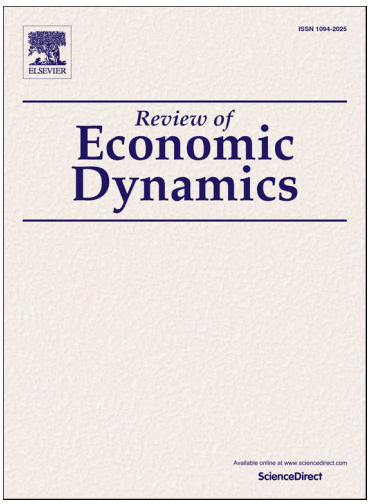

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ACCEPTED MANUSCRIPT

Public Investment, Time to Build, and the Zero Lower Bound*

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Abstract

We study the effectiveness of public investment in stimulating an economy stuck in a liquidity trap. We do so in the context of a tractable new-Keynesian economy in which a fraction of government spending increases the stock of public capital subject to a time-to-build constraint. Public investment projects typically entail significant time-to-build delays, which often span several years from approval to completion. We show that this feature implies that the spending multiplier associated with public investment can be substantially large — nearly twice as large as the multiplier associated with public consumption — in a liquidity trap. Intuitively, when the time to build is sufficiently long, and to the extent that public capital raises the marginal productivity of private inputs, the resulting disinflationary effect will occur after the economy has escaped from the liquidity trap. At the same time, the increase in households' expected wealth amplifies aggregate demand while the economy is still in the liquidity trap. Using a medium-scale model extended to allow for the accumulation of public capital, we quantify the multiplier associated with the spending component of the 2009's ARRA, which allocated roughly 40% of the authorized funds to public investment. We find a peak multiplier of 2.31. Our results also indicate that failing to account for the composition of the stimulus by overlooking its investment component would lead one to underestimate the spending multiplier by about 50%.

JEL classification: E4, E52, E62, H54
Key words: Public spending, Public investment, Time to build, Multiplier, Zero lower bound.

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