

Discussion of
“New Keynesian Dynamics in a Low Interest Rate
Environment”

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When is the government spending multiplier large?

- Some recent studies show it is very large in New Keynesian models when the nominal interest rate is constant—notably, when the economy is stuck at the ZLB.
- Between 1999 and 2005, the Bank of Japan held its policy interest rate flat at zero.
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Resource costs of price changes

- Other studies omit resource costs of price changes, $\Delta\pi$, which are a “wedge” between output (GNP) and production (Y):
$$GNP \equiv C + I + G = Y(1 - \Delta\pi)$$
- Consider the effects of an increase in G at the ZLB.
- This puts upward pressure on prices, and counters the deflationary pressure due to weak $C + I$. On net, $\Delta\pi$ will fall, which implies Y rises less than GNP .
- Hence, dY/dG will be smaller than $dGNP/dG$.

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Solution method

- The model is solved for the period 1987-2007 using an “extended shooting algorithm.”
- An advantage of this approach is that it determines the expected duration of a ZLB episode endogenously.
- A limitation is that, in forming expectations, the private sector is assumed to know the future outcome with certainty. This is likely to *understate* the effects of the ZLB, and, in turn, *understate* the size of the government spending multiplier.

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On solution methods for models with the ZLB

1 Deterministic simulations:

- *No uncertainty* about the future state of the economy.
- Least difficult to implement.
- See Fuhrer and Madigan (1997)

2 Stochastic simulations but imposing perfect foresight:

- Computational “trick”: expectations are formed according to the current state of the economy
- See Ransanaharo and Williams (2003)

3 Stochastic simulations:

- There is uncertainty about the future state of the economy
- Solve the issue of dimensionality
- See Adam and Bill (2006) and Bill (2007)

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How big is the government spending multiplier at the ZLB?

- Smaller than suggested by studies that omit the resource costs of price changes.
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