Discussion of

“The Effects of Foreign Shocks when U.S. Interest Rates are at Zero”

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Federal Reserve Board

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May 7, 2009
What are the “true” spillover effects of foreign shocks?

- Most models fail to account for the zero lower bound (ZLB) on nominal interest rates:
  - Overstate the effectiveness of monetary policy;
  - Understate the effects of adverse shocks.
- For example, open-economy models without the ZLB may understate the spillover effects of adverse foreign shocks to the U.S. economy.
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- Firms, at home and abroad, practice pricing to market;
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- The model is calibrated to the U.S. economy, and the rest of the world.
- The negative spillover from weakness in foreign economic growth is almost three times larger when the U.S. economy is at the ZLB.
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- Since this is a DSGE model, why not show *stochastic* simulations?
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- **Deterministic simulations:**
  - *(No uncertainty about the future state of the economy.)*
  - Fuhrer and Madigan (1997)

- **Stochastic simulations but imposing perfect foresight:**
  - *(Computational “trick”: expectations are formed assuming there is no uncertainty about the future state of the economy.)*
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Findings

- Comments

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1. **Deterministic simulations:**
   - Least difficult to implement.

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3. **Stochastic simulations:**
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Stochastic simulations (imposing perfect foresight) of FRB/US model with ZLB.

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Source: Reifschneider and Williams (2000)

### TABLE 1

**Macroeconomic Performance under the Taylor Rule**

<table>
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<tr>
<th>Inflation Rate</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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Percent of time funds rate bounded at zero\(^1\)
Mean duration of periods funds rate bounded\(^2\)
Constant bias adjustment to target inflation

<table>
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<th>Standard deviation of:</th>
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<tr>
<td>Output gap</td>
<td>3.6</td>
<td>3.2</td>
<td>3.0</td>
<td>2.9</td>
<td>2.9</td>
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<td>Inflation</td>
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<td>1.9</td>
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<tr>
<td>Federal funds rate</td>
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<td>2.4</td>
<td>2.5</td>
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1. Percent of quarters funds rate ≤ 5 basis points.
2. Mean number of consecutive quarters funds rate ≤ 5 basis points.

Source: Reifschneider and Williams (2000)
Are the spillover effects of foreign shocks even larger?

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• At the same time, deterministic simulations *understate* the effects of adverse shocks.

• Thus, the true spillover effects may be even larger than the paper suggests.
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