Non-uniform Wage Staggering: European Evidence and Monetary Policy Implications

Discussion by Silvana Tenreyro (LSE)

The State of Play on Money and Output

Empirically

- Monetary policy shocks have real effects

Theoretically

- Sticky wages and/or prices
  - E.g. Smets and Wouters (2003), Christiano et al (2005): if wages/prices are not sticky, monetary policy has no real effects.

This Paper

TWO FACTS (WDN, ECB)

1. Wage changes in euro area clustered at the turn of the year (WDN, ECB);

2. Wages tend to remain fixed for a year.
   - Low wage rigidity late in the calendar year
   - High wage rigidity early in the year

This Paper (cont.)

QUESTION

- Do monetary policy interventions in the euro area have different effects depending on the time of the year?

ANSWER

- No
  (or rather yes, but quantitatively very small)

APPROACH

- Take **a** "standard" DSGE model, add seasonality in the timing of wage-setting, check if the effect of MP shocks differ across seasons. This model says: **No**.

Reminiscent of a Previous Academic Debate

FACT

- Monetary policy shocks have persistent effects on output

Reminiscent of Previous Debate (cont.)

QUESTION

- Can nominal rigidity generate a persistent response of output to monetary policy shocks?

ANSWER 1 (Chari, Kehoe, McGrattan, Econometrica, 2000)

- No

APPROACH 1

- Take **a** standard DSGE model with nominal rigidity, see if monetary policy shocks generate persistent output effects. Model says: No.

Reminiscent of Previous Debate (cont.)

QUESTION

- Can nominal rigidity generate a persistent response of output to monetary policy shocks?

ANSWER 2 (Smets&Wouters, JEEA 2003; Christiano, et al. JPE 2005).

- Yes.

APPROACH 2

- Take **a slightly modified** standard DSGE model with nominal rigidity, see if monetary policy shocks in the model can generate output effects. Model says **yes.**

The Logical Flaw in Chari et al. (Econometrica 2000)

QUESTION

- Can nominal rigidity generate a persistent response of output to monetary policy shocks?

TWO ANSWERS

1. NO. To prove, need to show that no (reasonable) DSGE model can generate a persistent response.

   Chari et al only studied one model (or set of models).

2. YES. To prove, need to show one example of a (reasonable) DSGE model in which the response is persistent.

   Smets&Wouters and Christiano&al: a DSGE with some other frictions can yield persistent output responses to MP shocks.

Back to the Paper

QUESTION

- Can seasonality in nominal rigidity yield different effects of monetary interventions depending on the timing?

ANSWERS

- NO. To prove, need to show that no (reasonable) DSGE model can generate seasonal output responses.

  Julliard et al. only study one (class of) model(s).

- YES. To prove, need to show one example of a (reasonable) DSGE model in which output responses are seasonally dependent.

  Olivei and Tenreyro (2007): DSGE as in Christiano et al. (2005), with government sector and seasonality in wage setting.

  Important: Model might not help; empirical question.

My take

- Whether or not monetary policy shocks have different effects in different times of the year is **an empirical question** (unless one is able to show that no DSGE model can do it).
- The particular DSGE model chosen might not be up to the task
  (or by construction, unable to generate seasonal responses, as Chari et al was unable to generate persistence)
  - Tradeoff between persistence and seasonality.
  - Smets&Wouters's model features too much persistence (ad hoc) because it tries to match the average response, which is persistent. Calibration fine if goal is to match average responses.
  - But seasonal-dependent responses to monetary policy shocks in the US and Japan are less persistent than the average responses.

My take (cont.)

- The particular DSGE model might not be appropriate for the task
  - Smets&Wouters's model matches several empirical regularities.
  - But, like all models, Smets&Wouters's is False---otherwise it would not be a model! (e.g., complete financial markets; no government, no taxes, no default; no international trade, little backward-looking behavior)
- For an extreme analogy: It is a bit like asking Smets&Wouters's model whether there would be a debt or housing market crisis. The model is designed to match other features of the data and might not be appropriate for this question.

A model in which seasonal wage setting matters
Olivei-Tenreyro (2007)

Similarities and differences between OT and JLM. In OT:

- Habit formation in consumption; investment adjustment costs
- Firms need to borrow ex ante to pay for working capital
- Calvo wage and price setting (in JLM extension)
- Seasonality in wage-setting decisions
- Government expenditures depend on past output

  Alternatives: rule-of-thumb consumers. (Injects backward-looking behaviour and an additional kick to aggregate demand).
- Parametrization

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To sum: Why can't JLM model generate seasonal effects? What kills the season?

- All the mechanisms generating persistence.
- The parameters in Smets&Wouters seek to match the persistence of the average response to a monetary policy shock.
- In the data for the US and Japan, however, the seasonal-dependent response to monetary policy shocks is less persistent.
- Fine balance between generating persistence and seasonal responses.

A model in which seasonal wage setting matters
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JLM argue that “it’s other auxiliary dimensions of the model” that matter for the seasonal response. But:

- Only source of seasonality is time wage-setting.
- This interacts with other frictions in the model.
- Same as in Smets&Wouters or Christiano et al: only reason why money matters is nominal rigidity. This interacts with other frictions to generate persistence. Without the auxiliary dimensions, there is no persistence. Similarly, without the auxiliary dimensions, there is no seasonal effect!

Implications for Optimal Monetary Policy

- Caution about using models with reduced-form frictions to derive optimal policy. (Lucas critique).
- Agents will anticipate that the monetary authority will follow a seasonal rule, and react optimally.
- Even if seasonal effects of unanticipated monetary policy shocks were big, one would not expect an (anticipated) seasonal rule to matter. Not too surprising that seasonal rule does not have implications for relevant macro aggregates.

Interpretation of the Survey results for Europe

- Risk of using the data to feed in the model.
- OT asked in surveys: when do you make decisions regarding changes in compensation? With what frequency? Typical answer: last quarter of the year (or end of fiscal year), every year; the actual changes, tend to take effect at the beginning of the year.
- What matters for monetary policy is when the decision is made (i.e., the information available at the moment of the decision), not when the wage change is implemented.

Interpretation of the Survey results for Europe (cont)

- There might be differences between the timing of decisions and implementation.
- Olivei&Tenreyro (2010) discuss evidence of significant lags for France and the UK---more than in the US.
- In France and the UK, there is less seasonality in wage-setting decisions than in wage changes.
- The relevant information is not when wages are changed or the frequency with which they are changed (firms might optimally decide not to change them). But rather when firms make the decision!
- Perhaps the WDN can change the questions in the next survey?

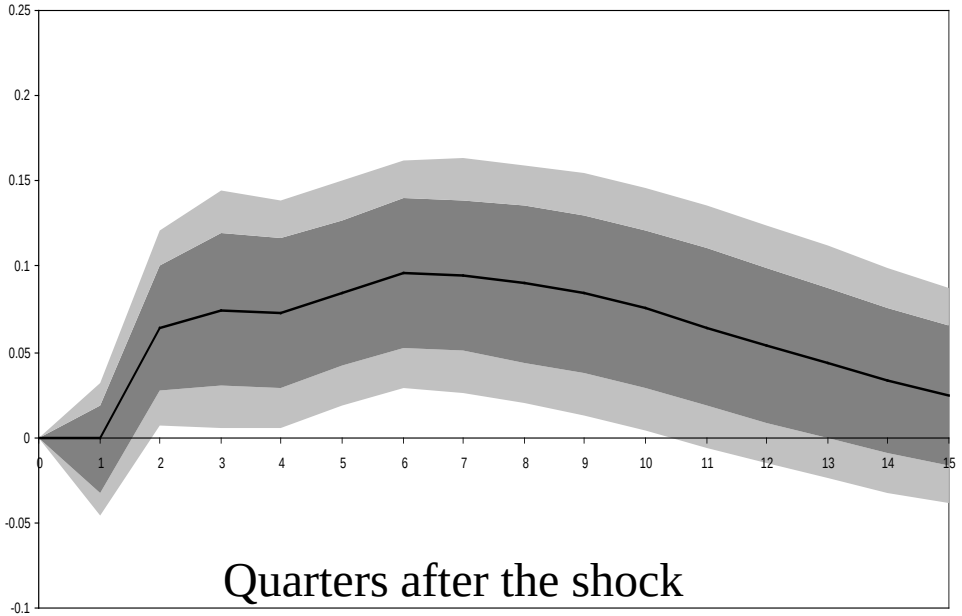
To conclude

- If it's not seasonality in wage setting decisions, this paper re-opens OT's question: What explains the seasonal response of output to monetary policy shocks in the US and Japan? (And the lack of seasonality in the UK or Germany).

Response of GDP to 25bp fall in FFR

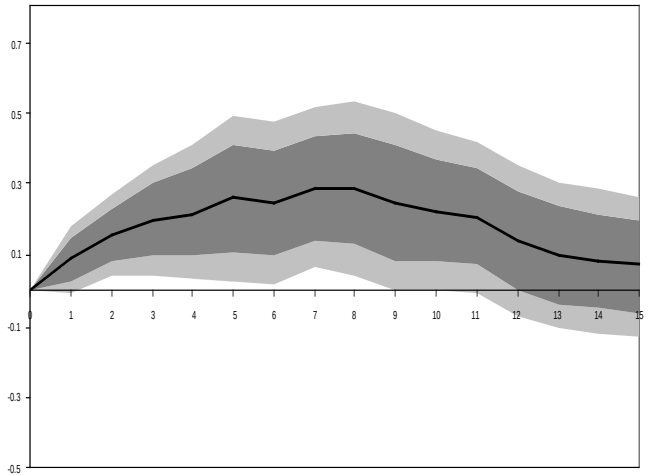
No quarterly dependence. Quarterly data. Standard model.

lnGDP

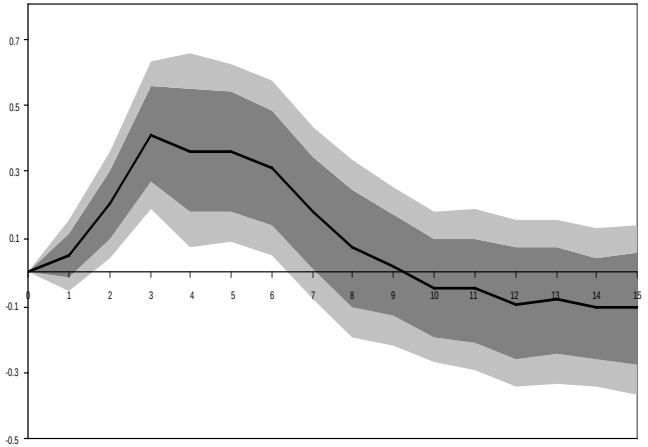


Response of GDP to 25bp fall in FFR Quarterly dependence.

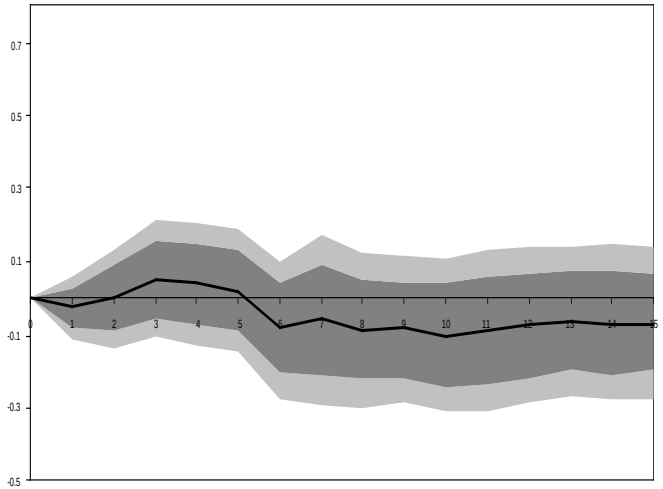
First-quarter shock



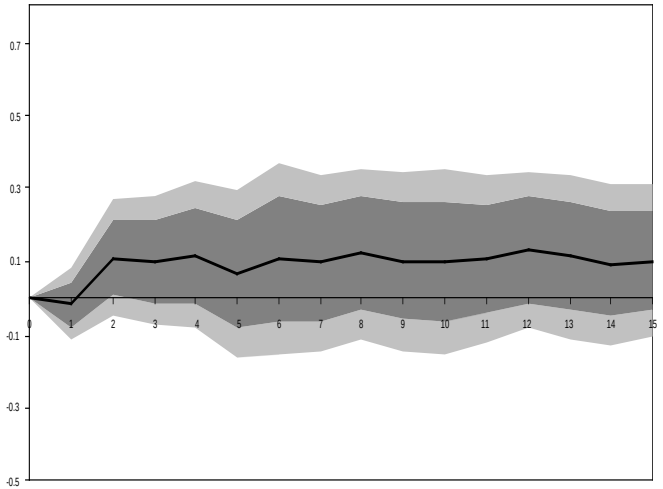
Second-quarter shock



Third-quarter shock



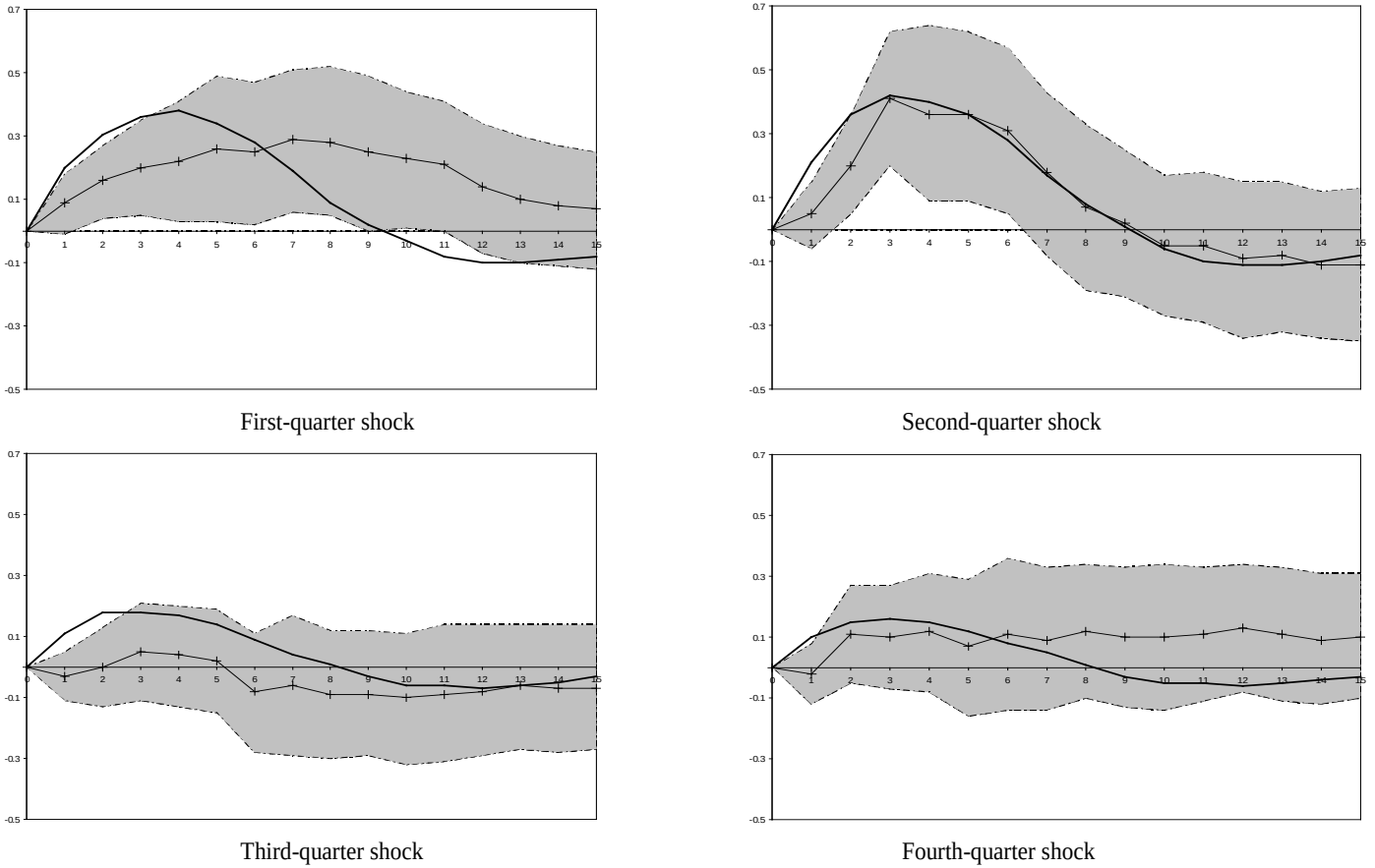
Fourth-quarter shock



Response of GDP to 25bp fall in FFR Quarterly dependence.

FIGURE 10

Model and VAR impulse responses of output to a 25-Basis Point Decline in Fed Funds Rate.



First-quarter shock

Second-quarter shock

Third-quarter shock

Fourth-quarter shock

Note: Bold solid lines are the theoretical responses and solid lines-plus sign are the VAR responses. Broken lines indicate the 95 percent confidence intervals around VAR estimates. Vertical axis units are deviations from the steady state path.