Discussion

Gregory Mankiw started the discussion by pointing out his discomfort with the sticky-price model since it can predict credible disinflations, as shown in Ball (1994), which do not happen in the world. He also questioned the use of sticky-price models with indexation because it moves the model in the direction of a Gordon-style model with backward-looking indexation. Martin Eichenbaum and Lawrence Christiano explained that with some adjustments the sticky-price model does not use backward indexation anymore and got rid of the Ball critique. Mankiw highlighted that neither sticky-price nor sticky-information models are completely right.

Mankiw then continued by questioning forward guidance made by the Fed, which was mentioned by Lars Svensson in his prepared discussion. He explained that he does not think all price setters pay attention to all the information given by the Fed; as an example he thinks bond traders pay attention, but barbers do not.

Michael Woodford applauded the authors for comparing properties of alternative empirically plausible models, especially assessing questions of the robustness in the design of monetary policy. He then reminded everybody that sticky nominal wage and price models became the dominant way of modeling aggregate supply after one type of sticky-information model did not work empirically. He expanded on this by explaining that rational expectation models of aggregate supply started with sticky-information models, which were called sticky-contracting models, and the first versions were due to Phelps and Taylor (1977) and an important contribution was also written by Fisher (1977). Contracts were infrequently revised, but in the Fisher-type model it was assumed that wages could change over the duration...
of the contract as long as the conditions determining the optimal wage were foreseen at the moment of the contract. Woodford explained that John Taylor pointed out how a monetary policy change that affected nominal aggregate demand far into the future would not have a real effect on output beyond the horizon that all agents update their information. Taylor also recognized that if wages were fixed over the length of the contract, unanticipated monetary policy could have a much longer effect. Woodford then continued asking the authors if the fit of their sticky-information model is as good as the fit of their sticky-price model. He suspects that the past problems of sticky-information-type models will not affect the fit of the authors’ dynamic stochastic general equilibrium model, since monetary policy surprises are not an important part of their story.

Woodford then further asked how it was possible in figure 3 to get an effect in output of an unanticipated monetary policy shock under the estimated sticky-information model as persistent as under the estimated sticky-price model. He recognized that part of the answer had to be that with positive probability their model allows for some agents to have an arbitrarily long length of time between information updates. Mankiw answered the question by agreeing with Woodford and adding the role of real rigidities, which is the complementarity.

Then Woodford continued by commenting on Mankiw’s remark about price setters, like barbers, not paying attention to Janet Yellen’s announcements. He agreed with Mankiw, but explained that it is not an argument in favor of sticky-information models as opposed to sticky-price models. He also interprets sticky-price models as models in which information is infrequently updated. The only difference between the two types of models is that in sticky-information models there can be a price plan that allows variations in prices between information updates.

Valerie Ramey continued the discussion by stating that it would be interesting to see more comparisons of the models at the zero lower bound (ZLB), and specifically she asked about the differences in the response to supply shocks and in the government expenditure multiplier. With respect to the first issue, the sticky-price model suggests that a negative supply shock can be expansionary at the ZLB, but Wieland (2014) finds that it is contractionary. Similarly, with respect to the government expenditure multiplier, sticky-price models suggest higher multipliers at the ZLB, but Crafts and Mills (2013) for historical UK data and Ramey and Zubairy (2013) for historical US data find no differences. Ramey finalized her comments by suggesting the inclusion
of a model with sticky financial contracts in their comparison. She mentioned that Sheedy (2013) explores monetary policy in this kind of model and finds that GDP targeting is a good idea.

Guido Lorenzoni then questioned the informational structure of the models in the aggregate demand relation. He explained that a channel through which future announcements can have important consequences in the models is through affecting inflation expectations and thus the real interest rate and spending. He explained that this could be crucial to assess differences in the models, more than differences arising in the aggregate supply.

George-Marios Angeletos proposed to include sticky information and sticky prices in simpler models to get a better understanding of their mechanisms. Additionally, he proposed that researchers compare the response of the models to news shocks, since the models make different predictions and there are identified news shocks in the literature. He finished his comments by questioning the authors about why they did not analyze the differences in inflation expectations implied by the models. As Mark Gertler mentioned in his prepared discussion, Coibon and Gordonichenko (2012) show evidence that inflation expectations move less than the econometrician’s expectations, which he thinks would benefit the sticky-information model.

Martin Eichenbaum then commented on the remarks made by Ramey. With respect to the aggregate supply effect at the zero lower bound, he questioned the interpretation of the performance of the Japanese economy after the earthquake in 2011 in Wieland (2014). He argued that the earthquake and nuclear problems could affect not only aggregate supply, but also aggregate demand. Additionally, he questioned the results that Ramey cites on the fiscal multiplier since there is conflicting evidence in Nakamura and Steinsson (2014), which studies multipliers across US states. Less formally, he explained that a larger multiplier is suggested by the different growth rates of the United States and the United Kingdom after the United Kingdom has followed a path with more fiscal austerity.

Michael Kiley answered some of the comments made at the discussion. He started by answering Eichenbaum and Ramey about the differences in fiscal multipliers and supply shocks of the two models. He explained that Kiley (2014) shows that in sticky-price models, the fiscal multiplier is bounded below by one and increases with the duration of the shock. In contrast, in sticky-information models the fiscal
multiplier is bounded above by one and decreases in the duration of the shock. Additionally, at the ZLB the sticky-price model implies that a positive productivity disturbance lowers output and the decrease is larger, the more flexible are prices. In contrast the sticky-information model implies that an increase in productivity always increases output and the increase is larger, the more frequent or flexible is information acquisition.

Answering Angeletos the author explained that he values the simplicity of models, but he finds that the model he presented is parsimonious and, in addition, has a good empirical fit. Woodford added that in the written paper there are results presented with a simpler model.

Answering the comments about the attention paid by price setters, as in the example of the bond trader and the barber, Kiley also thinks about sticky-price models as Woodford does. He added that another difference between the models is that the sticky-information model is more robust, since under certain circumstances there can be large responses under sticky prices, which are very costly, and that this does not happen in the sticky-information model. In those scenarios, the Lucas critique would be important and linearization would be a poor approximation in the sticky-price model. Answering comments made by Mark Gertler and Lars Svensson in their prepared discussions about microfoundations, the author agreed that more are needed in another paper. He recognized that microeconomic evidence is consistent with nominal price rigidities, but out of the 10 facts in Klenow and Malin (2010), he interprets five as being from the sticky-price model and five from the sticky-information model. He thinks that a realistic model would include both elements. He highlighted that with the data they are using, they cannot identify the different parameters, since both models fit it very well. Bringing more information like inflation expectations and news shocks in the analysis would help identify the necessary parameters.

Finally he recognized that he does not think that central banks use models mechanically, a comment made by Svensson. However, he thinks that the view that staff at central banks have about the world are shaped by the models they use. He explained, as an example, that a common response to the puzzle of why inflation did not fall much during this recession, is that the slope of the sticky-price model is flatter than previously thought, instead of thinking that the model could be wrong. The paper suggests that both possibilities need to be considered.