Ricardo Reis opened the discussion by arguing that from the macro-economic standpoint, frictional models of price adjustment should be judged based on their ability to explain the transmission of aggregate shocks to microeconomic price changes, and not on the overall amount of microeconomic price volatility which they account for. He disagreed with some of the remarks made by Anil Kashyap in his presentation, and instead felt that the authors provided an interesting contribution to the literature by focusing on how the distribution of price changes reacts to large and well-identified macroeconomic shocks (as in the work by Boivin, Giannoni, and Mihov 2009). However, he recommended focusing on the relative importance of extensive and intensive margin price adjustments, rather than trying to discriminate between time- and state-dependent pricing models. Indeed, he emphasized that in recent years, the literature has turned to models that incorporate both time and state dependence, such as Mankiw and Reis (2002) or Woodford (2009).

Michael Woodford made two points. First, he extended Reis’s remarks by arguing that the authors’ conclusion that the data support state-dependent models of price adjustment is a weak one, since the null hypothesis of no state dependence is easy to reject. More importantly, however, he felt that the authors were unable to provide strong evidence for any particular model of state-dependent pricing; the hazard functions they report are not flat, as predicted by the Calvo model, but they are still far from the “square well” shape predicted by the canonical $S_0$ model. Second, he responded to Anil Kashyap by pointing out that the existence of sale prices does not necessarily invalidate the authors’ assumption that price changes reflect optimal pricing deci-
sions. In particular, their assumption could be modified to allow for the possibility that firms adopt “multiprice” strategies, which may include intended sale prices. However, he explained that measuring changes to these strategies is a further challenge for the authors, and depends on whether multiprice strategies can be summarized by a single reference price.

Jonathan Parker and Peter Klenow both questioned the external validity of the authors’ findings. Parker asked whether responses to the large, publicly announced shocks considered in the paper are useful in understanding how prices respond to the smaller, more frequent shocks that occur over the business cycle. Klenow asked whether the experiences in high-inflation countries considered in the paper are useful in understanding how prices respond in low-inflation countries. Klenow also warned against generalizing properties of particular product categories (e.g., food and clothing) to all product types. The frequency of sales in food and clothing is higher than in other categories, for example, and a disproportionate amount of clothing transactions take place at sale prices.

Robert Hall made the observation that the large macroeconomic shock of 2008 and the subsequent collapse in aggregate demand seems to have had little effect on inflation, in contrast to the experience of 1929 to 1933, and asked whether the literature on microeconomic price adjustment had any insights to offer regarding the reason for this. James Kahn and Frederic Mishkin attributed this difference to changes in central bank practice, particularly banks’ recent commitment to price stability. Anil Kashyap suggested that common measures of inflation may be biased upwards because they do not account for transactions occurring at sale prices. Gita Gopinath noted that there was no visible collapse in tradable prices in recent years, so that sales alone may not be sufficient to generate “shadow” deflation. Ricardo Reis argued that the absence of deflation during the current recession does not amount to a failure of the Phillips curve, since other forces, such as cost rigidities stemming from financial shocks or increasing markup shocks, may counteract the deflationary effects of the fall in the output gap.

Robert Gordon made two separate comments. First, in response to Hall’s question, he argued that price behavior during the Great Depression was noteworthy not only because of the deflation of 1929 to 1933, but also because of the inflationary period that ensued, even though the unemployment rate remained above 19 percent until 1939. He suggested that this may reflect a regime change in the relationship between
the price level and the output gap: agents expected mean reversion in price levels before World War II, but thereafter began to expect mean reversion only in the rate of inflation. Second, building on Klenow’s remarks, he agreed that food prices might not reflect the types of price rigidities affecting other product categories, especially since food only accounts for 7 percent of households’ budget shares, down from 60 percent in 1870. He advocated research along the lines of Arthur Okun (1981) to investigate why different types of products or services exhibit different degrees of price rigidity.

Finally, Jeffrey Campbell defended the value of studying price determination in non-Walrasian environments, independently of whether this research succeeds in accounting for the observed relationship between the output gap and inflation.

During the authors’ closing remarks, David López-Salido responded to Ricardo Reis and Michael Woodford by clarifying that the core focus of their study was on those price adjustments triggered or canceled by macroeconomic shocks, rather than specifically on time versus state dependence in price changes. Etienne Gagnon explained, in response to Robert Hall’s question about recent events, that the authors had considered including the collapse of Lehman Brothers in September 2008 as another macroeconomic shock, but that they ultimately decided against it because they did not observe much price movement until at least two months later.

References


