

General Discussion: Customer Markets and Financial Frictions: Implications for Inflation Dynamics

Chair: James Poterba

Mr. De Gregorio: The paper is quite interesting in terms of monetary policy and financial conditions, more generally the point of monetary policy and its connection to financial stability. I have a concern about asymmetry in your model. Because you have that in a recession, the inflation decline is lower than what in the general recession we would have without financially constrained firms. Now, I was thinking what would happen with a financial boom? Perhaps in a financial boom, financially constrained firms want to increase their customers' base, want to invest, so I'm not sure what would be the response of prices in a financial boom, and therefore the appropriate reaction of monetary policy to a financial boom.

Mr. Feldstein: When I think about inflation, the general subject of this meeting, I think back to the period when inflation was very high, and frighteningly high. And I wonder whether this paper's analysis, with its focus on customer markets and financial friction, helps us to understand what was happening in the mid-1970s when we had 6 percent inflation, five years later 14 percent inflation, and five years after that, less than 4 percent inflation. And if I can make a quick second point on Pete Klenow's comment about how during the crisis we, or the Fed, might have used quantitative easing even more aggressively without concern about it leading to high inflation. I'm not

quite sure what more aggressive monetary policy might have meant, but I think the real downside is not the risk of inflation so much as the mispricing of assets, financial assets, and real assets like commercial real estate. So, I think that would be a reason not to pursue a more aggressive monetary policy.

Ms. Forbes: I had a very similar question to José De Gregorio. I think this paper presents a very convincing explanation for why inflation was fairly stable during the Great Recession. But do you think it is symmetric today for countries such as the United States and the U.K. where demand is strong and liquidity constraints are lower? My take on the paper was the model is symmetric, as these models traditionally are. When you look at the actual data, however, for example the firm-level data in the first part, it's very hard to see the opposite relationship during the period, say, 2006, 2007, with strong demand. You don't see the lines switch for liquidity constrained firms, and unconstrained firms. So, based on the data you've actually seen, should we put some weight that this mechanism might actually slow the return of inflation in developed economies that now don't have liquidity constraints?

Mr. Ito: My question is whether this phenomenon has been repeated in many recessions, or is this unique to 2007-09, because we have seen that corporations have been saving quite a bit after the Great Recession, and this may be a structural change from this episode and they learned how vulnerable financial constraints may have affected their businesses. So they learned this paper instinctively and they are fattening their savings. This happened in Japan after 1999, their great recession of 1998. So whether this is a repeating phenomenon or a onetime change, and whether our corporations have already learned the content of this paper.

Mr. Lacker: So, if we set aside this customer market property, and imagined that industries differ in the extent to which their relative price varies with aggregate conditions, the extent to which the relative price falls in a recession, and ask which industries would optimally hold more liquidity, obviously you'd hold more liquidity in an industry where relative prices fall more. And it strikes me that would give rise to the same cross-industry correlation that you folks identified, but

with financing essentially being endogenous rather than exogenous, and with a very different sort of dynamics. So, my questions for you are, do you have any empirical facts that this alternative view doesn't explain and are the monetary policy implications different?

Mr. Dotsey: Simon, you may have answered this in the paper, but it strikes me that the changing weights or proportions of firms with this shock might be an important driving mechanism in the impulse responses. That is, the customer base of the guys who are financially weak may eventually say it's costly to stay with this guy, but he's not lowering his price so I'm jumping. And these guys also are more likely to exit the market than the ones who are financially strong. It seems that kind of mechanism, at least I would conjecture, is maybe partially at work is to why with this financial friction, the output and inflation impulse responses are looking somewhat the same in that you're moving into more financial ... when your easy monetary policy is helping you have a greater fraction of financially stable firms that are more aggressive in their price setting and put out more output. So in the STP literature, we like to fix the weights and then see what happens, and find out how much the weights changing in the population are actually contributing. And I think if you haven't done that, that might be an interesting thing to look through so we can see if that's the general equilibrium effect and this changing weights effect is what's going on. The other question is one of, maybe you'll want to answer policy. We're eight years in. Is this still a problem where we should be unusually easy, or is this maybe something where the financial structure has become more sound and we're back on more normal footing from the empirical work you've been doing?

Mr. Blinder: The ingenious idea in this paper is that we ought to think of financial ructions as cost shocks which drive the macro results. I have two very quick remarks on that, one historical and one technical. The historical remark is that in the bad old days, when we economists talked to ordinary people, we often heard the view, "What do you mean the Fed's raising interest rates? That's going to raise costs. How is that anti-inflationary?" This paper has a little of that flavor. That's just an historical observation. Maybe we weren't so smart when we told people how dumb they were. The technical

question has to do not with what you added, but with the canonical new Keynesian model that you built it around. A financial shock is clearly both a demand shock and a supply shock. In the model that you chose to build this apparatus around, demand shocks work basically through interest rates on the consumption Euler equation, which most of us believe is not how they really work. So it seems like there's a sense in which, if I may call it the Keynesian income effect, didn't get a chance to overwhelm the substitution effect. Right? Is it the cost part or the demand part that's going to win the horse race? I see you're nodding, yes.

Ms. Rey: Very interesting paper. I was wondering whether you thought about how the effects of market structure and, in particular, of the degree of monopolistic power actually interact with your mechanism? So, if I think of Greece, for example, where most people would say that prices have not fallen nearly as much as they should have, most people would also think that it's not due to the reaction of small firms with liquidity constraints, but rather to a very high cartelization of product markets. So, a very high concentration in market share already is being shared effectively by very large firms.

Mr. Spriggs: Very interesting paper. I wondered if you wanted to venture into the new literature on why inequality matters, because it strikes me that what a firm loses most, as your model suggests, is customers, which suggests that it's the bottom part of the income distribution. You either gain or lose by getting new customers, and that really means growth from the bottom because existing customers have higher income anyway. What would happen in your model if you had two sets of customers? You had low wage and high wage, and it's the low wage ones who are dropping out and impacting your model.

Mr. Li: Very interesting paper, but I noticed that the starting point is PPI about manufacturing firms. But there is a transmission mechanism from producer price to the CPI through the service industry firms. I wonder whether the service firms behave the same way, because it seems to me that there's a missing link here.

Mr. Meltzer: Without taking anything away from this very interesting paper, as an old-time monetary economist, I have to ask,

doesn't it matter that we have low money growth during this period, in our explanation of low inflation? That is, we've had an enormous amount of stimulus, but most of it sits idle on the balance sheets of the banks—about 80 percent of it. So, there hasn't been much monetary growth if you look at M2 growth. It's never gotten above 6 percent, which one would regard as a low-inflation trajectory.

Mr. Krueger: I also wanted to praise the combination of microdata analysis and the macromodel. But I also want to echo the concern about the endogeneity of your measure of liquidity constraint and suggest using a more exogenous measure. My colleague, Alex Mas, has looked at small firms, who are much more bank dependent, and used as an exogenous shock to their financial conditions whether their bank failed. I don't think he's actually looked at prices, but he looked at employment and output, and surprising to me and probably to you, he did not see a bigger drop in output if a firm's bank had failed. I think that suggests the importance of looking at some exogenous shocks to the financial constraints.

Mr. Gilchrist: Thank you for all of the questions and the interest. They're all very pertinent questions. Let me say something about asymmetries and what parts of the business cycle we think this pertains to, which pertains to questions from José De Gregorio and Kristin Forbes. Clearly, we've shown this evidence as a recessionary phenomenon using this micro data, and on the flip side it also looks like we wouldn't get a stronger response. Having said that, though, our industry analysis is just over the entire time period. It is not focused on recessions or booms or anything else. That suggests it is not just about a financial crisis, but a more general phenomenon. The financial crisis makes this most evident, I think, but we have a tendency to say that financial frictions only matter when there's a financial crisis. But to me, that seems completely wrong. There's always a subset of firms that has difficulty accessing finance, and the question is how big that subset of firms is as a financial crisis unfolds or how a business cycle unfolds. Right? Smaller firms in the economy always have trouble getting finance if they're going to expand, especially if they're going to expand against something that can't be collateralized, such as your customer base. I think that's an important point to keep in mind.

We have looked at this across other episodes. In particular, we looked at the European debt crisis in 2010. What you see is that inflation for Spain, Italy, Greece and Portugal is clearly above what you would predict by standard models during this time period. In speaking to market structure, I think reaction from Europeans tends to be fairly positive because it seems like market structure in Europe is maybe a little less competitive than in the United States. But obviously that's an important topic, sort of how competitive things are.

Marty Feldstein and Allan Meltzer raised great points about what drives inflation overall and how it's linked to monetary policy. I don't think we're trying to explain the high inflation during the 1970s. You could ask the question whether or not this leads to some confusion about the role of cost shocks versus demand shocks, which led to certain types of responses of the monetary authority during these time periods. But clearly, there's a broader set of questions about the Great Inflation episode.

I think the mispricing of assets is an interesting phenomenon because if you think that asset prices actually feed into firms' balance sheets, and therefore influence their ability to borrow, then anything that's going to cause asset prices to boom or collapse is going to work through this mechanism as well. In my earlier work with Bernanke and Gertler, we have a financial mechanism that works through asset prices. Here, it's a very stripped down model and we don't have that mechanism, but I think it's worth thinking about how something like collateral values in land that you could borrow against as a firm might influence things.

Allan Meltzer raised a point about cost shock. There is this old literature about cost shocks, which is as interest rates rise you borrow to finance inputs, and therefore inputs become more costly. Our model has that mechanism, but that's not what drives the result. What drives the result is that, yes, costs become more expensive, but what you really are thinking about is "I'm going to give up on those future customers and keep my markets high now just to get the cash flow." And that's not in the basic cost mechanism model. This is a richer story than that one. Service firms are very interesting to look at. You

could argue that there are lots of customer relationships in service firms, but we haven't done that yet.

Alan Krueger and Jeff Lacker raise the question of endogeneity liquidity constraints. This is an obvious concern. We've done this in a number of ways. We've looked at 2008 conditioning versus as the cycle unfolds. And then importantly in our industry level analysis, there we're looking at an index which is just the average size and age of firms in a given industry, which I think is going to be pretty exogenous. There are ways to deal with this, but to the extent that we can I think we have control for the most egregious exogeneity concerns.

