

Eric Leeper

Editor's Note: *This is an abbreviated version of EF's conversation with Eric Leeper. For the full interview go to our website: www.richmondfed.org/publications*

Fiscal policy and monetary policy are distinct government functions. Fiscal policy is the government's decisions about how to tax and how to spend the proceeds. Monetary policy is often described as the central bank's actions to influence interest rates and the economy's supply of money to affect economic conditions.

How fiscal and monetary policies interact is a bit murkier. Some aspects of this question have been best answered the hard way, through experience — for example, when central banks print money to finance government spending, it can result in hyperinflation, as most famously experienced in 1920s Germany. Much less well understood are ways in which policymakers might design fiscal and monetary policies to work together to achieve desirable debt and inflation outcomes.

Economist Eric Leeper of Indiana University hopes to change that. The area is underdeveloped in part, he says, because the economics profession's understanding of fiscal policy is alarmingly poor. He also argues that mainstream monetary policy research tends to omit essential components of the economy's dynamics. As these ideas would suggest, Leeper has been willing to question conventional wisdom when it comes to policy analysis — often with a dose of humor and a passion for spreading ideas to broader audiences.

Leeper is also a member of the Research Council of the Bundesbank (Germany's central bank) and an external advisor to the Sveriges Riksbank (Sweden's central bank). Renee Haltom interviewed him in his office in Bloomington, Ind., in February 2016.

EF: You and Jon Faust argued at the 2015 Jackson Hole conference that macroeconomics hasn't paid enough attention to something you called "disparate confounding dynamics." Can you explain that view?

Leeper: DCDs have always been an important part of actual policy analysis, but they tend not to show up in the formal analyses economists do. Our formal analyses tend to focus on little fluctuations of inflation and the output gap around some long-run steady-state growth path. We're really good at doing that kind of analysis, but that's probably pretty small potatoes compared to longer-term trends: things like large swings in relative prices, declines in the labor share of income, very low frequency movements in demographics, and I would



throw fiscal policy and a lot of financial imbalances into that category, for example, household debt. Those longer-term trends are what we called "disparate confounding dynamics," and they are big factors affecting welfare in any economy.

The crisis brought all of this stuff to the forefront, and central banks have been paying a lot more attention to these lower frequency phenomena than they had before. But the problem is that they aren't really incorporated into our models, so it becomes very difficult to say anything precise about them. My view is that central banks have put far too many resources into understanding tiny fluctuations and too few resources into the things that actually matter.

EF: Is factoring them into policy analysis, then, necessarily at odds with the idea of following monetary policy rules?

Leeper: I think there are some misconceptions about rules. To me, what a rule means is that policy is behaving in some systematic fashion that anchors private sector expectations. That doesn't mean that policy is following some simple rule, and a simple rule doesn't necessarily mean that you're being systematic, because there's so much else going on in the economy. You might be behaving systematically in response to, say, inflation and an output gap, but nonsystematically in response to all that other stuff. Something like the basic Taylor rule doesn't really serve as a useful litmus test for what policy is doing in the face of these DCDs, so it's a little bizarre to me that a lot of central banks routinely calculate what the path of the interest rate would be with a simple Taylor rule as if that's a useful benchmark. It's not obvious to me what that's a benchmark for.

Central banks can behave systematically in response to DCDs without having to say, "Here's our rule." They can

recognize that, for example, as the population ages, that's going to have certain effects on saving and consumption behavior. Now, whether you can address that in a really formal, quantitative way is an open question. But it's going to have certain effects on real interest rates in the economy that should be brought into the analysis.

During the crisis, it was blatantly obvious that what Jon and I called the NICE [non-inflationary, consistently expansionary] models were of almost no value. While we could jury-rig those models to tell a story, nobody was really persuaded by those stories. Central banks recognized the limitations of those models and brought other considerations in, and that was good. The evidence for that comes from speeches by monetary policymakers, in the Fed and elsewhere, that actually bring these DCDs into the picture. Chair Janet Yellen, for example, has talked about the decline in the labor share of income, and that's a signal that they're thinking about these things.

But a lot of what I hear coming out of the Fed these days, about normalization and so forth, sounds an awful lot like the old New Keynesian way of thinking about things. It's not obvious to me the extent to which the Fed has brought the realities post-crisis into their analysis of how changes in the federal funds rate and interest on reserves affect all interest rates, quantities, and prices in the economy.

EF: What do we know about the extent to which policymakers can deviate from policy rules — defined as you did, meaning systematic policy — without changing beliefs about what the policy rule is?

Leeper: Unfortunately, I don't think we know a lot. I think that's partly because the profession seemed to have responded to the Lucas critique in one of two ways. One was paralysis, which stemmed from the iconoclastic view that, "Oh my God, we can't do policy analysis." That argument was that vector autoregressions (VARs) were of no value for policy analysis because if you change the policy rule, then all the parameters of that estimated model will change and therefore the old parameters are of no value for predicting the effects of that policy. The second reaction was, "OK, now we have all these micro-founded models, which is what Lucas told us we needed, so we can sally forth and fine-tune the way we always wanted to."

A more constructive response to the Lucas critique is to ask exactly the question that you asked: When there are unexpected policy interventions, how can we tell which aspects of the model we should continue to trust? I don't think that kind of analysis has been done very much. Some years ago, Tao Zha and I wrote a paper called "Modest Policy Interventions." We argued that if people really believe that policy can change, then they incorporate that belief into their

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expectations. We argued that a VAR may be perfectly valid for studying certain kinds of interventions, whereas for other kinds of interventions it wouldn't be. I think we've got to extend that way of thinking to the micro-founded models that everyone claims are "deep."

What Troy Davig and I show in a paper on generalizing the Taylor principle is that if you can move between two kinds of Taylor-type rules, then the nature of the equilibrium changes quite dramatically. Even if you now are under rule A, so long as you put some probability on rule B in the future, those effects are going to spill over through expectations formation into what the current equilibrium looks like. Presumably the data that we observe reflect the beliefs that people have about what future policy rules might look like and the probabilities of them. So from an empirical standpoint, it seems to me that this gives you a better approach to data than just assuming there's one rule and everyone believes it's going to be there forever.

EF: Can you describe the basic concept of "active" versus "passive" fiscal and monetary policies?

Leeper: A general definition of the terms is that an "active" policy authority is free to pursue its objectives and a "passive" authority is constrained by the behavior of the active authority and the price sector. This definition takes on specific meaning depending on the context.

At the most fundamental level, macro policy, by which I mean monetary and fiscal, has two tasks. One is to determine inflation, and the other is to make sure government debt is stable. This isn't an argument that those are the only two things governments do, but if they're not doing those two things, they can't do much else.

There are two different mixes of monetary and fiscal policy that can deliver those two tasks. The first is the way that most of the profession thinks about this: You have a central bank that aggressively targets inflation by raising the nominal interest rate sharply whenever inflation goes up, and then you tell the fiscal authority, "Now it's your job to make sure that any time government debt rises, everyone expects that you're going to raise budget surpluses in the future to finance that debt." That policy mix, which is "active monetary/passive fiscal," will achieve the two goals.

People are still resistant to the idea that there is another way you can achieve exactly those two objectives. The other way flips the assignments. If fiscal policy is active, it sets the surplus largely independent of the state of government debt and the state of inflation — maybe it's trying to do countercyclical policy or fight a war. The price level will end up getting determined through fiscal behavior, and what stabilizes debt is that the central bank lets surprise changes in inflation and bond prices revalue government debt so that the market

value of government debt equals the present value of surpluses. It doesn't try to fight inflation.

The primary insight is that the vast majority of government debt that advanced economies issue is nominal. Nominal debt is literally just a claim to more dollars in the future. Real debt — for example, inflation-indexed debt — by contrast, is actually a claim to goods. The government then has to come up with the goods, and the only way for it to do so for sure is by raising taxes. So the original regime — active monetary/passive fiscal — treats debt as real debt and forces fiscal policy to always stabilize it by changing its real backing — primary surpluses — accordingly. The alternative regime, which is passive monetary/active fiscal, recognizes that debt is nominal and that surprise changes in bond prices and in inflation can change the market value of that debt so it's consistent with what people are expecting the real backing of debt will be.

EF: How does the active/passive framework relate to the “fiscal theory of the price level”? They often get used interchangeably, perhaps incorrectly.

Leeper: All the active/passive framework is saying is that for different values for the parameters of monetary and fiscal policy, the way the price level gets determined is different. In one of them, the active monetary/passive fiscal, things look like they're governed by a quantity theory of money or the whole New Keynesian way of thinking about monetary policy. This other region, where you've got passive monetary/active fiscal, has been dubbed the “fiscal theory of the price level.”

I don't like the language of “fiscal theory” or “quantity theory,” because it's not as though there has to be only one theory about how the price level gets determined. A broader term that encompasses the two policy mixes would be “the fiscal financing theory of the price level” because ultimately it's how nominal government liabilities get financed that matters for determining the price level.

EF: Central banks generally have mandates to keep inflation low and stable. So it would seem that the central bank would want to be in the active position — for example, to make a credible commitment to stabilizing inflation to force the fiscal policymaker to stabilize debt. Is that not the right way to think about it?

Eric Leeper

► Present Positions

Rudy Professor, Indiana University;
Research Associate, National Bureau of
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► Selected Past Positions

Senior Economist (1991-1994) and
Research Officer (1995), Federal
Reserve Bank of Atlanta; Economist,
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► Education

B.S. (1980), George Mason University
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► Selected Publications

“Fiscal Foresight and Information
Flows,” *Econometrica*, 2013 (with Todd
B. Walker and Shu-Chun Susan Yang);
“Generalizing the Taylor Principle,”
American Economic Review, 2007
(with Troy Davig); “Modest Policy
Interventions,” *Journal of Monetary
Economics*, 2003 (with Tao Zha); “What
Does Monetary Policy Do?” *Brookings
Papers on Economic Activity*, 1996 (with
Christopher A. Sims and Tao Zha);
“Equilibria Under ‘Active’ and ‘Passive’
Monetary and Fiscal Policies,” *Journal of
Monetary Economics*, 1991

Leeper: People make that argument all the time. It doesn't really hold up very well when you think about the political process. The fact is that Congress can change the Federal Reserve Act, and has, even since the crisis.

I think a more general point is that there is a tendency for economists to want to wall things off. I have a paper where I talk about optimal monetary and fiscal policy, and the first slide is a picture of the Great Wall of China with monetary policy on one side and fiscal policy on the other. That's kind of how our policy institutions have evolved.

The thing is, there's not a lot of theoretical justification for creating these walls. What we're finding more and more is that there's always some role in optimal policy for using surprise inflation to revalue debt and bond prices, so long as there is some maturity to government debt. The mechanism that's at work is the fiscal theory of the price level, that alternative regime of passive monetary/active fiscal.

It's extremely controversial to propose something like that. The basis

often used is the political economy concern that really bad monetary outcomes tend to come from having a fiscal authority lean on the central bank to print money. People think there's this slippery slope in that if the Federal Reserve starts to pay attention to debt, then the next thing you know we're going to be the Weimar Republic. And maybe it is a slippery slope once you're in the political realm. But from an academic perspective, if your objective is to arrive at a rule that would be mechanically followed by a central bank, then there's no harm in having fiscal variables enter that rule. That isn't going to lead to a hyperinflation by construction. I think we want to really understand how policies interact, and then we can think about the institutional problem of implementation.

But what has happened by and large in monetary research is it starts with the wall, and so boom, it never goes over to that joint monetary-fiscal world. Central bank models impose priors that don't let the parameters go there, so there's never any horse race about which regime is a better description of the data. The slippery slope is more about following a completely different rule than what the optimal policy is suggesting. And again, the big problem is that independence is fluid. It can go away. If the Fed loses independence, then there is no wall. And then I think you really do have problems.

By the way, the active/passive dichotomy has been useful for my thinking so long as I stay in sufficiently simple models where you get this clear separation between the role of

monetary policy and the role of fiscal policy. But once you get into more complicated models, or you start thinking about jointly optimal policy, there is no clear separation. There are elements of both kinds of behavior by both the monetary authority and the fiscal authority.

EF: Have we ever experienced an episode of inflation resulting from a passive monetary/active fiscal phase with no money printing?

Leeper: That also is a hard question, but I think the answer is yes. I've been looking at the recovery from the Great Depression in 1933 when Roosevelt took the United States off the gold standard. Going off the gold standard converted government debt from effectively real debt to nominal debt because the price level under the gold standard was beyond the control of the government. At the same time, the fiscal actions Roosevelt undertook were what nowadays we would call an unbacked fiscal expansion. It was really the first time anybody had said, "Let's increase government spending and not try to balance the budget." Of course, FDR was too smart a politician to actually say that. Instead, he kept the people focused on the need to reflate the economy and get people back to work. He also cleverly created two classes of government expenditures: "regular" and "emergency." He liked to claim he balanced the regular budget, while making clear that the emergency spending was temporary until the economy recovered. This is like a fiscal rule that says the government will run deficits until the price level recovers to some pre-depression level. And the Fed was just keeping the interest rate flat. So it looked a lot like passive monetary/active fiscal.

In a paper with Margaret Jacobson and Bruce Preston, we're comparing what happened in the United States, which had a very substantial recovery both in inflation and real activity, to what happened in the United Kingdom, where they went off gold two years before and did not have that huge run up in the price level. We're still looking at data, but our conjecture is that they didn't have the fiscal component that the United States did.

What if I turn your question on its head and ask, "What has been going on in the United States for the last seven to eight years?" The federal funds rate has been effectively pegged, we've had an explosive increase in reserves, an explosive increase in government debt, and squat has happened to inflation and to expected inflation. Explain that sequence of outcomes in conventional New Keynesian models that do not explicitly include fiscal policy. The conventional model says if you peg the nominal interest rate, you get indeterminacy and you could easily have self-fulfilling inflation or deflation. At a minimum, you'd get volatility in inflation. We didn't see that. The Fed pegged the interest rate for 20 years, from the 1930s until the 1951 Treasury-Fed Accord, and we didn't see explosive inflation. So I think there are a lot of anomalies if you try to interpret the data in the conventional active monetary/passive fiscal light.

EF: What do you see as the role for fiscal policy in a situation where monetary policy faces a recession when it is at or near the zero lower bound on nominal interest rates?

Leeper: The dominant view seems to be that the only way to get monetary and fiscal policy to work together is to have the central bank print money to buy debt and, therefore, indirectly, to use money to pay for the goods that the government buys.

Alternatively, we could think about joint monetary/fiscal plans designed to anchor expectations on desired outcomes. Initially, it seemed that this is what Abenomics [the colloquial name of the policies of Shinzō Abe, Japan's prime minister] aimed to achieve through its three arrows: monetary expansion, fiscal stimulus, and structural reform. Then the Japanese government capitulated to external pressure and raised the consumption tax in 2014, effectively ending any progress Abenomics made. Now the finance minister, Tarō Asō, is confirming the government's plan to raise taxes again in 2017. This is a classic example of a government being unwilling to decide if its priority is to get the economy going or to reduce government debt. Think about what this kind of behavior does to fiscal expectations — it sure isn't anchoring them on expansion.

Suppose the government were to announce a fiscal policy of running primary deficits until inflation rises to some threshold, while the central bank continues to avoid raising interest rates sharply in the face of rising inflation. This is the FDR policy of reflation. Once the threshold is achieved, the government could move to running small primary surpluses on average. Theory tells us that this ought to work because it is a way to implement an unbacked fiscal expansion. Of course, one would need to check in a formal model whether this delivers the desired outcomes, but the logic seems to be right. It operates off of a type of fiscal forward guidance because the announcement tells people not to expect the deficits to be offset by subsequent surpluses.

Making fiscal policy actions contingent on economic outcomes may seem unusual, but that's only because fiscal policy is generally so arbitrary. The idea isn't any different than when the central bank announces it will maintain zero interest rates until some measurable economic outcomes occur, a proposal that several Fed presidents have made in recent years.

It probably isn't politically feasible in any of the austerity-obsessed advanced economies. But this obsession, I think, also stems from a misunderstanding about fiscal sustainability. The press and politicians do not seem to appreciate the distinction between the face value and the market value of government debt. Sustainability says that the real market value of outstanding debt must equal the expected discounted present value of primary surpluses. It isn't about the face value of debt. This policy, if it works, would raise expected inflation, which depresses bond prices, and maybe raise current inflation, which depresses the real value of outstanding debt. Measured in the economically

relevant way, as the real market value, there would not be a huge run-up in debt. There would be a run-up in nominal debt.

EF: Have the sovereign debt crises of recent years taught us anything about fiscal limits — the point at which financial markets will no longer allow the government to add to its debt burden — that we didn't know previously?

Leeper: One thing the eurozone crisis should've taught us is that one-size-fits-all policies don't make sense. There are these ideas of thresholds for the ratio of debt to GDP, like 90 percent, where you go to hell in a handbasket if you get to 91. Countries can get into trouble at very different levels of debt. Japan is at around 240 percent, if you believe that number, and there's no evidence of any fiscal crisis there.

The idea for fiscal limits that I employ was formalized in the dissertation of a former graduate student of mine, Huixin Bi, who is now at the Kansas City Fed. This approach emphasizes that it's the distance between the level of debt and the fiscal limit that matters for how risky debt is. Because the fiscal limit is a probability distribution and it can shift around a lot — with shocks that are hitting the economy or changes in political party or what have you — you could be thinking you're in pretty good shape and then something happens. That's part of why these crises can come on quickly. But it also works the other way: If you do a certain kind of fiscal reform, that should be pushing the fiscal limit far away and things ought to be safe.

Slovakia has a fiscal council that tried to compute the fiscal limit distribution for their country. They did two things to connect it to their economy. One was they said that productivity shocks have a fat tail — if you get a bad shock, there's a higher probability you'll get another bad shock. The second thing is they geared the expectations about transfers to the population to their demographics. They end up concluding that their country shouldn't go beyond a 40 percent debt-to-GDP ratio, in contrast to the Maastricht Treaty's 60 percent limit for the eurozone.

I think that's a good example of the kind of analysis that could be done in a lot of countries. Sure, there are lots of issues with it and you may not buy that number, but at least the thought process is coherent. For me, what thinking about fiscal limits has done is point to all these things that we need to be thinking about. Some you may be able to quantify, some you may not be able to. But you at least need to be thinking about them.

EF: What are you working on next?

Leeper: I mentioned some historical work that is trying to see if there is a fiscal interpretation to the recovery in 1933 in the United States and contrasting that to the United Kingdom. I think there's interesting stuff to be done about the gold standard, a lot of nostalgia about it that is really

misplaced. There are some people who look at the price level in 1823 and in 1870, note they were the same, and conclude the gold standard is therefore price level targeting, but it wasn't at all. The gold standard wasn't created for that purpose; it was entirely about international trade. But one aspect that hasn't been talked about is that there were pretty severe fiscal restrictions associated with the gold standard, and not just that fiscal policy had to be passive and eventually pay off the debt. If the government was short on gold, how was it going to acquire more? It seems like there has to be some sort of tax backing. I'm stunned that there is no canonical modern model of the gold standard that you can turn to.

There are two other projects I want to mention. Markus Brunnermeier, who's at Princeton, and I are both on the Bundesbank Research Council. We've proposed the creation of a network to study the interactions among monetary policy, fiscal policy, and financial stability. The idea is to try to bring academics and policymakers together who are using really different methodologies and looking at really different data to try to address some common sets of questions. I keep telling you, "We don't know the answer to that." This is designed to identify what the relevant questions are and how we can answer them.

The second project is with John Cochrane and Tom Coleman. I don't really want to call it a project on the fiscal theory, but that's sort of what it is. I like to think of it as trying to understand how the price level gets determined. We're trying to bring a disparate group of people together, some known fiscal theorists and some known skeptics of the fiscal theory. We've got Tom Sargent, Chris Sims, John Cochrane, Stephen Williamson, Narayana Kocherlakota, and a bunch of other people. Getting young economists and graduate students involved is the key — we want to get young researchers really excited about this.

Part of the problem is that we don't even have the data: You need to have the market value of government debt, the maturity structure of government debt, good measures of the primary surplus, and good measures of real discount rates. You can't go to FRED and download this stuff. We want to try to build some datasets that would look across countries and time and start to answer some of these questions about which policy regime prevailed.

We also want to ask where the holes are in the theory. A huge one is: How is the price level determined in Europe? I don't have any idea. You've got very different inflation processes in all these countries, and what's determining those? That's a pretty fundamental question. You might think we would've figured that out before creating a monetary union.

One objective is to communicate about monetary/fiscal interactions to policymakers and the general public, defined as financial market participants, politicians, etc. We hope that an outgrowth of the project will be essays and monographs that undergraduates and other generally educated folks can understand.

EF