Comments on “Global Imbalances and Currency Wars at the ZLB,” by Ricardo J. Caballero, Emmanuel Farhi, and Pierre-Olivier Gourinchas

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This is a great paper. I’m going to sound a bit critical, but I’ll explain at the end.

20 years ago, international economists puzzled that capital and trade flows seemed too small, as characterized by the Feldstein-Horioka and home bias puzzles. Briefly, countries that wanted to save more seemed to do it at home, rather than abroad, and countries that wanted to invest more seemed to do it from domestic savings rather than borrow abroad.

Then, the world started to look a bit more like our models, but international economists changed their minds. Now, they think capital and trade flows are too large, “global imbalances,” and “savings gluts,” needing strong policy remediation.

I seem to live in a different world. Let me summarize some key issues and differences between my world and this paper’s world.

**Why are interest rates so low?**

In this paper’s world, low interest rates and “global imbalances” come from inability to “produce safe stores of value”

This is entirely a financial friction. Real investment opportunities are unchanged. Economies can’t “produce” enough pieces of paper. In the model, there is a binding limit on how much of an investment project that firms can pledge to back financial assets, and government debt is financed only by taxing the young.

In my world, real interest rates are low because real investment opportunities are bad — the marginal product of capital is low. Exchange rates move when people in places with lower productivity and interest rates invest in places with higher productivity and interest rates, driving exchange rates up due to shipping and adjustment costs.

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(Just why marginal products of capital are low isn’t relevant for today. I think it’s policy-induced sclerosis. It could also be Bob Gordon’s theory that we’ve run out of good ideas, or the view that modern technology just doesn’t need much capital. We had a discussion at the conference over the fact that corporate profits are high, but what matters in my model is the marginal product of new capital, marginal q, and the fact that investment is low, new business formation is low, and expected returns are low, are all consistent with that view, even if existing businesses are making money.)

**Why is growth so low?**

In Pierre-Olivier’s world, it’s all the zero lower bound. “Away from the ZLB, …: A shock that creates an asset shortage … results in an endogenous reduction in real interest rates. “ and output gaps are all zero. “At the ZLB,…Global output endogenously declines…” instead. That output fall is all “gap,” and none “potential.”

In my world, low real interest rates mean low growth rates, and it’s “potential” not “demand.” In my world, the ZLB isn’t a big, long-run problem.

**Is the ZLB a problem?**

If we need a negative real rate, why does inflation not solve the problem? The model turns off inflation, first by assumption, then using the standard (and in my view fragile) new-Keynesian tricks to rule out the high-inflation equilibrium. In my world, inflation can adjust, and the zero bound is therefore not a first-order problem.

Here are inflation and interest rates. The US has had about two percent inflation, and negative two percent real rates since the recession ended. So, negative two is not enough?

I have a more general frustration. Zero bound models claim that a negative “natural” real rate is the driving cause of all our problems, the zero bound is the single relevant wedge or distorted price in the entire global economy — more than taxes, regulations, wage restrictions, social programs, or any other obvious wedge we see looking out the window.

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Yet there is no independent quantitative measurement of this negative natural rate, beyond fitting the same models and naming the residuals.

The graph also shows that the behavior of inflation is identical in and out of the zero bound. *In the model* the ZLB is indeed a big “tipping point.” Dynamics are all different at the ZLB. In the data, as in my world, CPI and bond prices post ZLB look just like they did before. You’ll see this in many of my graphs.

Here is the exchange rate and the trade balance. You can see the big blips in fall 2008, and similar blips in many of my graphs. I do think that many parts of this model — “Financial Frictions,” a “flight to quality”, a huge demand for US Treasuries — are important to understand the crisis period.

But that’s over. This paper is about now, and it’s hard to see a big difference. The exchange rate, which we will talk about in a minute, also is no more volatile now than it was out of the zero-bound regime.

The paper offers one piece of evidence for different behavior at the zero bound — “persistent increases in output gaps” shown in the next figure.

First, in my world, this is reverse causality; low growth implies low interest rates.

Second, the model says that output should become more volatile and more correlated across countries at the zero bound “tipping point”. Again, outside the immediate crisis period, it’s hard to see anything.

More generally, is our disappointing output all “gap” from unchanged potential? Yes, in the model. But even measured gaps are falling — and it’s “potential” that’s doing the adjusting not actual output. Low potential growth is our problem, not gaps.

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Here is unemployment. It’s 8 years since the financial crisis, and 7 since the trough. Just how long can we keep saying “insufficient demand?”

**Exchange rates**

This is an international paper, so what about exchange rates? Pierre-Olivier’s model is about indeterminacies, not standard supply and demand. “the … model has a critical degree of indeterminacy when at the ZLB”

The equations (simplified) on the bottom left of the slide give a simple way to understand this proposition. An interest rate peg, such as zero, can nail down expected inflation. But unexpected inflation can then be anything — these are the multiple equilibria. In a frictionless model unexpected inflation also means unexpected exchange rate changes. With nominal rigidities, indeterminacies result in real fluctuations too.

So the model predicts this extra multiple-equilibrium volatility in exchange rates, output, and trade balances at the bound. The data don’t show any increase in volatility.

The indeterminacy “creates fertile grounds for … beggar-thy-neighbor devaluations achieved by direct interventions in exchange rate markets…” I was puzzled by this, reading the paper. If interventions can “change” exchange rates why don’t they “determine” rates? Pierre Olivier explained in the talk that this is somewhat “outside the model,” which makes sense.

“If agents coordinate” is, I think, the clue. In zero-bound multiple-equilibrium models, the central bank is reduced to talk, trying to “coordinate expectations” one way or another because it can’t actually do anything. There is lots of talk therapy or “forward guidance” recommendation in related policy advice. It’s like a dance DJ, calling, “put your left foot out, now put your right foot out,” to get us all to dance the same way.

In my world, the value of government debt is the present value of primary surpluses that will retire that debt. Then inflation and exchange rate innovations are determined, by innovations to the present value of fiscal surpluses. (My world includes price stickiness, but I’m keeping it simple for a discussion.) Exchange rates are volatile, just as stock prices are volatile, and hard for pundits to explain ex-post. That volatility however has little to do with the zero bound, as in the data.
We have some agreement here. The section in the paper on “helicopter drops” points out, as in my equations, that if you can increase B without increasing G-T, you could get some inflation going. If you want to, which I don’t.

Safe asset shortages

Next, “safe asset shortages.” The modeling problem is that normal investors are always happy to take a little more risk for a little more return. So, the paper adds add infinitely risk averse agents.

The result: Normally, we think of it as a good thing that the US can issue at lower rates than other countries. But with “safe asset scarcity”, that rate can get pushed to zero, where all the bad things are supposed to happen.

I’m skeptical, both of facts and theory requiring the sudden appearance of infinitely risk averse agents.

Safe asset shortage? 100-200% debt to GDP ratios, rapidly growing, are not enough? Plus government guaranteed mortgage-backed securities, repos, bank deposits, and so on?

A “safe asset shortage” means a high risk premium for risky assets, because few people are willing to hold them. (Low prices, high expected returns over risk free rates, and “risk premium” are all synonyms.) The paper provides this evidence in this picture.

The claim is astounding — that risk premiums as high as they were in the depths of the crisis.
Every other estimate goes the other way. For example, here is the S&P500 price/earnings ratio, which reliably forecasts returns. It took a big dip in the crisis. But now it’s right back, and high by historical norms. Here are house prices. These are low, reflecting high risk premiums?

The same policy and pundit world is loudly complaining about “reach for yield,” “Fed-inspired bubbles” in stocks and houses. Yes, that is completely inconsistent with the same world complaining about “safe asset shortage.” Well, maybe the pundit world isn’t right about everything.

Our worlds differ sharply on policy implications. In my world, central banks have done their jobs, killing inflation and bringing about Milton Friedman’s optimal quantity of money. They can’t raise productivity, that’s the job of “structural reform.” They should stop trying to fix things beyond their control.

Pierre-Olivier’s view is an explicit invitation to international macroeconomic dirigisme, exchange rate interventions, deliberate fiscal inflation, “managing expectations,” and “managing” capital flows — denying your and my right to buy things abroad. You know which view is popular in central banks and international institutions!
To summarize, I have a very simple view of today’s world. Low productivity drives low interest rates and low growth. Nominal interest pegs, including zero, are determinate and stable. Prices are not infinitely sticky so inflation can soak up slow moves in real rates. Exchange rates are volatile because they respond to the present value of fiscal surpluses, as well as to standard real interest differentials.

To be clear, I am sympathetic to the basic ingredients — financial frictions, a flight to US treasury debt, a binding zero bound, inadequate “demand” — in the fall of 2008. But it’s not groundhog day, forever 2008. At some point, financial crisis theory must give way to not-enough-growth theory.

As I promised at the start, this is a great paper. Three of the best minds in international macroeconomics have found ways to formalize all the blather we hear from the international policy community, “global imbalances,” “savings gluts,” “managing expectations,” “flight to quality,” “safe asset shortage,” “zlb contagion” and so on. As an economist, I am awed by their ability to write down a coherent model that captures these (to me) goofy ideas.

This being a policy conference, not a theory conference, I won’t go over the clever ways they formalized these ideas. But to give you an artistic impression, here is a figure outlining the simple version of the model.

To be specific, I start with the stochastic growth model, with adjustment and trade costs. I add fiscal theory of the price level, some nominal price stickiness, and interest rate targets. Asset prices demand endogenous time-varying risk aversion. I add more frictions lightly, when pushed kicking and screaming by the data to do so — which seems necessary for 2008, but not now.

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And here is a later one.

OK, jokes aside, it is a great paper. This is why math and modeling is important in economics. Without it, we don’t know what the ideas mean.

To our media guests: you may think that economics works like regular science, where the equations come first, then tests in the data, then popular exposition with colorful language (“black holes!”) then, maybe policy. No, we work backwards: First central banks feel their way to the policies they want to try, then colorful words like “global imbalances” to describe their intuition about why, then theorists come up with equations that maybe make sense of the words, and finally we start testing theories in data. That second to last step is vital. Without it, we have no idea whether the colorful language makes any sense at all. Math in economics is vital.

Only with an explicit model can we begin to have a discussion. This model is great because I can read each ingredient — unpledgeable capital, taxes that fall only on the young, infinitely risk averse agents — as necessary, not just sufficient to generate the policy blather. So I read this paper as a a brilliant negative result. It shows just how extreme the implicit assumptions are behind the policy blather. It shows just how empty the idea is, that our policy-makers understand any of this stuff at a scientific, empirically-tested level, and should take strong actions to offset the supposed problems these buzzwords allude to.

So, bottom line, you have in front of you two utterly different worldviews. Each set of models is reasonably internally consistent. The question is, which model applies to which planet?