The Simple Analytics of Invisible Bond Vigilantes

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Although warnings about an imminent attack on the United States by bond vigilantes have proved wrong again and again, they haven't stopped. Declarations that any day now we might turn into Greece keep coming – and to be fair, not only from the Beltway deficit peacocks. And it is indeed conceivable that international investors might at some point become less sanguine about U.S. debt.

But then what? We know what a loss of faith in Greek debt looked like: interest rates soared, with negative consequences for the Greek economy. But Greece didn't have its own currency, and therefore didn't have its own monetary policy or its own exchange rate. We do. So what would an attack by invisible bond vigilantes look like for a country like the United States (or for that matter the UK)?

As far as I know, none of the people issuing dire warnings have actually tried to write down a model of what an attack would look like. And there is, I suspect, a reason: it's quite hard to produce a model in which bond vigilantes have major negative effects on a country that retains a floating exchange rate. In a simple Mundell-Fleming model (M-F is basically IS-LM applied to the open economy), an attack by bond vigilantes has very different effects on a country with a fixed exchange rate (or a shared currency) versus a country with a floating exchange rate. In the latter case, in fact, loss of confidence is *expansionary*.

Let me sketch this out with a minimal Mundell-Fleming approach.

Start with the demand for domestically produced goods and services, which we can take to depend on interest rates and the exchange rate (which affects competitiveness). A simple linearized version, with constant term suppressed, would look like this:

(1) $y = -\alpha i + \beta e$

where *y* is real GDP, *I* is the interest rate, and *e* is the log of the exchange rate expressed as the price of foreign currency (which means that a rise equals a depreciation, which is expansionary because it encourages net exports).

Some readers may want to know why I don't write the real exchange rate instead of the nominal rate, and the real interest rate as well. The short answer is that yes, inflation and expected inflation could matter, but I don't think they do in this case, so that I suppress them for the sake of simplicity.

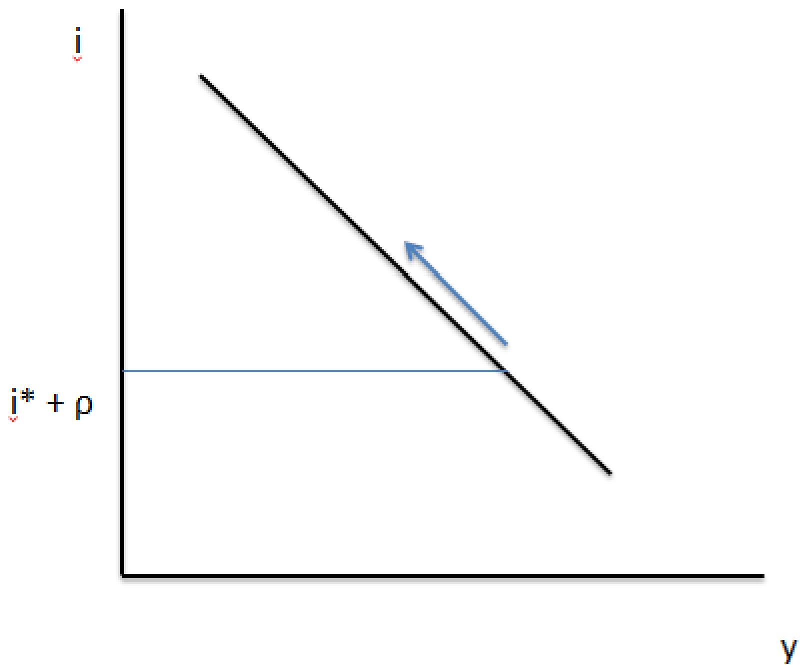
Now, suppose that you have a fixed exchange rate, or in the most extreme case, use someone else's currency. Then *e* is fixed, and *i* is determined by the willingness of international investors to hold domestic securities. Let *i** be the interest rate on foreign securities that are perceived as safe – say, Bunds. Then your domestic interest rate is

(2) $i = i^* + \rho$

where ρ is a risk premium.

This gives us a picture like Figure 1. In this picture, an attack by the bond vigilantes is indeed a bad thing. As indicted by the arrow, it drives up interest rates and leads to economic contraction. And I suspect that something like this is what, say, Bowles and Simpson imagine might happen to America.

Figure 1



But America doesn't look like that: we have our own currency and a floating exchange rate. How does this change things?

Well, we now set our own interest rate via Fed policy, which we might describe with a Taylor rule:

(3) $i = \tau y$

(In case you're wondering, I'm letting the policy rate respond to the output gap; again, inflation is on one side and I'm suppressing constant terms).

At the same time, there will still be interest arbitrage – or better yet, expected return arbitrage – across borders. Using a fairly standard formulation, this might look like the following:

(4) $i = i^* + \delta(\bar{e} - e) + \rho$

where the second term on the right hand side is expected depreciation, reflecting convergence to some long-run "normal" value of the exchange rate. This can be rearranged to express the exchange rate as a function of both the domestic interest rate and the risk premium:

(5) $e = \bar{e} + \frac{i^* - i + \rho}{\delta}$

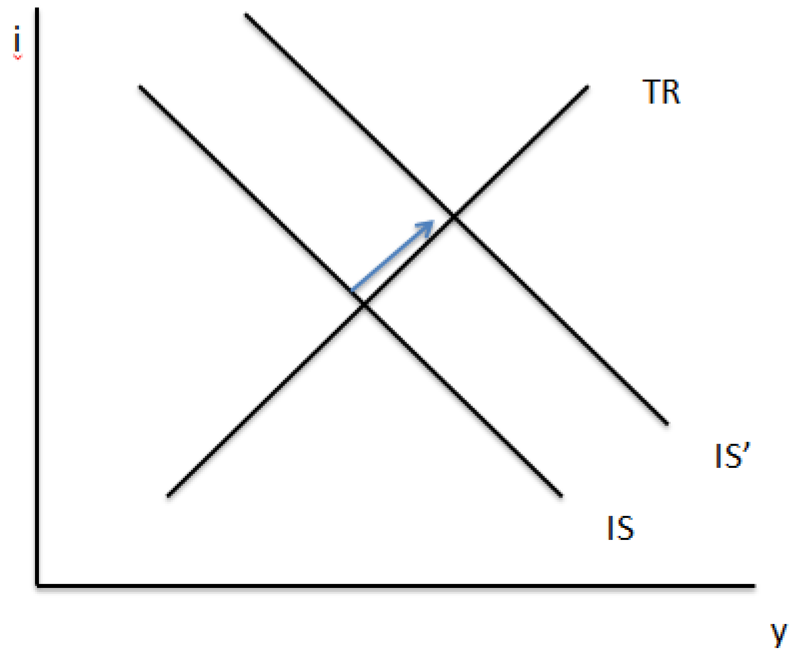
Now we can substitute this back into (1) to get the open-economy IS curve:

(6) $y = -\alpha i + \beta \bar{e} + \left(\frac{\beta}{\delta}\right)(i^* - i + \rho)$

Notice that the interest rate affects aggregate demand through two channels: by raising domestic demand, and by depreciating the exchange rate, increasing net exports.

We can represent the story with Figure 2, which shows the open-economy IS curve and the Taylor rule, with the exchange rate implicit in the background.

Figure 2



Now ask, what happens if there's a loss of confidence, causing the risk premium ρ to rise? The answer is that the currency depreciates for any given domestic interest rate, increasing demand and shifting the IS curve out. That is, the effect on the economy is *expansionary*.

Think about it this way: with the Fed setting interest rates, any loss of confidence in U.S. bonds would cause not a rise in rates but a fall in the dollar – and a fall in the dollar would be a *good thing*, helping make US industry more competitive.

You can elaborate on all this, in particular by making a distinction between long-term and short-term interest rates. But it's really hard to create a scenario in which the bond vigilantes actually cause a

contraction rather than an expansion when they attack. Things will be different if you have large debt denominated in foreign currency – but we don't.

So what are the fiscal fear types thinking? Basically, they aren't. But to the extent that they do have a model, it's Figure 1 – they're imagining that American macroeconomics are just like those of a country on a fixed exchange rate with no independent monetary policy.

If there's something more going on here, I'd like to hear about it.