David Backus <david.backus@gmail.com>

Identifying Taylor rules

Tao Zha <zmail@tzha.net>   Tue, Oct 15, 2013 at 9:11 AM
To: David Backus <dbackus@stern.nyu.edu>

Hi Dave:

Sorry to take so long to have some comments back to you, mainly because I have been thinking hard on your fascinating paper. In particular, I've been trying to see how to tie a forward-looking model to a VAR so that economists can use observed variables to back out shocks. I think I have something for us to think about.

Section 2.3 seems very illustrative for me. Even with the assumption of independence of s_{1t} and s_{2t}, economists still need to know s_{1t} before they can use it as an instrument to identify s_{2t}. So as you forcibly point out, this does not work either.

I think one of the problems is that if we focus on one equation and try to estimate it by OLS (or even IV), we encounter the identification problem you mention. But if one is willing to estimate a whole system, identification can be achieved, at least locally. Throughout your paper, you seem to allude to this possibility. I've worked out a concrete example and I attach slides here for you. The phenomenon in my slides has rarely been recognized in the literature, but I think your paper is getting to that point from a different perspective.

I assume that when you (and others) talk about identification, you mean local identification (this is not so clear from your paper, however). There is a distinction between local identification and global identification. I discuss this in my comment slides as well.

Hope this comment is of some use to your thinking.

Tao

On Aug 2, 2013, at 7:25 AM, David Backus wrote:

Hi Tao,

I've enjoyed working through your papers with Chris, some of which go
way back but are new to me, and thought I'd respond by sharing some of
what we figured out. I still have some ways to go on the VAR lit, but
I think we've figured out identification for simple structural models.
One of the points of similarly is the connection between identifying
the shock and the rule, which seems to show up in your work, too.
Thoughts, of course, welcome. Hope to see you again soon.

Cheers,
Dave

Link: http://pages.stern.nyu.edu/~dbackus/Identification/ms/BCZ_trident_latest.pdf