Response to the second referee report

First of all: Thanks for a useful and detailed report.

Below, I write "OK" whenever I shall make the suggested correction.

Response to "General comments"

Though the paper is meant as a first step on the ladder linking theory models and the CVAR, starting with the simplest models first, I agree that the inevitable limitations should be reflected on. I shall try to make it more clear on this point.

Response to "Detailed comments"

p. 2. §3 line 5: OK.

p. 2. §5 line 6: OK.

p. 2. §5 last sentence: First, yes it is natural for the static theory models I consider. But it is not because they are static, but because the order of integration or persistence regards the exogenous variables (which are outside the theory model, as argued later). "...the type of theory model..." should cover the static models with exogenous variables, and the simple dynamic ones (also with exogenous variables) in section 4.3. As argued in the response to "p. 18 eq (58)" below the models in that particular section (4.3) *are* dynamic, as opposed to the referee's claim in that comment, as well as in this comment (that all models are static throughout the paper). But I shall try to make it more clear though.

I was a little in doubt whether I should include something about theories for which the order of integration is important already in the introduction. But later I reflect upon this. I have to think about this.

p. 3 §2 of section 2, line 2: OK.

p. 4 last line: OK. It is the second interpretation I had in mind. I shall clarify this.

p. 5 §1: I am not sure that I understand completely (also regarding spurious regression?). However, my point in this section is that typically in applications the estimated roots suggest that the roots are close to 1 and at the same time we have a limited number of observations. In such cases it may be useful to use I(1) asymptotics (Johansens book, say) to learn from the data. But of course it depends on the particular case, and in particular the magnitude of the roots relative to the number of observations (and probably other aspects as well). This is also why I do not give any concrete numbers. There is a simple simulation example in Johansen (2006) however. I believe it is a matter of judgement in the particular case.

p. 6 first full sentence: Just before this sentence I mention that for this type of theory model (for which stationarity is implied) we are forced to give up some part of the theory model - namely the stationarity assumption. So, I am not claiming that "...a "structural equation", which assumes an I(0) "world" is unaffected by finding that I(1)-ness...". But sometimes for this type of model we can still learn about other parts of the theory model though stationarity is rejected.

Finally, I think it is an open question whether one should model inflation as I(1) on the one hand, or as I(0) with shift dummies (level shifts) on the other. One must recall the empirical evidence of I(2) of nominal prices (equivalently I(1) inflation). See for example Juselius, 2006. Often, by modelling inflation as I(1), allows a cointegration analysis, i.e. allows a way to analyze how inflation is related to other persistent variables. One must also recall, that inflation (or other economic variables) as I(1) should be viewed as a statistical approximation to obtain reliable inference given the sample at hand. The assumption of I(1) (a root exactly at 1) is not realistic over very long periods (see e.g. Hendry, 1995, p. 809 section A6.9.3) but it provides a useful approximation for the data at hand. In a similar manner a simple linear regression between two variables can be viewed as an approximation, meaning that for some range of data variation it is not consistent with reality. However, as long as the relationship is roughly linear within the realistic range of data variation - why not use the linear model to test hypotheses on the slope? This is easier and facilitates the statistical work. But of course the model is "wrong" strictly speaking. Models are always approximations.

p. 6 §2: OK.

p. 9 eq (30): The example should be consistent with a perfect competition demand - and supply model, yes. However, the example should also be representative for many other models (e.g. wage - and price setting models of imperfect labour market competition). Hence, I think (30) is more representative and general. The exact interpretation is not so important, rather it is the general simple algebraic structure of such models that should be represented. The min-condition referred to is rather restrictive as far as I understand (see. e.g. Hendry 1995 Appendix A6). Furthermore, I am not sure that simply due to the fact that one is looking at a perfect competition (theory) model, one can argue for a particular adjustment mechanism. Neoclassical model like the competitive one are viewed as models for the long run, I believe. They are silent about the market adjustment mechanism and concern only equilibria.

I shall try to add a clarifying comment somewhere though.

p. 11 §3: As alluded to above in "**p. 5 §1",** the "near unit root" is a relative concept here. It is not as precise as that defined in Banerjee, Dolado, Galbraith, and Hendry's "Cointegration, Error Correction and the Econometric Analysis of Non-stationary Series" (1993).

p. 12-14: I do not agree as far as I understand. I do not believe that just because the equilibrium error is a stationary process I should shorten this section. The emphasis is on how the "stationary directions" of the process can be related to the economic model concepts.

p. 14, section 4.2 line2-3: OK.

p. 18 eq (58): I do not agree. The equation is static viewed in isolation yes. But once the expectation equation is regarded and inserted into (58), the theory model becomes dynamic (although admittedly overly simple). This is actually what I reflect on in the beginning of that section (i.e. how adaptive expectation make otherwise static relationships become dynamic).

p. 18 eq (58): I agree that this section is relatively limited in scope. The purpose is however to take simple examples in order to link economic concepts to particular parameters of the CVAR. The theory models are obviously very simple, and should, at the most, be viewed as skeleton structures that can be generalized.

I shall try to make this section shorter.

References

See the references in the paper.