

Should we trust the empirical evidence  
from present value models of the current account  
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This paper looks at the present value model of the current account. The authors show that persistence in observed data can introduce a lot of noise in the estimated optimal series. Further they show through simulations that the standard Wald test of the model has poor properties. This leads the authors to conclude that generated optimal series are noisy, and comparisons between the actual and the generated current account series are not statistically robust.

The analysis is carried out by estimating VARs for real income growth  $\Delta Y_t$  and current account  $CA_t$  for five different countries. VARs are fitted to  $X_t$  which are demeaned versions of  $(\Delta Y_t, CA_t)'$ . In the case of one lag:

$$X_t = CX_{t-1} + u_t.$$

The present value model gives the optimal current account as  $KX_t$  where

$$K = -\frac{AC}{1+r}M^{-1}, \quad M = \left[ I - \frac{C}{1+r} \right],$$

and  $r$  is a constant discount rate and  $A = (1, 0)$ . The actual current account is close to the optimal current account if  $K = (0, 1)$ .

The hypothesis  $K = (0, 1)$  is tested with a Wald test. This Wald test is constructed using the  $\delta$ -method resulting in a variance-covariance matrix  $JVJ'$ , where  $J$  is the Jacobian, and  $V$  presumably the variance-covariance matrix of  $C$ . The authors point out that if  $M$  is close to being singular then  $J$  is large.

A more fundamental issue, however, is the implicit assumption that  $X_t$  is stationary, in which case  $C$  is asymptotically normal. It is recognised in the paper that  $CA$  is persistent, but it seems to be assumed that it is stationary. (footnote 10).

In the case of Belgium, where the lag length is 1, Table 1 shows that the matrix  $C$  has a root of 1.01, so beyond a unit root. Constructing  $X_t$  from your data base and applying Johansen's rank test I found clear evidence cointegrating rank of 1 and therefore non-stationarity. Thus, any inference assuming  $X_t$  is stationary is bound to be misleading. The same could very well be the case with the other countries.

It seems to me that if the assumption that  $X_t$  is stationary is maintained it should be tested. In the case that assumption is rejected as for the case of Belgium, the non-stationarity should be taken into account in the analysis. The work of Johansen and Swensen (*Ectr J*, 2004) could possibly be used.

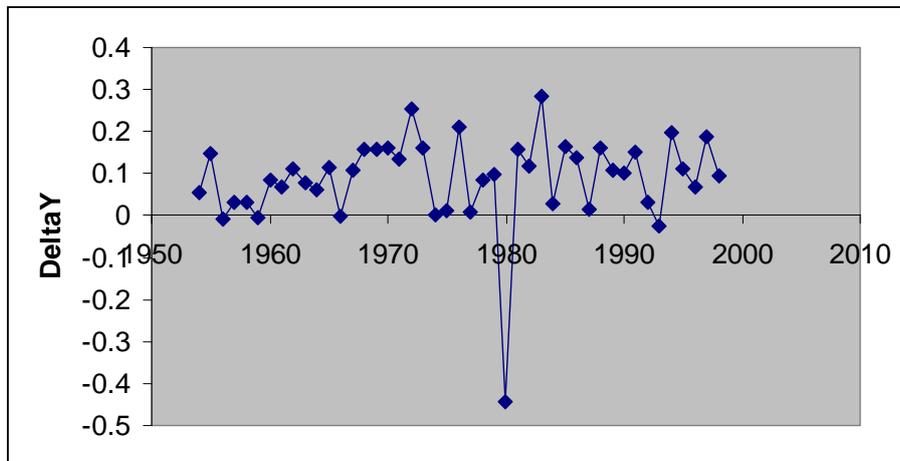


Figure 1:

It would be useful to plot the data, explain the units of the graphs, and check the specification of the VAR models in general.

The analysis involves income in non-log form. Is that intended? A stylised model for income is that  $\Delta \log(Y_t) = 2.5\% + \varepsilon_t$ . This would result in  $Y_t$  growing along an exponential path - this may of course not be that clearly visible in a sample of  $\Delta Y_t$ .

*Minor Comments*

For the case of Belgium, I constructed a plot of  $\Delta Y_t$ . This has a large outlier in 1980. Two points: First, ignoring this would only influence the estimates slightly, but since the Wald test story is about small estimation errors of  $C$  this may prove important. Secondly, a test for normality of the residuals of the VAR would probably be rejected. In that case, why is it reasonable to assume normality in the simulations?

Could you clarify which distribution you take expectation with respect to in equation (1) and on page 7 line 8. Is it the distribution of  $X_t$ ?

For readability replace the symbol  $CA$  with a single letter symbol different from  $C$  and  $A$  which have other meaning.