

## **Reply to the points raised by Referee 2:**

1. While the focus of the paper is on the long run macroeconomic relations in the world economy, we also provide some theoretical developments of the model. These include the modification of the GVAR in order to test for the long run PPP relation across the various countries. In particular, the solution of the GVAR model containing the real effective exchange rate is not readily apparent and its derivation is needed for the readers to understand and replicate our methodology. These details are also required in order to obtain the bootstrapped critical values of the test of the over-identifying restrictions imposed on the long-run relations. (as set out in the Appendix). Moreover, although true that the impulse responses have been discussed in previous GVAR papers, it is the first time that the persistence profiles and the variance decomposition have been addressed within the context of a GVAR model.

2. As mentioned in Section 5.5, we find that the long-run restricted generalized impulse response functions (GIRFs) are generally more in line with our theoretical priors as compared to the unrestricted ones in DdPS (2007), which reinforces the use of the long run theory in the future development of the GVAR. Furthermore, from the summary following the discussion of the contemporaneous effects of foreign variables on their domestic counterparts, the GIRFs and the variance decompositions it is clear that overall the results show that financial shocks (equity and bond prices) tend to be transmitted much faster than shocks to real output and/or inflation. This point is now highlighted further in the paper.

3. In our framework it is relatively easy to jointly test the validity of all or a sub-set of the long run relations. But such joint tests are likely to lack power, particularly considering the limited available time series data. Furthermore, from the rejection of the joint hypothesis it would not be possible to identify the particular relationship that might have caused the rejection. Our approach allows us to consider the validity of the individual long run relations, whilst taking account of the complicated dynamics of interactions that exist in the world economy.

4. We do not believe the weakness of the PPP result to be related with the non-tradables in the Consumer Price Index of the data employed. In fact we find more evidence of relative PPP compared to other studies. Furthermore, adopting the wholesale price would cause a problem for the Fisher equation. Some sort of link would be needed between the wholesale price and the CPI. More specifically, for the joint validity of the PPP and the Fisher equation we would also need cointegration between CPI and wholesale prices. But if these price series are cointegrated, the PPP hypothesis formulated in terms of wholesale prices would be equivalent to a formulation in terms of CPI, considering the long run nature of the PPP.