

New Keynesian Open Economy Models versus The Six Major Puzzles in International Macroeconomics

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Abstract

In this paper, we analyze the quantitative features of a New Keynesian Open Economy Model as an example of its class. We focus especially on six puzzles in international macroeconomics explained by Obstfeld and Rogoff (2000*b*), i.e., (1) the home bias in trade puzzle, (2) the high investment-savings correlation, (3) the home bias in equity portfolio puzzle, (4) the low international consumption correlation, (5) the purchasing power parity puzzle and (6) the exchange rate disconnect puzzle.

We find that the *small open economy* model by Galí and Monacelli (2002) can easily explain puzzles (1) and (3) with the help of a “degree of openness” parameter, which can be seen as closely related to a home bias in preferences parameter as mentioned in Obstfeld and Rogoff (2000*b*). The results for the investment-savings puzzle, addressed according to Obstfeld and Rogoff through the relation between the current account and the real interest rate, depend on the monetary policy assumed for the small open economy, with only domestic inflation targeting being able to reproduce the negative relation between net exports and the real interest rate in the basic calibration. Apart from the exchange rate persistence the model cannot reproduce puzzles (4) to (6).

The introduction of trade costs leads to an improvement for all the puzzles. While puzzles (1) and (3) can now be solved with smaller and therefore more reasonable parameter values and the result of puzzle (2) still depends on the monetary policy chosen, it is now possible to address also the last three puzzles. For consumption correlation there are parameter values which result in the numbers seen in the data, though one has to look out for them quite a long time. The high exchange rate volatility of the data can be achieved by a combination of high risk aversion, large trade costs, a low import share on GDP and, finally, a international correlation of productivity not more than about 50 percent. The “disconnectedness” of real exchange rate volatility, i.e., the fact that real exchange rates are by far more volatile than any other macroeconomic aggregate – one part of the “disconnect” puzzle – can also be solved.

Nonetheless, the model cannot fully explain the second dimension of the disconnect puzzle, i.e., the low correlation between the real exchange rate and all other macroeconomic aggregates. And the parameter values necessary to solve the consumption correlation puzzle and the exchange rate volatility are not standard.