Technology Shocks and Employment in Open Economies

by Juha Tervala

Invited Reader Comment by John Fender, University of Birmingham

The paper seeks to explain how a positive technology shock can lead to a temporary fall in employment. This is done in a fairly standard two-country New Keynesian model with staggered price setting. A distinction is drawn between the effects of producer currency pricing and of local currency pricing. The basic idea seems to be that a positive technology shock appreciates the exchange rate, and this reduces output and employment, but the magnitude of the effect, and the time path of the economy following the shock, depends on the assumption about pricing (as well as on parameter values). The analysis seems to be done reasonably competently. I would have the following comments:

(1) It must be the case that (provided that production is efficient) a positive technology shock either raises output or reduces employment (or both). The problem is one of explaining how much of the shock is translated into an increase in output as opposed to a fall in employment.

(2) It might be thought that in an open economy, a positive technology shock is less likely to result in a fall in employment as the openness of the economy provides another channel whereby increased output can be disposed of (i.e., to foreigners). After an improvement in technology producers might be expected to cut prices, boosting sales to foreigners.

(3) If prices are sticky, then what happens in (2) may not take place. Only over time as prices are adjusted downwards in response to technology shocks will this mechanism come into play.

(4) It might be argued that price stickiness in the face of technology shocks is not too plausible an assumption. When producers obtain a new or improved technology, might they not be expected to revise the prices they charge?

(5) Apparently the model is solved by log-linearisation about a symmetric steady state but we are not given any of the resulting equations. Can they be made available for interested readers (perhaps on a website)? (And they should certainly be available to referees!) None of the details of how the specific results are derived are given either.

Some more specific comments follow:

p. 12. Why does the exchange rate appreciate in response to the shock? This is quite crucial to the author's results, but no explanation seems to be given.

p. 13, lines 1 - 3. 'When domestic firms price their exports in foreign currency, an exchange rate appreciation reduces their profits measured in terms of domestic currency'. But the appreciation is a consequence of an increase in productivity, which should raise firms' profits. What is the overall effect on firms' profits?

l. 11. 'The home country runs a current account deficit'. This is quite surprising. The technology improvement should result in increased export sales of those firms that do reduce their prices, which should tend to improve the current account.

Why does a technology shock not have an impact on labour supply in the long run in a closed economy? The technology shock means that agents are better off inasmuch as they can produce more goods using the same amount of labour, so there should be a positive long run wealth effect which should reduce labour supply.

pp. 16 – 7. Should 'present prices' (which appears a number of times) be 'pre-set prices'?

p. 17. The first sentence of footnote 5 is repeated!

pp. 17 – 18. It is rather curious that a number of papers in the literature are discussed here. Might it not be better to discuss these papers earlier on, in the part of the introduction devoted to the literature review?

p. 18. A longer concluding section is really required. One would expect such a section to summarise the main results, emphasise what the paper's main contributions are, discuss possible objections to the analysis and make suggestions for further research.