

Comments on 'Technology Shocks and Employment in Open Economies'

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The paper examines the impact of technology shocks over the short run employment level, considering an open economy. This study relies on a benchmark open economy macroeconomic model that is modified in two ways: first, a simple autoregressive process will characterize the dynamics of the technology variable, and thus technology shocks are introduced; second, a staggered price setting mechanism is also included.

As the author stresses, the result that a positive technology shock leads to a temporary decline in employment is known from the literature. Basically, the process goes as follows: the shock produces a boost in productivity that is not followed in the same extent by an increase in output, leading therefore to a decline in the level of employment. In the long term, output will permanently increase and the initial level of employment will be restored, because after the initial response there is a gradual increase in output and employment.

Under a sticky price macro model, the mechanism described above is straightforward to explain: the improvement in technology will allow firms to lower prices (because marginal costs decline), but given the sticky price environment only a given percentage of firms will in fact change prices, in the short run. The consequent aggregate demand increase (as a result of the fall in the price level), will be lower than the one needed to completely accommodate the improvement in technological conditions (because prices do not fall as much as they would under a completely flexible price adjustment setup). Therefore, employment will decline.

To the price sluggishness effect, this paper adds a second consequence of the technology disturbance over short run employment. Considering an open economy, the author underlines the relevance of the expenditure-switching effect of a change in the nominal interest rate. Since an improvement in technology leads to an appreciation of the exchange rate, it will imply a higher relative price of domestic goods, which in turn implies a shift in demand from domestic to foreign goods. The intuitive consequence of this process is an additional decline in domestic employment in the short run. The immediate conclusion is that the fall in employment triggered by an enhancement in technological conditions is sharper and more persistent in open economies than in closed ones.

The model that the author develops allows for a clear perception of the referred effects, namely when the analytical system is calibrated and

a numerical simulation allows to graphically illustrate the effects of the technology shock.

My overall opinion is that the paper is well structured, the author reveals a solid knowledge about the existing related literature and he is capable of presenting a comprehensive study of the impact of technology shocks over employment in an economy with external trade relations. It is worthwhile to mention that the introduction allows for a clear perception of the goals the paper intends to achieve, the model in section 2 is able to capture the essential mechanics of an open economy with sticky prices and subject to stochastic disturbances, section 3 furnishes a complete and exhaustive discussion of the framework's implications, namely in what relates the two fundamental consequences over short run employment, and also in what concerns other aspects that the model apparently overlooks, namely the role of monetary policy. In the conclusion, it is relevant the inclusion of ideas for extending the proposed model.

The only weakness I can point out is the difficulty on extracting general results of the analytical framework. It would add value to the paper if the author could, in the end of section 2, present some general propositions on the effect of the technology shock over short run employment. I realize that this is not an easy task under the proposed setup, but the paper loses some of its power when all its meaningful results are just addressed through a numerical example.

Some minor details:

- Page 2, first line: change to 'In a seminal paper, Gali (1999) examines the effects of technology shocks on output and employment (hours worked) using a structural VAR approach.';
- Page 5, line 7 of point 2.1: replace '... are ...' by '... is ...';
- Page 7, first line of text: replace 'Equation' by 'Equations';
- Page 8, line 2 after eq. (15): replace 'Equations show (14) and (15)' by 'Equations (14) and (15) show';
- Page 9, last line: replace 'nominal exchanges...' by 'nominal exchange...';
- Page 12, line 17 of section 3.2: replace 'In the short, however, ...' by 'In the short run, however,...';
- Page 14, paragraph 4, line 6: replace 'county' by 'country';
- Page 16, last paragraph, line 3: replace 'shocks' by 'shock';

- Page 19, paragraph 2, line 2: replace 'sold' by 'solid'.

• **Article rate (1 to 5): 5**