

The 'Backus-Smith' puzzle, non-tradable output and  
international business cycles by S. Moon

Discussion- Nicolas Coeurdacier - SciencesPo & CEPR

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## Consumption-real exchange rate anomaly

Two-country  $H, F$ . Complete markets. Separability between leisure and consumption. Efficient allocation requires:

$$\left(\frac{C_{H,t}}{C_{F,t}}\right)^\sigma = \frac{\epsilon_t P_{F,t}}{P_{H,t}} = RER_t$$

Fails in the data. Low correlation between relative consumption and real exchange rate. If anything Home real exchange rate appreciated when Home (relative) consumption is high.

‘Backus-Smith’ puzzle (see also Kollmann 1995)

## Solutions I - Benigno and Thoenissen, 2008

Non-traded good and incomplete markets & Harrod-Balassa-Samuelson effect

Increase in productivity in Home traded sector generate an appreciation of Home real exchange rate (Balassa Samuelson effect), despite some depreciation of Home terms-of trade.

If wealth effects strong enough consumption also rises in the Home country.

Home non-traded *and* elasticity of substitution between traded not too close to unity is essential.

Otherwise terms of trade usually provide enough risk sharing and incomplete markets do not matter much (Cole and Obstfeld, 1991)

## **Solutions II - Corsetti, Dedole and Leduc, 2007**

Move away from Cole and Obstfeld. High or very low elasticity of substitution between Home and Foreign traded.

Incomplete markets matter: strong wealth effects

Increase in productivity in Home traded generate an increase in Home consumption (wealth effect).

Large increase demand for Home traded generate an appreciation of Home terms of trade and Home real exchange rate (despite supply effects).

## **Solutions III - Ghironi and Melitz, 2005**

Heterogeneous firms. Endogenous traded and non-traded sector. More varieties supplied.

Home productivity goes up: entry of firms in traded sector and non-traded sector.

Endogenous HBS: wages go up and non-traded sector more expensive. Prices of traded not-adjusted for varieties also go up = Home RER appreciation

If real exchange rate not adjusted for number of varieties, can solve BS puzzle. Welfare based-real exchange rate depreciates.

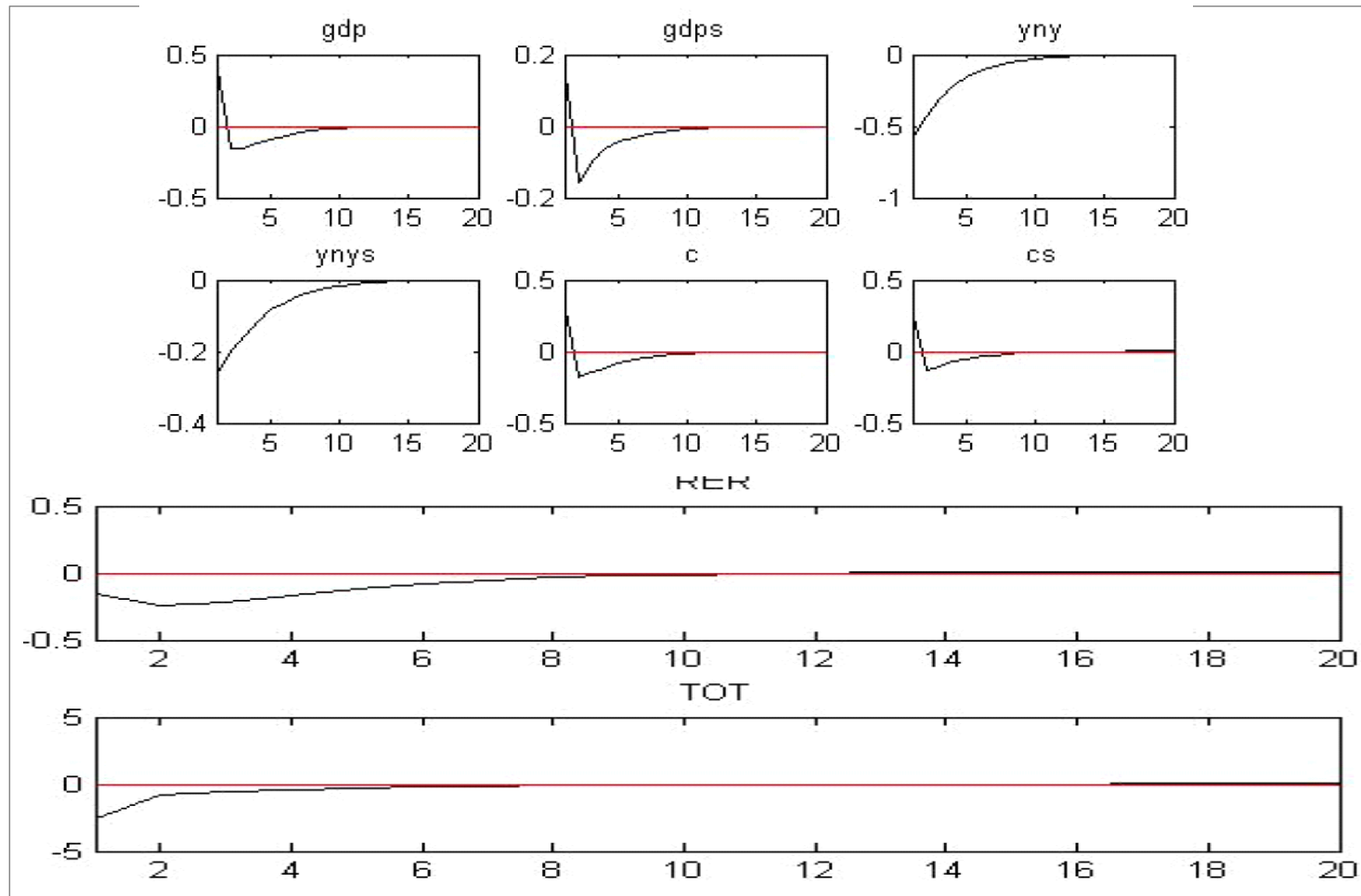
## **This paper**

- Incomplete markets [wealth effects]
- Non-tradable goods [exogenous Harrod-Balassa-Samuelson]
- Endogenous number of traded varieties [=intermediate goods] with fixed costs of entry à la Melitz [endogenous HBS]
- Price rigidities

Which friction/parameter really matters?

Ghironi & Melitz with exogenous non-traded sector? Or Benigno and Thoenissen with endogenous entry in traded sector?

## Impulse-response to Home traded sector productivity shock



## Interpretation of results

Impulse-response to a positive Home traded sector productivity shock

*Exogenous Balassa-Samuelson and incomplete markets*

Increase in demand of NT and wages in NT = appreciation of real exchange rate: exogenous Balassa-Samuelson

*Vs adjustment in number of varieties à la Melitz*

Appreciation of TOT? Are TOT adjusted for expansion in number of varieties?

RER is ratio of CPI or adjusted for number of varieties?



## Interpretation of results

*Or interaction & amplification?*

Reallocation of resources towards traded-sector [reinforce exogenous HBS].

More varieties are traded and each variety supplies more.

Incomplete markets reinforce exogenous HBS & entry of firms in traded sector.

But why is RER volatility so low? Small share of traded and non-traded goods prices not very volatile?

## **To enlighten the results**

Decomposition of real exchange rate between TOT and NT goods prices. Adjustment for number of varieties.

Does the appreciation of TOT come from wealth effects and market incompleteness? Or number of varieties?

Does the appreciation of NT goods prices come from market incompleteness or reallocation? Or just exogenous HBS?

Shut down reallocation across sectors? Shut down incomplete markets?

## To enlighten the results

Endogenous entry and reallocation across sector seems key [as elasticity of substitution between traded  $\varepsilon$  close to 1].

Melitz with exogenous non-traded sector.

Sensitivity to structural parameters can help to test robustness & provide further intuition.

Do price rigidities matter?

## Conclusion

Nice and ambitious paper but needs clarifications regarding:

- the key parameters/frictions necessary for the results.
- the key mechanisms at play

More sensitivity analysis regarding structural parameters also required.