

Lopez-Martin, Leal and Fritzscher's "Commodity Price Risk Management and Fiscal Policy in a Sovereign Default Model"

Olivier Jeanne, Johns Hopkins University

BIS Conference on the Commodity Cycle: Macroeconomic and Financial
Stability Implications

Mexico City, August 2016

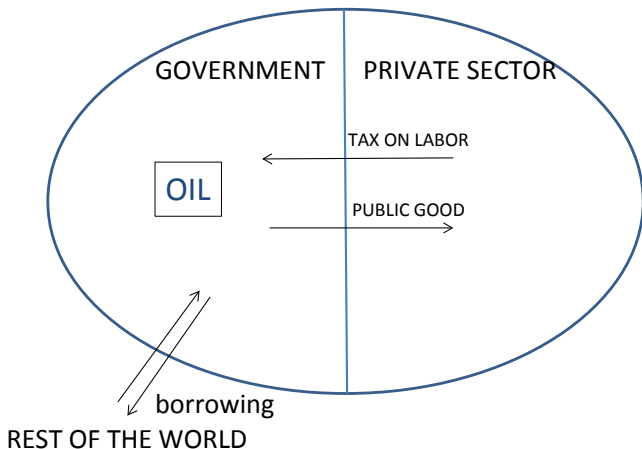


Figure: Model

Summary

- Fall in the price of oil can be smoothed by external borrowing, but if credit constraint is binding, adjustment involves a fall in public expenditures, increase in taxes, which lowers output
- In this context, introduce three hedging instruments:
 - 1 indexed debt
 - 2 options
 - 3 forward contracts(all on the price of oil)
- Result (based on calibration to Mexico): Hedging reduces the volatility of a range of variables, and the welfare gains are substantial

Welfare gain from hedging instruments (in % of commodity revenue)

	indexed bonds	forward sales	put options
Welfare gain	5.7%	3.4%	4.7%

I like the paper, it asks an important question and makes steps towards the answer

Comments

- Comment 1: country vs. government
- Comment 2: impact of hedging on external credit constraint
- Comment 3: welfare gain measurement
- Comment 4: assumptions about hedging

1) Country vs. government

- The model has a meaningful distinction between government and private sector
 - in particular no Ricardian equivalence because of distortionary taxes
- Good thing, but the paper seems to go only half-way in the right direction
- The private sector has no access to any financial instrument of any kind
 - it is not directly exposed to oil price risk either (implicit assumption about hedging?)
- From an analytical perspective, wouldn't it be preferable to clarify what's new in a model with just a representative consumer?

2) Impact of hedging on external credit constraint

- Given consumer's impatience, an important channel for welfare is the impact of hedging on the credit constraint
 - without opportunistic default hedging tends to relax the constraint (Borensztein et al, 2013)
 - but with opportunistic default? (this paper)
- Hedging tends to restrict the external credit constraint

	base	indexed bonds	forward sales	put options
debt/GDP	0.236	0.164	0.209	0.230

- I would have expected a different result, at least in the case of options
 - for example, through strategic use of options to increase the cost of default
- Intuition?

3) Welfare gain measurement

- Puzzling result: hedging yields substantial welfare gains even though it restricts the external credit constraint
- This comes from how the welfare gains are measured in the paper
- Welfare gain from introducing a new instrument at a given point in time

$$V_{new}(state_t) - V_{old}(state_t)$$

- In order to have a measure independent of initial conditions, take the average of this welfare gain in the "stochastic steady state" without instrument

$$\mathbb{E}_{old}(V_{new} - V_{old})$$

- This is not what this paper does

Welfare gain measurement (cont'ed)

- Instead, the authors compare the stochastic steady state with new instrument to the stochastic steady state without instruments

$$\mathbb{E}_{new} (V_{new}) - \mathbb{E}_{old} (V_{old})$$

- By doing so they do not take into the welfare gain/cost of changing the credit constraint in the transition to the new equilibrium
 - a restriction in the credit constraint will be counted as a welfare gain

4) Assumptions about hedging

- The benchmark model assumes that the government can issue only fully-indexed debt (repayment varies one-for-one with oil price)
 - this may lead to excessive indexation
 - intermediate indexation (or mix of indexed and non-indexed debt) should be the benchmark
- The put options are free
 - why?
 - how is it that they do not yield larger welfare gains?

Interesting paper

One issue needs to be clarified

- explain the impact of hedging on the external credit constraint
- measure the welfare gain of hedging in a way that takes into account its impact on the credit constraint

THANK YOU!