Exchange rate and prices
in a dynamic two country model of bilateral oligopoly

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Abstract

Trade in intermediate goods has gained importance in recent years. Typically, in markets for those types of goods, there is a limited number of firms, both on the sellers' and the buyers' sides. That is, those markets often have the feature of "bilateral oligopoly". We build a dynamic two country model in which only intermediate goods are traded internationally. The market for each type of intermediate goods is characterized by the bilateral oligopoly model of Hendricks and McAfee (2010). Prices of inputs into the production of those goods, as well as those of final goods produced with those goods, are assumed to be sticky in their domestic currency units. In contrast, in the market for the internationally traded intermediate goods, there is no apparent cause for price stickiness. However, due to the stickiness in both input prices and final goods prices in each country, both exporters and importers have incentives to try to stabilize the price of intermediate goods in their own country's currency units. This gives rise to an imperfect pass-through. We show the following:

(1) In a benchmark model in which the two countries are completely symmetric, the exchange rate pass-through rate is 50%. This prediction is in a stark contrast with that of the standard model with a monopolistically competitive market, which states that the long run pass-through rate should be 100%. Thus, the pass-through puzzle --- empirical estimates for the pass-through rate are typically far below 100% (actually often around 50%) --- may not be a puzzle, after all.

(2) Our model also points to some key factors which cause the pass-through rate to deviate from the benchmark rate of 50%. One of such parameters is the input supply elasticity. Consider a situation in which the foreign country (say China) can readily mobilize resources to increase production of the modern intermediate goods sector whenever it is desirable (a high elasticity case). Consider another situation in which it has become costly to reallocate resources to such a sector (a low elasticity case). We compare responses of prices to an exchange rate shock between these two cases.