The household preference structure and pricing-to-market in the New Open Economy Macroeconomics models

Yanchun Zhang [*]

Department of Economics, San Francisco State University, 1600 Holloway Ave., San Francisco, CA 94132, United States

Abstract

In this paper, I study three New Open Economy Macroeconomics models to investigate how the assumptions made about the household preference structure and the degree of pricing-to-market affect the model solutions. The first model is a generalized two-country, two-sector model which produces the theoretical ambiguity concerning the state of the economy. The second model simplifies the preference structure and generates the tractable model solutions. The third pricing-to-market model finds that the terms of trade movements depend crucially on the degree of pricing-to-market. The empirical investigation is thus of much interest since theory fails to give a clear prediction.
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1. Introduction

Today many economists use New Open Economy Macroeconomics (NOEM) models, initiated by Obstfeld and Rogoff (1995), to study the current account dynamics, the real exchange rate fluctuations, and other important issues in the field of international macroeconomics. There are quite a few open debates remaining in the literature. Among them, one is the specification of household preferences, and

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* Tel.: +1 415 338 7516; fax: +1 415 338 1057.
 E-mail address: yanchun@sfsu.edu.

another is whether or not pricing-to-market is a more realistic assumption than pricing-in-the-producer's-currency.

Compared to old Keynesian models, NOEM models have microfoundations and are featured with explicit utility maximization problems and intertemporal budget constraints. Since the specification of household preferences is crucial to any microfounded models, the values of the list of parameters in the utility functions thus will affect the model results. These parameters include the intertemporal elasticity of substitution, the intratemporal elasticity of substitution between the traded goods consumption and the nontraded goods consumption, the consumption elasticity of money demand, etc. In Obstfeld and Rogoff (1995) and its appendix, these parameters are assumed to be unitary.

Another debate in the literature is on the invoicing choice of exporters. Some open economy macroeconomists like Obstfeld and Rogoff assume that exported goods are priced in the producers' currency while others like Devereux and Engle assume that exported goods are priced in the consumers' currency. The first group of economists usually concludes that deviations from purchasing power parity arise when there are movements in the relative price of nontraded goods between countries. However, the second group of economists finds that international market is segmented and international deviations in traded goods prices are responsible for a large proportion of real exchange rate fluctuations.

In this paper, first, I will examine a baseline NOEM model with a very general household preference structure. Second, I will study a special case of the baseline model with a simplified preference structure. Comparing the predictions of the current account, the terms of trade, and the real exchange rate dynamics in response of exogenous shocks from these two models will help to find how NOEM model solutions are sensitive to the values of the parameters in the utility function. The third model I will discuss is a pricing-to-market NOEM model. Comparing the pricing-to-market model with the first two NOEM models where the traditional assumption of pricing-in-producer's-currency is made, I will be able to find whether the assumption of pricing-to-market is critical to explain the current account and the real exchange rate dynamics.

The baseline model and its special case are extended from Obstfeld and Rogoff's (1995) one-sector, two-country, sticky-price open economy model. Their model assumes the law of one price hold for all goods in the economy, and thus the real exchange rate is a constant in both the short run and the long run. In contrast to the preference specification that appeared in Obstfeld and Rogoff, the utility function discussed in the present paper includes the nontraded goods consumption. Adding the nontraded goods sector to their framework helps the present paper to replicate the observed real exchange rate behavior—the short run and the long run deviations from purchasing power parity.

The appendix to Obstfeld and Rogoff (1995) also includes the nontraded goods consumption in the utility function and creates the real exchange rate dynamics. But assuming that the traded goods output is fixed and the price of traded goods is perfectly flexible shuts off the current account dynamics in their model. Hau (2000) also introduces nontraded goods into a NOEM model to create short run purchasing power parity deviations. Neither does he look at the current account dynamics responding to monetary and real shocks.

Different from Obstfeld and Rogoff (1995) and Hau (2000), I introduce the separate production sectors of traded and nontraded goods in the present paper to make the NOEM models able to replicate not only the real exchange rate fluctuations but also the current account volatility in the real economies. This new feature also enables me to distinguish productivity shocks to the traded goods sector from those to the nontraded goods sector. Such a distinction turns out to be important for the model solutions. The special case of the baseline model reveals that the two shocks have different effects on the real