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Noisy news and exchange rates: a SVAR approach

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Highlights

- The role of noisy-news about interest rate differentials driving exchange rates is studied.
- Applies a two stage estimation method to identify noisy-news shocks using a SVAR.
- Noise shocks are found to be an important source of movements in USD/GBP.
- Noise shocks are larger during times of changing monetary policy.

Abstract

This paper introduces noisy news shocks into a model of exchange rate determination to measure the impact of these shocks using a SVAR. Agents in the foreign exchange market make decisions with imperfect information about economic fundamentals driving interest rate differentials between countries in that they must rely on a noisy signal of future interest rates. I apply the framework to the USD/GBP nominal exchange rate for the period 1986-2013. Results show that noisy-news explains approximately one fifth of the forecast error variance in the nominal exchange rate, with noise accounting for double (12%) that of news (6%). A historical decomposition of the exchange rate indicates that noise shocks are especially important during periods of changing monetary policy e.g. the 1990 easing and 2001 tightening of U.S. monetary policy and the unconventional monetary policies surrounding the financial crisis of 2008.

JEL classification: C32, F31, F41, G15, D84.
Keywords: Exchange rates, SVAR, News, Noise, nonfundamentalness, invertibility.

1. Introduction

A large empirical literature exists on explaining the movements in exchange rates based on shocks to macroeconomic fundamentals (see, for example, Eichenbaum and Evans [20], Chari et al. [14] and Scholl and Uhlig [43]). There is, however, strong evidence that exchange rates are not driven by the same shocks that drive other macroeconomic variables: exchange rates lack the cyclical pattern of macro variables (Baxter and Stockman [6]), have a surprisingly weak relationship with those variables past and present values (Flood and Rose [23]) and, famously, are forecast more reliably by a random walk than a model based on economic fundamentals (Meese and Rogoff [35] and Rossi [39]). Recent theoretical work has addressed this exchange rate disconnect puzzle by focusing on the kind information that agents use to make decisions in asset markets and in particular on news about macroeconomic conditions.

Duarte and Stockman [19] deliver a model where news shocks lead agents to rationally update their beliefs about risk premia leading to exchange rate behavior that is independent of changes in macro variables. Ilut [28], building on the models of Gourinchas and Tornell [27] and Bacchetta and Van Wincoop [3], models agents as ambiguity averse investors who receive noisy news about productivity. His model is consistent with the empirical regularities of delayed appreciation following an interest rate shock, a higher likelihood of large rapid depreciation or "crash risk", and momentum trading profits. While news based models of exchange rates are theoretically appealing they entail two difficulties in identifying news shocks in the data.

News entails that agents decisions depend on an unobservable state variable - the time lapse from when news arrived to when the shock is realised. This anticipation will be reflected in the data that agents generate. For example, pound sterling may appreciate prior, and respond less