ELSEVIER

Economics Letters 51 (1996) 37–44

economics letters

The monetary model of the exchange rate under hyperinflation: New encouraging evidence

Tom Engsted

Department of Information Science, The Aarhus School of Business, Fuglesangs alle 4, DK-8210 Aarhus V, Denmark

Received 12 May 1995; accepted 10 October 1995

Abstract

This paper suggests a new method of testing the rational expectations version of the monetary model of the exchange rate under hyperinflation that takes into account the stochastic non-stationarity of the data involved. The method is applied to money and exchange rate data from the German 1921–1923 hyperinflation, and the results are very supportive of the model.

Keywords: Hyperinflation; Exchange rate determination; Cointegration

JEL classification: C22; C32; E31; E41; F31

1. Introduction

The monetary model of the exchange rate (MMER) is one of the central views of exchange rate determination. However, based on data from low-inflation industrialized countries since the end of the Bretton Woods system at the beginning of the 1970s, the observed evolution of exchange rates does not seem to be in accordance with the basic predictions of the model (see, for example, Meese, 1990; MacDonald and Taylor, 1992). In contrast, the model is often found to fare much better in explaining exchange rates in high-inflation countries, like those in Latin America (see, for example, McNown and Wallace, 1994). In particular, it is often argued that the model provides a very good description of the reichsmark exchange rate during the German hyperinflation in the 1920s. In a very important and influential paper Frenkel (1976) tested the MMER under rational expectations using data on German money and the reichsmark–sterling exchange rate for the hyperinflation period, and found very strong support for the model.

0165-1765/96/$12.00 © 1996 Elsevier Science S.A. All rights reserved

SSDI 0165-1765(95)00781-4

The econometric analysis in Frenkel (1976) was based on simple OLS regressions involving levels of the variables under the assumption of stationarity. However, recent research has established that under hyperinflation the levels of money, prices, and exchange rates should most naturally be regarded as non-stationary variables, integrated of order two (see, for example, Keil and Symons, 1991; Taylor, 1991; Engsted, 1993, 1994). Among other things, this implies that in the present context of the MMER, certain cointegration properties of the data should be tested and subsequently used in evaluating the model.

The purpose of the present paper is to derive and test these cointegration implications of Frenkel's (1976) model and, based on the cointegration results, to derive and test the exact restrictions that the MMER under rational expectations imposes on a bivariate model for money and exchange rates. In addition to contributing to the huge literature on the German hyperinflation, the approach suggested in this paper may form the basis for future analyses of hyperinflations that now and then dominate economies round the world, e.g. the present hyperinflation episodes in some of the new East European countries.

In the next section the MMER is set up and the cointegration implications are derived. Further, it is shown how to test the different restrictions that the model under rational expectations imposes on a particular VAR model written in such a way that it accommodates the cointegration properties of the data. Also, the approach is compared with Frankel's approach. In Section 3 the methods are applied to the German hyperinflation data. The results are surprisingly clear and precise: despite the very strong assumptions inherent in the model (Cagan-type money demand, instantaneous purchasing power parity, rational expectations, and neglect of all foreign variables) the exact version of the MMER gives a very accurate description of the reichsmark–sterling exchange rate during this period. Finally, Section 4 concludes the paper and makes a comparison of the results with some recent literature regarding money demand during the German hyperinflation.

2. The model

Frenkel's monetary model consists of two equations: a Cagan-type money demand equation where the demand for real balances, $m_t - p_t$, is a function of the expected rate of inflation, $\mathrm{E}_t \Delta p_{t+1}$; and a purchasing power parity (PPP) condition, where the domestic (German) price level, p_t, is linked with the foreign price level, p_t^*, through the exchange rate, s_t:

$$m_t - p_t = -\beta \mathrm{E}_t(p_{t+1} - p_t) , \tag{1}$$

$$p_t = s_t + p_t^* . \tag{2}$$

All variables are in logs, β is the semi-elasticity of the demand for real balances with respect to expected inflation, and E_t is the conditional expectations operator.[1] Since under hyperinflation domestic monetary factors completely dominate domestic real income and foreign variables, Frenkel (1976) argued that we may focus exclusively on domestic money and prices,

---

[1] We omit all constant terms in the model. However, in the empirical analysis in Section 3, constant terms are included.

دریافت فوری ← **متن کامل مقاله**

ISIArticles
مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات