



Testing long-run purchasing power parity under exchange rate targeting

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Abstract

The present paper exploits the idea that empirical estimates of the long-run PPP relationship may compound two distinct influences coming from the behavior of market participants and policy makers when the latter are targeting the exchange rate. This tends to bias tests of long-run PPP against its acceptance. The validity of the theoretical arguments is assessed by drawing on the experience of two European Union countries, Greece and France, for the post-Bretton Woods period. Estimation biases due to the omission of policy effects are found to be significant only in the case of Greece. For France, our test results provide evidence bearing on the effectiveness of the competitive disinflation strategy pursued by the French authorities.

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1. Introduction

Purchasing power parity (PPP) is one of the most extensively analyzed relationships in the international finance literature (see, e.g., the recent survey studies by Breuer, 1994; Froot and Rogoff, 1995; and Rogoff, 1996). In its relative version it states that changes in nominal exchange rates should equal inflation differentials or, equivalently, that real exchange rates should be constant. The underlying notion is that deviations from the parity represent profitable commodity arbitrage opportunities which, if exploited, will tend to bring the exchange rate towards the parity. Although as a description of reality PPP is clearly an oversimplification, it has been used as at least a long-run relationship in a large number of open economy models (see inter alia MacDonald and Taylor, 1992; Froot and Rogoff, 1995) since the return to a floating exchange rate regime in the early 1970s. Yet, its empirical verification as either a short-run or a long-run relationship has generally been rather poor (Froot and Rogoff, 1995). In particular, the failure of PPP to hold in the short run became obvious in the years immediately following the move to floating rates in March 1973, and few proponents of PPP would now argue for continuous PPP. Instead, PPP is seen as a parity condition linking relative prices and the exchange rate in the long run.

Even in its long-run form, PPP was often difficult to establish empirically. Various explanations for the failure of long-run PPP based on theoretical or statistical arguments have therefore been put forward. The main theoretical arguments regard the nature of shocks in the economy and problems related to transaction costs. Shocks that hit the real exchange rate and are permanent can lead to non-acceptance of mean reversion for the real exchange rate. Nevertheless, many authors question the existence of this type of shock over the post-Bretton Woods period. Similarly, transaction costs can drive a wedge between relative prices and the exchange rate, precluding the finding of long-run PPP if these costs do not follow a stationary process.

Statistical arguments explain an apparent rather than a real failure of PPP in the long run. These arguments are mainly related to the low power of the statistical tests used and to measurement errors in prices. In the presence of such problems, rejection of long-run PPP may be considered as a statistical artifact (Michael et al., 1994). For example, empirical studies, which use longer samples or panel data or more powerful testing techniques, usually result in the acceptance of PPP as a long-run condition.

In this paper we offer an alternative explanation for the apparent failure of long-run PPP by considering the effects of policy behavior. The basic idea is that coefficient estimates of the long-run relationship between the exchange rate and relative prices may compound two distinct influences, one coming from the behavior of market participants and the other from the behavior of policy makers in case the latter are targeting the exchange rate.¹ Market participants tend to establish PPP in

¹ A somewhat similar argument involving the existence of a policy rule as regards the management of interest rates by monetary authorities was developed and used by McCallum (1994) to explain inefficiency of the forward market for foreign exchange as implied by rejections of the unbiasedness hypothesis.

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