



ELSEVIER

Journal of International Economics 44 (1998) 1–19

---

---

Journal of  
INTERNATIONAL  
ECONOMICS

---

---

## The overvaluation of purchasing power parity

Paul G. J. O'Connell\*

*Harvard University, Cambridge, MA 02138, USA*

Received 3 May 1996; received in revised form 30 July 1996; accepted 28 December 1996

---

### Abstract

Recent panel studies of purchasing power parity have reported strong evidence of mean-reversion in real exchange rates. However, these studies fail to control for cross-sectional dependence in the data. This failure has dramatic consequences, raising the significance level of tests with a nominal size of 5 percent to as much as 50 percent. It is shown in this paper that, controlling for cross-sectional dependence, no evidence against the random walk null can be found in panels of up to 64 real exchange rates. This finding cannot be attributed to low power, as there is ample power in panels of this size to reject the unit-root null. © 1998 Elsevier Science B.V.

*Keywords:* Purchasing power parity; Real exchange rate; Mean-reversion

*JEL classification:* F31; C32

---

### 1. Introduction

The theory of purchasing power parity (PPP) is the simple proposition that national price levels should tend to be equal when expressed in a common currency. Most economists have, to use Rogoff's (Rogoff, 1996) expression, "warm, fuzzy feelings" toward this proposition, and indeed it is to be found nestled at the centre of many important models of the international economy.

Notwithstanding these warm fuzzy feelings, evidence to support PPP was, until the mid-1980s, quite scant. Just when the empirical standing of PPP reached its

\*Tel.: 617-776-2748; E-mail: poconnel@husc3.harvard.edu; Web:<http://www.economics.harvard.edu/~poconnel>

nadir, Frankel (1986) raised concerns about the power of the statistical tests commonly used to investigate PPP in short time series. This prompted testing of the PPP hypothesis on larger datasets, with much more favourable results. A large body of work now exists showing evidence of reversion to the PPP equilibrium in long time series of prices spanning between 60 and 700 years.<sup>1</sup> This work has suggested that deviations from PPP have half-lives of between 2.8 and 7.3 years.

These time-series studies appear to salvage PPP as a long-run theory of real exchange rate determination. However, they rely on data drawn from both fixed- and floating-rate periods. Moreover, they look only at real exchange rates between industrial countries. In an effort to circumvent the potentially serious biases that might arise from “survivorship” among countries or structural shifts in exchange rate behaviour, a number of researchers have instead expanded the cross-section dimension of their datasets to gain power.<sup>2</sup> Frankel and Rose (1996); Wei and Parsley (1995); Papell (1996); Oh (1996) and Wu (1996), amongst others, use panels of between 20 and 160 real exchange rates, and report mean-reversion to PPP at rates consistent with those found in the time series literature.

This paper examines the assumptions underlying such “wide-sample” panel studies. It is argued that these tests are incorrectly sized, owing to their failure to control for cross-sectional dependence in real exchange rates. These size biases are quite large, raising the significance levels of tests with nominal size 5 percent to as much as 50 percent. It is also shown that the adoption of a more realistic parameterization of the data generating process (DGP) for real exchange rate innovations materially affects the outcome of panel tests of PPP: no evidence in favour of the theory can be found in broad panels of CPI exchange rates over the 1973–1995 period. This finding is important, because it cannot be attributed to low power. Monte Carlo evidence indicates that there is ample power to reject the unit-root null in panels of this size. Rather, the results lend support to the conjecture by Froot and Rogoff (1995) that the long-sample PPP literature may suffer from sample-selection or survivorship bias. They are also consistent with the notion that there has been a structural change in the behaviour of real exchange rates since the advent of the modern float.

The paper is organized around two questions. First, how does the presence of cross-sectional correlation affect the size and power of panel unit root tests? And second, controlling for cross-sectional correlation, is there evidence of mean reversion in real exchange rates? As a preamble, the next section discusses why these are interesting questions to ask, and previews the answers.

<sup>1</sup>See the comprehensive surveys by Froot and Rogoff (1995) and Rogoff (1996) for a catalogue of the empirical literature on PPP.

<sup>2</sup>Lothian and Taylor (1994) and Hegwood and Papell (1996) directly address the possibility of structural shifts in real exchange rate behaviour.

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

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