

**ON THE PURCHASING POWER PARITY FOR  
LATIN-AMERICAN COUNTRIES**

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This paper tests the hypothesis of long-run purchasing power parity (PPP) for all Latin American countries. Those countries share characteristics as high inflation, nominal shocks, and trade openness which might have led to quicker adjustment in relative prices and contributed for PPP to hold. New time series unit root tests give evidence of stationary real exchange rates for the vast majority of countries. In the panel data framework, tests for the null of unit root, null of stationarity, and unit root under multiple structural breaks indicate that the pooled real exchange rate is stationary. Thus, the results provide convincing evidence that PPP holds in Latin-America in the post-1980 period.

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## I. Introduction

Long-run Purchasing Power Parity (PPP) is a corner-stone of many theoretical models in international economics. One way of interpreting the PPP doctrine is that real exchange rates should be mean-reverting, meaning that in response to any shock the real exchange rate must eventually return to its PPP equilibrium level. This is a useful interpretation because it is empirically testable by unit root tests. Empirical studies, however, rarely reject a unit root in real exchange rates when using traditional augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests, widely recognized as suffering from low power. This is the case for highly persistent time series, a typical characteristic of real exchange rates. Size distortions, on the other hand, is not an issue because it depends on the presence of a strong negative moving average component, which is not usually found in real exchange rates (e.g., Ng and Perron 2002).

Besides theoretical implications, there are also political consequences due to price stability emerging from the PPP hypothesis. If PPP holds empirically, changes in national price levels tend to equalize in the long run. This means that, once converted to a base currency, the price of a common basket should be the same across countries. However, deviations from PPP are found to be high and volatile in the short run and the speed of convergence to the long run PPP is very slow (e.g., Rogoff 1996). Those features make it even harder to reject a unit root in real exchange rates and thus to support long run PPP.

Recent developments in time series and panel data econometrics have provided better tests for the PPP hypothesis. New tests proposed by Elliott, Rothenberg, and Stock (1996) and Ng and Perron (2001) display considerable gains in power and size compared to the traditional ADF and PP tests. Those tests use GLS detrended data to remove deterministic terms from the time series and the modified Akaike information criteria to choose the truncation lag in augmented test equations. Simulation exercises show that they have higher power for highly persistent series, as is the case of real exchange rates.

Another way of increasing the power of unit root tests is to increase the span of the data by using a panel of countries. By pooling cross-section time series data, Levin, Lin and Chu (2002) show that one can generate more powerful unit root tests. In addition, it is possible to control for country heterogeneity and have more variability and efficiency when using the joint estimation of panel data.

The difficulty here is that panel data unit root tests for the null of unit root are frequently criticized for over-rejecting the null when a few individuals in the panel

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