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An empirical investigation of purchasing power parity (PPP) for Turkey

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Abstract

Whether purchasing power parity (PPP) holds for the German mark (euro)–Turkish lira real exchange rate has significant implications on Turkey's prospects for joining the European Union (EU). As such, it is important to accurately test the empirical validity of PPP between the two currencies. To do so, we apply the methodology developed by Caner and Hansen [Caner, M., & Hansen, B. (2001). Threshold autoregression with a unit root. *Econometrica*, *69*(6), 1555–1596], which allows us to simultaneously consider non-stationarity and non-linearity. Our findings indicate that PPP holds for the lira–mark exchange rate in one threshold regime but not in another. They also provide stronger support for PPP in the most recent years.

JEL classification: F31; F15

Keywords: Turkey; European Union; Purchasing power parity; Real exchange rate; Threshold autoregressive (TAR) model

1. Introduction

In December 2004, the European Union (EU) and Turkey agreed to start accession talks by October 2005. While the actual entry of Turkey will take place only after a long and

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complex process, the mere prospect of Turkish entry remains a highly controversial and divisive issue within the EU. Opposition to Turkish membership is partly based on cultural and religious factors. There is some concern in Western European governments as well as the general public that admitting a predominantly Muslim country with a largely non-Western cultural heritage will inevitably dilute the European character of the EU, and hence its purpose and unity. There are also political considerations behind Western European reservations about admitting Turkey into their club. Specific political problems include military interference in politics, human rights violations and the long-running dispute with Greece over Cyprus.

There are serious economic obstacles to Turkish membership as well. It is worth noting that Turkey is a poor country with a large population and a sizable agricultural sector.[1] A widespread if not altogether rational fear in Western Europe is that of millions of impoverished Turkish migrants swamping their countries, taking away jobs from the locals and overburdening social services. At a more practical level, the large subsidies that EU traditionally gives to its farmers and poorer regions may no longer be sustainable in the presence of such a big poor country with a large number of farmers.[2] That is, the amount of net fiscal transfers from the rest of the EU to Turkey may turn out to be beyond politically feasible levels, especially for net contributors to the EU budget such as Germany. Furthermore, the current net beneficiaries of the EU budget are likely to resist any substantial diversion of resources toward Turkey at their expense.

Economic concerns within the EU about Turkish entry thus revolve around the wide income gap between Turkey and the EU.[3] Comparing national incomes requires using the exchange rate to convert into a common currency. The concept of purchasing power parity (PPP) remains a cornerstone of exchange rate theory and is based on the law of one price. The absolute version of PPP states that exchange rates should equalize the national price levels of different countries in terms of a common currency. The relative version of PPP states that over time a country with a higher inflation than another will experience a proportionate depreciation of its currency. Although market exchange rates are less accurate than the PPP exchange rates as the basis of inter-country income comparisons, they are widely used for this purpose in practice. After all, the market rates are the actual rates used in real-world economic transactions whereas PPP rates are theoretical. If changes in the market exchange rate capture inter-country differences in inflation so that relative PPP holds, then using the market rate as the basis of conversion will yield more accurate estimates of national income, estimates that account for relative inflation, and hence changes in the relative purchasing power of currencies. This, in turn, creates greater certainty about

[1] Turkey's per capita GDP in 2003 was about US$ 2800 in market exchange rate terms and US$ 6700 in PPP terms. Turkey's population was close to 71 million in 2003. If Turkey joined the EU today, it would be second only to Germany in terms of population. Agriculture accounted for 13.4% of Turkey's total output in 2003.

[2] Agriculture accounted for 32% of Turkey's total employment in 2003. Agriculture's share of employment thus far outweighs its share of output.

[3] Turkey's per capita GDP is less than a third of the average for the 15 EU members before the enlargement of May 2004. Portugal, the poorest of those 15 members, had a per capita GDP of about US$ 12,100 in market exchange rate terms and US$ 18,000 in PPP terms, which are much higher than the corresponding figures for Turkey, shown in Note 1. Nevertheless, Turkey's per capita income is more or less the same as Bulgaria and Romania, both hoping to join the EU in 2007.