



The Balassa–Samuelson model of purchasing power parity and Chinese exchange rates[☆]

Qian GUO

The Business School, Loughborough University, Ashby Road, Loughborough LE11 3TU, UK

ARTICLE INFO

Article history:

Received 18 November 2008

Received in revised form 1 September 2009

Accepted 16 February 2010

JEL classification:

E31

F31

F41

O53

Keywords:

Black market

Real exchange rate

Purchasing power parity

Labour productivity

Tradable goods

ABSTRACT

Our principal purpose here is to assess the extent to which both the official and black market exchange rates for the Chinese economy exhibit compatibility with the Balassa–Samuelson model over the period from 1985 to 2006. We employ annual measures of inflation and industry input on an aggregated, disaggregated and sector basis, all of which have been especially constructed for this study. Both the time series and panel cointegration tests applied to this data are generally inconsistent with the prediction of the Balassa–Samuelson model that the tradable goods sector is compatible with purchasing power parity. However, our analysis also shows that other predictions of the Balassa–Samuelson model – most notably that there will be a strong long-run relationship between the real exchange rate and the relative productivity differential between China and the U.S. – does hold up for the Chinese economy. Moreover, the black market exchange rate appears to be more consistent with the predictions of the Balassa–Samuelson model than the official exchange rate.

© 2010 Elsevier Inc. All rights reserved.

1. Introduction

Whilst economists have long sought to explain exchange rate fluctuations they have done so with varying degrees of success (Taylor, 2002). The predominant paradigm is that of purchasing power parity (PPP) which invokes the law of ‘one price’ in conjunction with an integrated and perfectly competitive world economy to predict that relative prices will be equalised across currencies and locations. However, empirical tests of the purchasing power parity hypothesis have met with only modest support. Taylor (2002), for example, summarises a century of empirical work with the conclusion that whilst much of the early evidence is generally compatible with PPP more recent work using time series analysis of short spans of data has (p. 139) ‘led many to conclude that purchasing power parity failed to hold’. Probably the most compelling argument against the ‘pure’ or absolute form of PPP has been independently advanced by Balassa (1964) and Samuelson (1964). Their analysis is based on the observation that the typical economy is comprised of ‘tradable’ and ‘nontradable’ sectors. The tradable sector consists of industries like agriculture, manufacturing and mining where outputs can be cheaply and easily transported across international markets. Against this, the nontradable sector is comprised of immovable property, perishable goods and services like hospitality and tourism and these are much less easily traded across international barriers. Balassa (1964) and Samuelson (1964) suggest that whilst purchasing power parity will hold for the traded sector of the economy it is much more difficult, and often impossible, for it to hold for the non-traded sector. Indeed, they argue that the greater the productivity differential in the traded sector between any two countries the greater

[☆] I am grateful to Mark Tippet, Stephen Hall, Jeffrey Zax and an anonymous referee for encouragement and valuable comments.

E-mail address: q.guo@lboro.ac.uk.

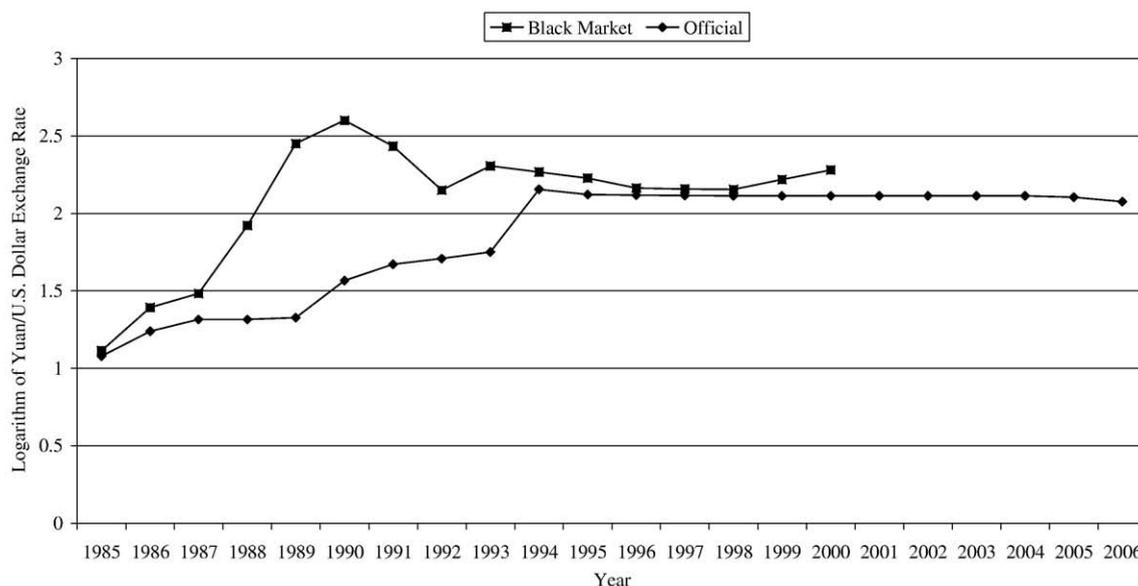


Fig. 1. The Chinese official versus black market exchange rates, 1985–2006. Note: The sample period of the black market exchange rate is limited by data restrictions, which are from 1985–2000.

Sources: International Financial Statistics (IFS), World Currency Yearbook and World Development Indicators (WDI).

will be the gap between purchasing power parity and the market rate of exchange between the currencies of the two countries. It is this proposition which underscores virtually all of the real exchange rate studies that have been conducted over the past forty years (Asea & Mendoza, 1994, p. 244).

Given this, it is intriguing to note that over the period from 1985 to 2006 the real rate of exchange between the Chinese RMB yuan and the U.S. dollar depreciated on average by 1.59% per annum even though the Chinese real Gross Domestic Product (GDP) increased on average by 9.87% per annum – well in excess of the average growth in real U.S. GDP of 3.09% over the same period.¹ Since China's growth rate exceeded that of the U.S. one would expect that under the Balassa–Samuelson model its real exchange rate against the U.S. dollar to have appreciated over this period. However, since the real exchange rate depreciated, this means that over the period from 1985 to 2006 the yuan/U.S. dollar exchange rate appears to have evolved in a manner which is incompatible with the Balassa–Samuelson model. An important feature of the Chinese economy over this period, however, is the co-existence of official and black market foreign exchange rates.² Here Fig. 1 summarises the trend of the official and black market exchange rates over time.³ Overall, the spread between the black market and official exchange rate has been substantial. The black market exchange rate began to rise substantially from 1988, mainly because of hyperinflation in the Chinese economy, expectations about the devaluation of the official exchange rate as a consequence of China's re-admission to GATT (General Agreement on Tariffs and Trade) and the Tiananmen Square incident. The black market exchange rate reached a peak of 15 yuan to the dollar at the end of 1989, compared to the official rate at this time of 3.72 yuan to the dollar. This necessitated several revisions to the official exchange rate – in January, 1990 the official rate was devalued to 4.72 yuan per dollar and a further devaluation occurred in December, 1990 when the official rate was revised to 5.23 yuan to the dollar. Moreover, several generally minor devaluations were made to the official rate subsequent to these dates (Chou & Shih, 1998, p. 166). The important point here is that whilst the official exchange rate might show little compatibility with the Balassa–Samuelson model yet the black market exchange rate, which over the period of our analysis was often significantly higher than the official rate, could yield empirical support for the PPP theorem.⁴

Table 1 shows the relationship between the average annual change in the real official and real black market exchange rates and the ratio of tradable prices vis-à-vis those of the U.S. measured in the RMB yuan. Note how Table 1 shows that the Balassa–Samuelson requirement that inter-country tradable prices are identical (or that the growth rate of the tradable price ratio is zero) does not hold for the Chinese economy. Whilst this is true for both the official and black market exchange rates Table 1 also shows that the black market rate is more compatible with PPP than its official counterpart (the growth rate of the common currency tradable price ratio expressed at the black market exchange rate is closer to zero).

¹ We use the U.S. dollar as the numéraire currency since the U.S. is China's major trading partner.

² Yin and Stoeber (1994), Ding (1998), Phylaktis and Girardin (2001) provide a detailed summary of the history and sources of black market foreign exchange activities in China.

³ Only yearly data is considered since monthly black market data was available only to 1993 as reported in the *World Currency Yearbook*.

⁴ Note that purchasing power parity requires large differences in price movements (measured in common currency) between two countries (Choudhry, McNown, & Wallace, 1991, p. 559).

متن کامل مقاله

دریافت فوری ←

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