

BIG MAC ECONOMICS: COMPARING THE PRICES OF BURGER INGREDIENTS CONFIRMS THAT GLOBALISATION DOES MAKE INTERNATIONAL PRICES CONVERGE

Despite increasing global economic integration, there continue to be large and persistent differences between countries in the prices of many otherwise identical products. Research by Professors **David Parsley** and **Shang-Jin Wei**, published in the October 2007 issue of the *Economic Journal*, addresses this puzzle by examining the prices of a Big Mac and its ingredients.

They find that the impact of non-traded components of Big Mac prices (labour, marketing, distribution, rent, utilities, etc.) account for much of the persistence in international price differences. Intuitively, this is because final products contain so much local content, which is inherently non-traded – at least 55% in the case of a Big Mac.

The study also concludes that the use of aggregate price indices masks convergence in individual prices. This suggests that comparing national price indices is misleading because of cross-country differences in the price indices themselves – for example, different relative weights for rice and cheese in Japan compared with France.

Price differences represent potential economic inefficiencies and/or missed arbitrage opportunities. International price differences also convey information about purchasing power between countries. 'Purchasing power parity' (PPP) occurs when the prices of the same bundle of consumption goods in two countries are equal, when expressed in a common currency.

Even though most people at one time or another have observed international price differences, for example when they travel abroad, such data are of little help in rigorous tests of the various explanations. For that one needs many such observations (data points) collected over time, and statistical analysis.

Unfortunately, the national agencies that collect price data disguise them by averaging individual prices into a consumer price index (CPI) prior to public dissemination, mainly to protect the anonymity of the vendors supplying the underlying prices. Nearly all we know about international price differences comes from statistical analysis of CPI data.

Economists have identified many shortcomings of CPIs for addressing questions about the causes of observed price differences. First, since price indices are simply price averages expressed relative to a base year, the exact magnitude of international price differences cannot be ascertained by comparing national CPIs.

There are other problems with CPIs, limiting their usefulness for studying these questions. For example, the Japanese CPI puts a bigger weight on rice than the French one, making the two price indices less comparable.

Big Mac prices have several advantages over CPIs. First, since the Big Mac is standardised across countries and its actual prices are observed, one can meaningfully study price differences of identical items across countries. Using the time series history of these prices this study shows that Big Mac prices are highly correlated with national price levels (thus are not so narrow as to be uninformative).

Finally, the study matches Big Mac prices with the prices of its underlying ingredients (since the exact composition of a Big Mac is known) and thus is able to make inferences about how much non-traded factors (labour, rent, utilities, etc.) versus how much traded factors contribute to the overall PPP puzzles.

The research finds that:

- Deviations from price parity actually disappear fairly quickly for identical goods, in contrast to evidence from consumer price indices.
- The results from unbundling the Big Mac into its traded and non-traded ingredients reveals that deviations from price parity for identical, highly tradeable products accounts for only a small portion of overall international price differences, again in contrast to evidence from consumer price indices.
- Final goods prices embody a considerable portion (at least 55%) of non-traded inputs. Thus, movements in labour and other non-tradeable items prices can be a central factor in determining the size and persistence of international price differences (a much more intuitive result).
- Greater exchange rate variability increases international price deviations since price deviations in traded inputs become more important with higher exchange rate volatility.

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Notes for editors: 'A Prism into the PPP Puzzles: The Micro-foundations of Big Mac Real Exchange Rates' by David Parsley and Shang-Jin Wei is published in the October 2007 issue of the *Economic Journal*.

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