

Comments on Berka and Crucini
“The Consumption Terms of Trade and Commodity Prices”

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In this paper the authors apply a variance decomposition analysis based on micro-price data to study the consumption terms of trade and the production terms of trade in various countries. The analysis starts with the study of retail price inflation and price level inflation for the world as a whole. This is done by averaging US dollar prices of individual goods and services across cities covered in the EIU retail price survey. A variance decomposition of world inflation follows next – to estimate the contribution of each good to aggregate world inflation variability.

While variance decomposition analysis is a statistical tool that is well developed and applied in the statistics and finance literature, this paper is one of the first to utilize this methodology to undertake this study of consumption terms of trade and commodity prices. Furthermore, the level of disaggregation that the authors have chosen allows them to address detailed issues at the individual good/service level and by country. The authors adequately lay out the motivation and the basics of the approach in numerous sections of the paper. One minor additional detail that would be useful is more information on just how the kernel density estimates of the betas and the individual good standard deviations are calculated in Figure 3 (Section 4).

The world price series at the micro level form the basis of the computations in the paper for the consumption and production terms of trade. Import and export price indices are constructed from microdata on trade flows by weighting world prices (calculated from the EIU database) by national import and export trade shares. The ratio of the export price index to the import price index then serves as the estimate of the terms of trade.

The evidence in the paper shows that consumption terms of trade and the production terms of trade are empirically distinct – with the former being less volatile than the latter in levels. The correlation of the two measures within a country averages 0.3 for log levels and 0.4 for growth rates.

Variance decomposition of the aggregate consumption terms of trade into microeconomic sources of variation at the good level shows that the bulk of the variability for most countries in the sample is accounted for by oil, automobiles and medicine. The role of oil in the production terms of trade is pretty well documented in the literature; the results in the paper indicate that the role extends to the consumption level as well. The more novel finding in the paper is the concentration of variance in so few items, in particular automobiles and medicine. The movements in key world prices also allow the authors to classify most of the countries under study into two groups – those with inverted U-shaped terms of trade profiles (20 oil-importing countries) and those with U-shaped patterns (10 countries, mostly oil exporters).

Considering their results as preliminary findings, the authors make the following conclusions. Their findings point to a broader role for a small set of goods to dominate a nation's terms of trade variation than was previously thought. The fact that oil dominates in a broad cross-section is consistent with prior work on oil and the terms of trade. The notion that that individual items other than oil may dominate within the cross section of countries is novel. This further suggests the value of organizing countries on the basis of their net export shares along a wider commodity space than oil and the few additional items focused upon in the paper. As the authors point out, a more detailed study can be undertaken to consider how the influential set has evolved over time and across countries. This would indeed be a natural extension of the analysis that is reported in the paper, in particular, taking into account correlations that exist over time and across countries. Finally, the authors feel that the empirical differences between the consumption and production terms of trade are compelling - but further investigation is needed to relate this result to broader related literature.

The authors conclude by pointing out a number of important caveats regarding their use of a common set of international prices to construct the consumption terms of trade, the lack of coverage in the EIU sample of intermediate goods used by firms and not by consumers, and the possibility of using other data sources such as the Penn World Table.