INTERNATIONAL TRADE PRICE INDICES

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NON-TECHNICAL SUMMARY

Export and import price indices are useful instruments in international economics. International trade theory shows that relative prices determine industrial specialization and welfare gains resulting from trade openness. Hence, the evolution of international trade prices is a source of ceaseless debates such as the consequence of trade policies, the quality and cost competitiveness of countries, or the influence of globalization on worldwide inflation. More precisely, international macroeconomics analysis requires trade prices indices to study terms of trade, inflation or volume/price elasticity of open economies. In international trade studies, price indices allow for instance to deflate trade values in order to obtain volumes.

The methodology used by national statistical institutions to compute price indices often differs and prevents any type of cross-country analysis. For instance, the American Bureau of Labor Statistics gives Laspeyres type indices of US exports and imports observed prices, whereas the French national statistical institute, the INSEE, provides Paasche type indices built on French external trade unit values. Of course, the UN and the IMF provide crosscountry comparable price indices, releasing export and import unit value indices at an aggregate level, but their series have some limitations. Firstly, they report only Laspeyres indices which are not necessarily the most appropriate (for instance, they can over-estimate the actual price changes). Secondly, the data cover only 44 countries, excluding many developing countries. Finally, there are no disaggregated trade indices making large scale and detailed international comparison possible.

This work aims at providing aggregated and sectoral trade price indices for practically all countries of the world. These indices are computed using unit values given by BACI, the CEPII's database of international trade at the product-level. BACI provides value, quantity and unit values of world bilateral flows. It covers the period 1995-2004 and its rich country dimension is particularly useful for international comparison of prices evolutions. The resulting TradeP rices database is available on line at BACI's CEPII web page, offers to users the possibility to choose the most accurate index for each particular purpose. In addition, the SAS programs are also downloadable making our trade price indices transparent and flexible. Several formulas are used, namely the common Laspeyres and Paasche indices but also "superlative"

Fisher and Tornqvist indices, in both chained and fixed-base forms. The chained Laspeyres and Paasche are also calculated in their geometric form.

In the first part of this paper we present the formulas of the different indices that we compute. Relying on existing literature (particularly Diewert (1976) and Feenstra (2004)), we present the characteristics of these different aggregation methods. In particular, we highlight the links existing between statistical methods and economical assumptions about implicit elasticity of substitution between goods. Indeed, for example, the Tornqvist index can be derived from a translog utility function assuming a peculiar elasticity of substitution between goods. An exhaustive sensitivity analysis is done in order to determine the appropriate way to deal with technical difficulties, such as the treatment of measurement errors in bilateral unit values.

After describing the methodology used, this paper provides some stylized facts illustrating our results. From a statistical point of view, we highlight that the aggregation method to compute trade price indices matters and that international comparisons of trade price indices need to use indices computed with the same formula. That strengthens the necessity to provide a trade price database allowing international comparison. From an economic point of view, we show, with some selected results, the usefulness of both aggregated and sectoral trade price indices to study international economics. Thus, for instance, French and German export prices evolution cannot explain the lack of competitiveness of French exporters. We observe also that the BRIC (Brazil, Russia, India and China) experience different evolution of their terms of trade. A sectoral analysis allows us to understand the determinants of these differences. Russia for example, experiences an appreciation of its terms of trade due to the boom of primary good prices, which are an important share of its exports (particularly gas). Lastly, we use our price indices to deflate international trade values data in order to get volume series. Whereas the trade of primary goods experiences the largest growth in value in 2003 and 2004, the sector in which traded volumes increased the most in 2003-2004 concerns the investment goods.