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Technical Annex

Trade Similarities between Eastern and Southern Europe: Opportunities or Competition?

Helena Marques

Department of Economics, University of Newcastle upon Tyne

This document is the technical annex to the full paper "Trade Similarities between Eastern and Southern Europe: Opportunities or Competition" which is available separately.

Data and Indicators

The database used was extracted from the United Nations' *International Trade Statistics Yearbook*. The countries that make up the sample are divided into three blocs: Southern Europe (Greece, Portugal and Spain), "first wave" Eastern Europe (Czech Republic, Estonia, Hungary, Poland and Slovenia) and "second wave" Eastern Europe (Bulgaria, Latvia, Lithuania, Romania and Slovakia). The period covered is 1990 to 1998, except for countries for which data are not available for the whole period. This happens because some of these countries came into existence after 1990 and thus their data set starts later: 1992 for Slovenia, 1993 for Czech Republic and Estonia, and 1994 for Latvia, Lithuania and Slovakia.

The data used here bears fewer distortions than those used in most previous studies since it refers to the transition and trade liberalisation periods only. Some problems remain, however, since trade data do not control for inflation, exchange rate changes, relative price changes or the trade barriers still remaining in EU-CEEC trade.

In addition, only manufactured products (SITC groups 5 to 8) are considered, since agriculture is subject to the regime of CAP and was not included in the Europe Agreements. The first level of analysis uses 2-digit SITC aggregates in chemicals (SITC 5), traditional manufactures (SITC 6 and 8), and transport equipment and machinery (SITC 7). An analysis at the 3-digit aggregate level follows within these categories, giving special attention to the so-called "sensitive products": chemicals (SITC 5), textiles (SITC 65 and 84), iron and steel (SITC 67).

In order to identify the sectors that offer potential competition or opportunities in South-East trade two indices are computed. The first is the RCA index, initially introduced by Balassa (1965; 1977), and corrected for intra-industry trade by Neven (1995):

$$\text{Intra-industry corrected RCA}_i = \frac{\dfrac{X_i}{X} - \dfrac{M_i}{M}}{\dfrac{X_i}{X} + \dfrac{M_i}{M}}$$

where X_i and M_i are, respectively, exports and imports of sector *i*. Thus this index measures how much larger sector *i*'s export share is relative to its import share; that is, it measures how large the share of sector *i* in a country's net exports is, weighted by the sum of the shares. The index varies between 1 and –1, the former indicating the maximum RCA and the latter meaning a maximum disadvantage. Values close to zero are interpreted as a sign of predominance of intra-industry trade.

The second index used in the analysis is a sectoral version of Krugman's (1991) index of country specialisation given by:

$$K_i = s_i - \overline{s_i}$$

where s_i is the share of sector *i* in the total exports of a country and $\overline{s_i}$ is the average share of sector *i* in the total exports of all other countries in the sample. This means that the index is sample-dependent; that is, if the sample changes then the average share changes and as a consequence the index also changes. It must thus be seen as a measure of relative, not absolute, specialisation.

Krugman's index of specialisation is an entropic measure of concentration (or dispersion) around a mean and varies between between -1 and 1. A value close to zero indicates that a country is as specialised in sector *i* as the average country in the

sample. A value close to 1 (-1) means that a country is a much stronger exporter (importer) of sector i than the average country in the sample, so that it differentiates itself from the others. In fact Krugman's index can be computed from either production or trade data. Though the latter allows for greater disaggregation and is more easily available in a standardised way, especially for the East, care needs to be taken in interpreting its values, as trade flows are only an indirect measure of the underlying production structure. The same applies to RCAs.