

# Export Catching-up in the Mediterranean Countries: Long Term Trends and Prospects

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Late industrialization involves structural changes, from agriculture to manufacturing, then within the manufacturing sector a transformation from labor-intensive towards more skill and technology intensive industries. While data on manufacturing structures remain difficult to collect and to compare, especially in Developing Countries, data on international trade are more easily available. It is currently believed that more skill and technology intensive manufacturing exports are associated with greater development performances of exporting countries: They imply higher technical capabilities, deeper industrial linkages, more rapid diffusion of technical change; i.e. higher productivity levels.

A lot of research has been devoted to the measurement and comparison of the technological intensity of exports for different countries over time (Eurostat; Lall 1998, 2000; OCDE 1988, 1992; ONUDI 2002 UNCTAD 1993, 1998). However products classifications based on technology have limitations. Such classifications rely on available indicators of technological activity in manufacturing and on author's knowledge and ranking of technologies at a given time period. Thus, products or industries technology characteristics are time-dependant and the ranking of specific products vary over time. In the early 1980's, Color TV set manufacturing or computer assembling were ranked as « high tech » activities in South-Korea and Taiwan. But ten years later they have become « sunset » industries. To sum up technological based classifications of exports are not relevant to analyze long term structural changes or catching-up processes.

To solve this difficulty, this paper proposes a method of comparison of export quality between countries that is not based on industrial data but only on the structure of the world trade (section 1). We call it an indicator of Export Catching-Up, *ECU*. Section 2 analyses *ECU*'s change in the Med countries over the 1967-2003 period and compares it with change patterns in other emerging countries, at a relatively aggregate level (48 manufacturing industries). Section 3 relies on trade data at a more disaggregated level (SITC 4-digit level; 778 items) to identify manufacturing export niches in the Med countries. On the basis of these results, we discuss trade structure prospects for the region.

## 1 / Methodology

The construction of *ECU* is based on the idea that a manufacturing export is more advanced the higher the average income of its exporter.

The export structure of a country is an indicator of its productivity level: In a free-trade world, the products exported by the richer countries – i.e. the higher wages countries - will be associated with the highest productivity levels; Otherwise these products would not be competitive on the world market. The productivity advance of the richest exporters allows them to remain trade competitive, despite high labor cost. Industry studies inform us on the various sources of such productivity advance: innovation and more advanced technology, capital-intensity, infrastructure, agglomeration economies ... However, for a late-comer, the challenge is always the same: to reduce the productivity gap with the leading countries.

*ECU* measures the gap between the productivity level of a country's exports and the productivity level of the most advanced country. Thus, *ECU* is an indicator of the "quality" gap between two countries export structures; The larger the gap with the leading country, the more backward the

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<sup>1</sup> This paper is based on a research conducted for the FEMISE Euro-Med network on *Structural Change in the Mediterranean Economies*.

export structure. In a long term perspective, ECU changes measures the speed of the catching up process of the country's exports.

ECU is calculated in three steps, following a method suggested by Kwan (2002) in the case of intra-Asian competition on the US market. First, at the product level, we calculate a product quality index for each product as the weighted average of the GDP per capita of the exporting countries. It measures the "GDP value" of each product and, for product "i", we term it  $GDP_{product\ i}$ .

$$GDP_{product\ i} = \sum (GDP\ per\ capita_{country\ j} * X_{ij}/X_{iw})$$

With  $X_{ij}$ , country "j" exports of product "i", and  $X_{iw}$  the total (world) exports of product "i".

The second step involves calculating a country ECU value for each exporter to measure the average level of its export structure, based on the assumption that the larger the share of high quality products in the country's export, the more advanced its export structure. Thus, for a country "j":

$$ECU_j\ value = \sum (GDP_{product\ i} * X_{ij}/X_{tj})$$

With  $X_{tj}$  the total exports of country "j".

Then, we obtain  $ECU_{country\ j}$  by calculating an index that ranks each country between 0 and 1

$$ECU_{country\ j} = [ECU_j\ value - Min\ ECU\ value] / [Max\ ECU\ value - Min\ ECU\ value]$$

With "Min ECU value" as the lowest level of ECU value in the world, and "Max ECU value" as the highest.

Very recently, a similar method has been used in a few studies to measure and discuss export achievements of various countries (Lall 2005; Hausmann, Hwang and Rodrik 2005; Rodrik 2006), in a comparative and static perspective. But, so far, the ECU has not been used in a dynamic perspective, to analyze the long term catching-up process of late-coming countries or changes among the hierarchy of world exporters.

## **2/ Export catching-up process in Mediterranean Countries: A comparative view**

A matrix structure (product/country) of world trade is needed to compute ECU for each year. The CHELEM-CEPII international trade database offers such a matrix since 1967, with a standardized product classification for manufacturing.

Based on these trade data, cross-country comparisons at the world level show, as it could be expected, that ECU is firmly correlated with the income level.

Among the developing countries, ECU has increased and is converging in Latin-America and East-Asia during the 1967-2003 period, despite different initial levels. ECU's trends in Med countries show a very different picture. In Morocco and Tunisia the indicator has not increased since 1967. On average its 2003 level is under its 1967 rank. In the Med region, Israel is the only country where there is a significant progress during the period; although Turkey and Egypt have relatively strengthened their rank.

Furthermore, while increase in the quantity of exports (X/GDP) is strongly associated with increase in the quality of exports (ECU) in Developing Asia, quantity and quality of exports do not converge in several Med countries, where export growth is associated with a fall of ECU.

## **3/ Export niches and trade diversification in Mediterranean Countries: A disaggregate analysis**

To check whether the previous trends hide a process of export diversification at a more disaggregated level in the Med countries, the research then focuses on the manufacturing export niches, excluding the Textile-Clothing industry. The analysis is based on the ITC Comtrade data base for 1994 and 2003. In the case of the Med countries, the main findings are:

- The number of manufacturing export niches has remained stable during the period. However the share in total exports has increased everywhere, except in Jordan;
- The export niches demography shows that the contribution of niches creation to the expansion of exports is very low;
- The growth of niches exports results from an increasing specialization;

- The lion's share of this export growth comes from an increase of their market shares in the European market, whereas there is no competitiveness gain on the world market;
- Intra-Med competition is dominant on the European market; While the degree of competition with East-European and Asian exports is low.

The analysis at the disaggregated level clearly confirms the absence of any export diversification process in the manufacturing sector during the period.

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