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Economic Integration and Cross-Country Inequality: the European Experience

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Economic Integration and Cross-Country Inequality: the European Experience

by

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Introduction

Based on the European experience, I wish to make three points concerning the effects of economic integration on cross-country inequality:

A. Accession into the EU has always been beneficial to acceding countries.

B. This convergence has not been uniform within countries. National convergence has been coupled with a process of domestic divergence in regional incomes.

C. The convergence of all the European countries to the mean has had the international effect of widening the gap with respect to the neighbors still outside.

Economic integration has always fostered faster growth in the lower income, acceding countries thus inducing a remarkable convergence at the national level. In this respect, economic integration has indeed been successful.

However, the faster growth rates associated with the convergence process have not been uniformly distributed within the countries. At the national level, domestic inter-regional inequalities have increased. The most dynamic regions appear to have been the main beneficiaries of the opportunities generated by economic integration. It follows that a vigorous European regional development policy is still indispensable if regional polarization is to be avoided.

The success of economic integration has deepened the gap between the EU and the neighboring countries. A large, rich island surrounded by poor countries is not a viable political scenario. In addition, such extraordinary differences in standard of living are an irresistible incentive to migration by all means, legal and illegal. Development strategies have to go well beyond the strict EU political borders. Opening the EU domestic market for agricultural and textile products from neighboring associate countries seems the natural step to take.

The rest of this paper is devoted to the substantiation of these three points.

A. Benefits from accession to the EU

Accession into the EU has always been beneficial to acceding countries. Growth rates of incoming countries have always been at least as high as the average EU growth rate and in nearly all cases (with the exception of Greece) per capita national incomes have significantly approached, if not surpassed, the average EU level. There has been an effective national convergence within the EU.

Table 1: Countries Accessing the EU with income below EU average

	Year of Accession	Income at accession	Income 2001
Ireland	1973	61	122
Greece	1981	69	70
Spain	1986	72	82
Portugal	1986	55	74
Finland	1995	97	102
European Union		100	100

Data Source: European Economy

The good past records are no guarantee that the new EU countries will all undergo a similar convergence process for at least two reasons. First, the gap in per capita incomes is now larger than ever before. Second, the total population of the group of countries that have recently joined the EU amply exceeds the population of Spain and Portugal, the largest previous accession.

B. <u>The regional distribution of the accession benefits</u>

The impact of accession on interregional inequality in Europe has had no clear sign. Table 3 clearly indicates that there has been little change since 1977.

Table 3: Evolution of EU regional inequality (Theil, c=0)

	Theil
1977	0,032
1980	0,033
1985	0,035
1990	0,034
1995	0,032
2000	0,032

Data source: REGIO

We can exploit the additive decomposability of the Theil index of inequality to uncover some interesting processes below the stability of interregional inequality. These results are presented in Table 4 and depicted in Figure 1.

Table 4: Decomposition of EU regional inequality into between and within-country inequality components (Theil, c=0)

	Theil	Between	*Within*
1977	0,032	0,016	0,016
1980	0,033	0,017	0,016
1985	0,035	0,019	0,016
1990	0,034	0,016	0,018
1995	0,032	0,009	0,023
2000	0,032	0,007	0,025

After the accession of Portugal and Spain in 1986, we can observe a remarkable convergence in national per capital incomes. This process goes hand in hand with a parallel increase in interregional inequality within the EU countries.

The diverging paths of between and within-country inequality suggest that the national convergence has been driven by a strong impact on the most dynamic regions of the accessing countries. The more retarded regions appear not to have reaped any significant benefit from the enlarged market. This has, on the average, widened the gap between poor and rich regions within the nations.

Figure 1: Theil decomposition into components 1977-2000

Note: The 1995 break corresponds to the change in the methodology followed by EUROSTAT.

One possible explanation for the divergence within countries might be the acceleration of a process of sectoral specialization. We should expect that free factor movement triggered by the unification of the markets should equalize the *marginal* returns to all factors, sectors and regions. Notice that this does not mean that the *average* returns should be equalized as well.

Regions specialized in agriculture, for instance, will have lower average return than services, even if both have the same marginal return. Hence, the region-specific sectoral mix may explain the observed inequalities in per capita (average) income.

Drawing from Esteban [2000], we observe that empirical evidence appears to contradict this potential explanation. Interregional differences in per capita income depend on productivity differences across the board. The variations in sectoral specialization have a very minor contribution.

Table 5 summarizes the empirical findings in Esteban [2000]. We observe that across the board differences in productivity account for more than 70 percent of the variance in interregional per capita incomes. The specific industry mix of the regions explains merely 14 percent of the variance. The rest is to be imputed to the covariance, i.e. to regions being specialized (not) in the sectors with higher (lower) differential productivity.

Table 5: Share on total variance in regional per capita incomes by components, 17 sectors. 1986

Industry mix	Productivities	Covariance
0,1416	0,7037	0,1547

Data source: see Esteban[2000]

Let us sum up our results on the regional impact of economic integration. We have first observed that the seemingly neutral effect on regional inequality hides a rapid national convergence coupled with a rise of divergence within the national borders. The increase of within-country regional inequality cannot be explained by an eventual process of sectoral specialization triggered by the enlargement of the markets. We find instead that the fact that some reasons do well while others do not is due to productivity differences that go across the board. It follows that EU regional development policies are now as indispensable as ever. These policies should aim at factors that uniformly enhance regional productivity. Infrastructures, communications or human capital are obvious examples.

C. Widening gap with the neighbors: the case of the Mediterranean basin

The success of the EU in fostering growth in the joining countries has had the international side effect of widening the gap with respect to the neighbors still outside.

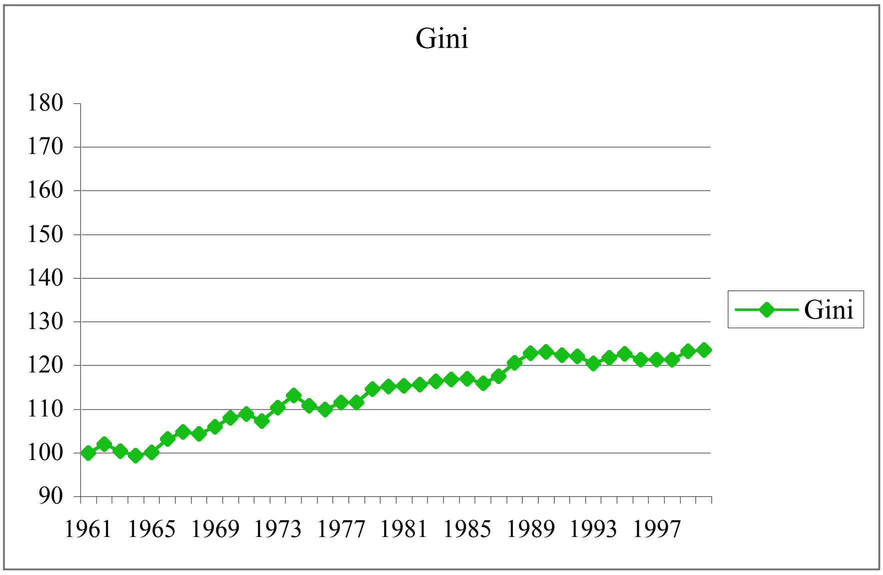
We shall focus on the dynamics of national per capita income inequality across the Mediterranean basin in the period 1961-2000, based on the World Penn Tables. The countries considered are: Algeria, Egypt, France, Greece, Israel, Italy, Jordan, Morocco, Spain, Syria, Tunisia, and Turkey.

As we shall now see, over the past four decades the Mediterranean countries have converged towards two different poles –rich and poor— more and more neatly defined and splitting father away from each other.

In order to examine this pattern of development we shall use a new analytical tool: the polarization index. Polarization indices try to capture the breaking of a distribution into "clubs" of countries/regions, displaying high similarity within the club and market dissimilarity across clubs. One can thus have decreasing inequality –because all the members of a club become more similar to each other— with increasing polarization. Hence, it is polarization, rather than inequality, the indicator that better captures the emergence of clusters with opposing interests leading to eventual conflict.

We start with the evolution of inequality over these four decades. In Figure 2 we plot the Gini index of the distribution of national per capita incomes of the Mediterranean countries.

Figure 2a: Inequality among Mediterranean countries



Over a period of forty years inequality has increased by less than 25 percent. This increase has essentially taken place up until the end of the eighties. The degree of inequality has remained stable there since.

Let us now contrast this result of a moderate increase in inequality with the dynamics of polarization.

We shall use the measure of group polarization characterized by Esteban and Ray [1994] (see also Duclos, Esteban and Ray, 2004).[1] This polarization measure can be written as:

$$P(p,y)=\sum_{i=1}^{n}\sum_{j=1}^{n}p_i^{1+\alpha}p_j\left|y_i-y_j\right|,\ 1\le\alpha\le1.6\,,$$

where the population has been grouped into n clusters and y_i and p_i are the representative income and relative size of group i, respectively.

For the current analysis we have grouped the twelve countries in two groups –"rich" and "poor"— taking the Mediterranean per capita income as the dividing line.[2] In this sense, we are measuring the degree of bi-polarization.

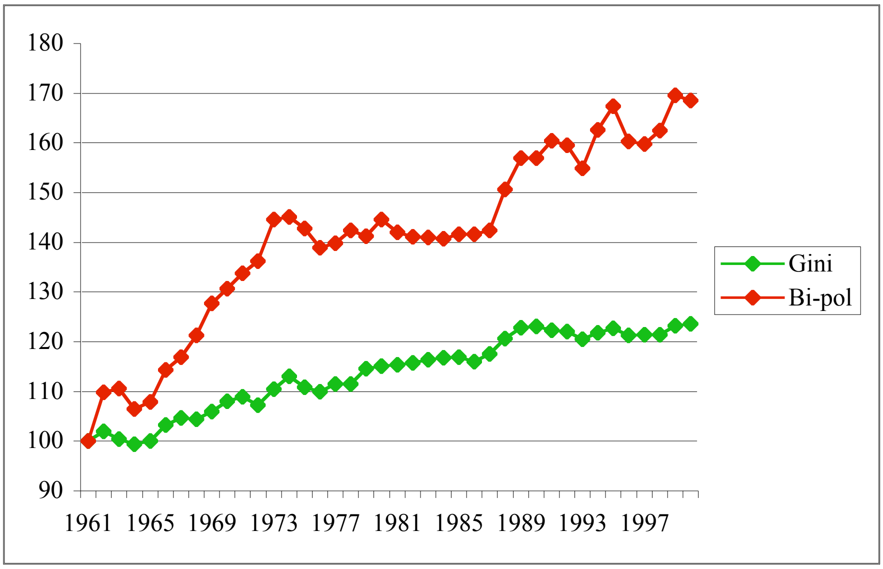
In Figure 3 we plot the measure of polarization. The contrast with the evolution of the degree of inequality reveals two facts. In the first place, polarization has experienced a dramatic increase over these forty years. In

[1] The interested reader can find an intuitive presentation of this polarization measure in Esteban [2002].

[2] I have also tested the alternative grouping into three clusters, adding an intermediate middle group.

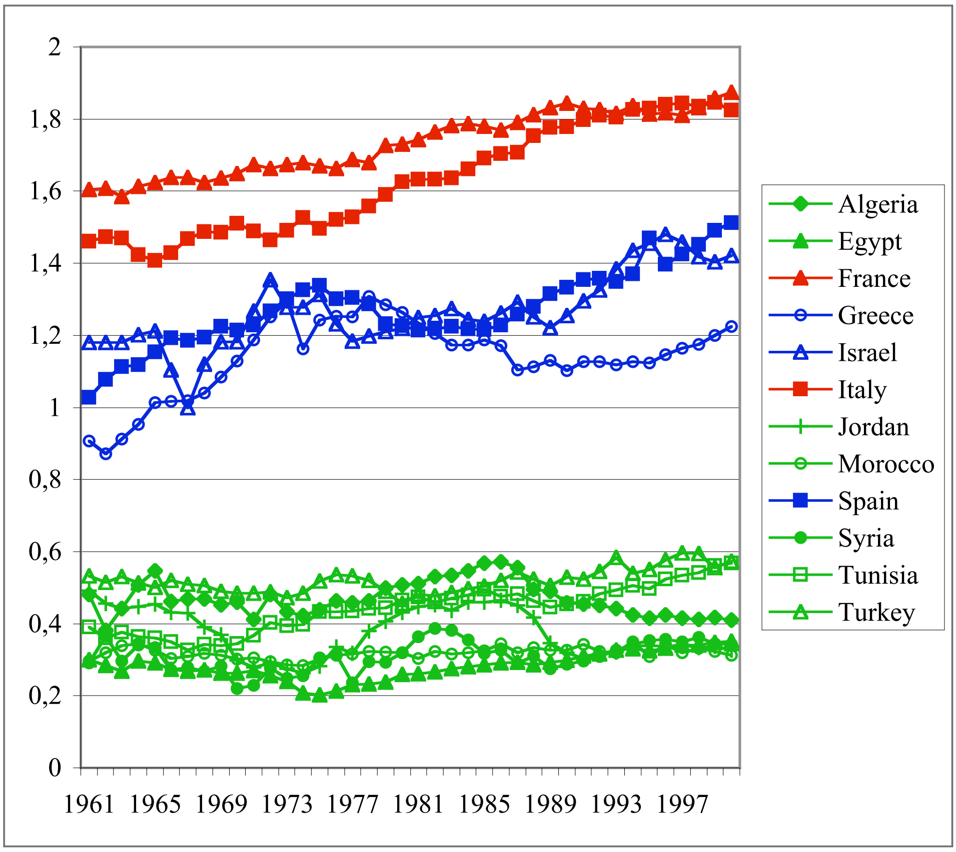
spite of the mild variation of inequality, the polarization index reveals a significant process towards a sharp clustering in the Mediterranean basin between rich and poor countries. Secondly, the decade of the nineties while keeping inequality constant it has witnessed a very rapid increase in bi-polarization.

Figure 3: Polarization and Inequality among Mediterranean countries



In Figure 4 we plot the per capita incomes of the twelve Mediterranean countries for the entire period. In every year we normalize the incomes to the average Mediterranean per capita income. It can be readily visualized that the group of countries that were already relatively richer at the beginning of the period are even richer at the end and more similar to each other. In contrast, the group of poor countries has remained below the 60 percent of the Mediterranean average for the entire period. The two types of countries have come farter apart while becoming internally more similar. This is why bi-polarization has experienced such a remarkable increase.

Figure 4: Relative per capita income in Mediterranean countries, 1961-2000



At the beginning of our period of study the Mediterranean region was characterized by extreme differences in per capita incomes among countries. The 6-to-1 ratio between the two extremes (France and Morocco) was paved by a sequence of countries never distant more than 46% from each other. In spite of the enormous distance between the extremes each country had another country leading ahead at a "reachable" distance. By 1998 the landscape is substantially different. The gap between the extremes has even increased. The essential change however is that now the Mediterranean is neatly split into two separate camps.

Just a few decades ago, Spain, Southern Italy and Greece were not that different from the least developed Mediterranean countries like Morocco or Egypt. Now the distances have grown so much so as to make the gap to look insurmountable. Israel that was twice as rich as Jordan in 1963 is now four times richer. With no stimulating target at their reach, we might be heading to a period of political instability in the countries of the region. It is obvious that the South and South-Eastern Mediterranean countries desperately need international support to foster growth and prosperity, giving to them new horizons worth the effort.

Summary of results and policy implications

- For the case of the EU, all joining countries have benefited from accession.
- Faster growth has come with increased domestic imbalances. Accession to the EU has mostly benefited the regions that already were more dynamic, increasing national inequalities. Hence a balancing regional development policy appears to continue to be indispensable.
- Inter-regional inequalities in income do not appear to have much to do with regional specializations. Rather, low-income regions are less productive all across the board. Hence, development policies have to target –as they presently do— on actions facilitating a uniform increase in regional productivity.
- The success of the joining countries in growing faster has had the side effect of widening the gap between these countries and their neighbors still outside the EU. A broader development policy, embracing the non-EU countries in the immediate environment, seems indispensable.

References

Duclos, J-Y, J. Esteban and D. Ray (2004), "Polarization: Concepts, Measurement, Estimation", *Econometrica* 72, 1737-1772.

Esteban, J. (2000), “Regional Convergence in Europe and the Industry-Mix: a Shift-Share Analysis”, *Regional Science and Urban Economics* 30, 353-364.

Esteban, J. (2002), “Economic Polarization in the Mediterranean Basin”, *Els Opuscles del CREI #10*, CREI, Barcelona.

Esteban, J. and D. Ray (1994) "On the Measurement of Polarization", *Econometrica* 62, 819-852.