

Assessing the Competitive Behaviour of Firms in the Single Market: A Micro-based Approach

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This paper analyses and compares a number of indicators related to the evolution of the competitive behaviour of firms in the Single Market, from 1999 to 2007, in a selected number of both manufacturing and services industries and eight EU countries: Belgium, Germany, France, Italy, Poland, Romania, Spain and Sweden. A novelty of the approach is that the analysis is derived from firm-level observable data, which allow to grasp not only information on the average changes taking place in each industry and across countries, but also the distribution and sources of these changes in terms of individual firms' pricing behaviour and market shares, an information which is impossible to gather in detail from aggregate, traditional sector-level measures. In particular, our sample is constituted by an average of around 330,000 firms observed each year, on which we calculate a simple structural indicator, the Price-Cost Margin (PCM), as retrieved from firm-level balance sheet data across industries and time.

Considering measures for the Single Market as a whole, on average the PCM levels across EU industries have displayed an increasing trend over time (at an annual rate of 1.3 %), but their dispersion, as measured by the coefficient of variation, has indeed been decreasing (at an average annual rate of -2.4 %). The latter signals that a process of quality upgrading induced by dynamic efficiency considerations is in place across European industries, while at the same time the overall dispersion of the PCMs of these industries is being reduced, in line with the theoretical priors of a functioning internal market where important reallocation forces are at play.

Distinguishing between industries operating in eurozone countries vs. other countries, we see that the former have experienced a much smaller increase of their PCM over time (an average increase of 0.8 % vs. 2.3 % for industries within non-euro area countries), thus ending up with an average PCM over the considered period of 20.8 %, that is five points smaller than the PCM of industries operating within non-eurozone countries (25.8 %). In terms of dispersion, the coefficient of variation of PCM across industries in the euro area is also significantly smaller (.97 vs. 1.72), and, most interestingly, it displays a clear and significant downward trend (-3.4 % per year), while the trend in the PCM dispersion of industries belonging to non-euro area countries is not significant. As a result, the entire reduction in price dispersion across the Single Market is essentially due to the contribution of the eurozone countries.

Splitting our dynamics before and after the introduction of the euro (2002), we observe that, for those countries which were about to enter the monetary union, the competitive shock entailed by the single currency has limited the increase in PCM *before* its introduction, with many industries experiencing a reduction in profitability. Once the euro has been introduced, however, industries in the euro area have started to experience slightly upward changes in PCM, again possibly due to

phenomena of dynamic efficiency stimulated by the higher competitive pressures operating in the single market.

Looking at a more detailed evidence by industry and country, after having assessed the robustness of the balance sheet-based PCM against other more sophisticated methodologies (Roeger, 1995), we have decomposed the PCM index in order to explore the dynamics of the firms' pricing strategies vs. their market shares, as well as the impact of entry and exit. Such an analysis is carried out for three 'prototype' countries: France for the Euro area, Sweden as a EU-15 non Euro area country and Poland, a new member state formerly under transition. The PCM decompositions are reported and discussed for the years 2000 and 2006, in order to grasp the effects of the adoption of the euro and the accession of the new member States to the EU. In general, we find a general trend towards lower PCMs in manufacturing in France, while services have a less clear trend; a more or less homogeneous pro-competitive effect in Sweden; catching-up dynamics in Poland, with a process of quality upgrading leading to PCMs not necessarily decreasing. When overlooking the entire range of PCM decompositions for every countries and years, we also find a very high deal of heterogeneity across industries and across countries. That points to a competitive behaviour of firms in the Single Market which is affected not only by industry- but also by relevant country-specific factors.

These findings can be validated by looking at a novel indicator of competition, the Relative Profit Difference (RPD) as proposed by Boone (2008): the basic idea is that more competition should reallocate profits towards more efficient firms, i.e. relative profit differences should widen following an increase in competitive rivalry. Thus, in general, relatively more efficient firms should make relatively higher profits the more competitive the industry, compressing the profits of relatively less efficient firms. Looking at the indicator across countries, we find results consistent with the ones detected when looking at PCM decompositions.

Combining the information provided by the PCM decompositions and the RPD-related indicators it is possible to develop, for every industry/country pair, a number of screening tests for market functioning based on the overall divergence of the PCM indicator, its increases and its persistency over time, and the dynamics of the RPD indicators. We find that Romania and Poland show a certain lack of convergence of the PCM indicators to the EU average. The same finding is true when considering long-term increases in the PCM indicator. In the Euro area, industries with diverging PCMs are relatively less present and in general concentrated in the services sector, but such features do not tend to be associated to problematic changes in competition as proxied by our RPD measure. When considering long-run increases in PCMs, instead, the feature is quite present across both manufacturing and services industries across all the considered countries.

Finally, based on these general screening tests, we have performed a detailed analysis of the competitive behaviour of firms in three selected industries across countries: NACE 159 (beverages), NACE 341 (car industry) and NACE 522 (distribution of food), comparing our results with the information obtained through the use of a standard measure of competition, the Herfindahl index. We feel that such a narrow industry-specific approach, combining different indicators measured starting from firm-level data across countries and over time, is the most suitable complement to be used in future analyses of product market functioning.