Intra- and inter-national trade of EU regions. Implications for economic growth

The role of trade openness in promoting growth has always been one of the most important and debated economic issues. In recent decades, a growing trend towards open economies has been observed, with the gradual disappearance of all forms of (even partial) autarky in all parts of the world. A number of theoretical studies have shown how, in addition to other factors that are often pillars of development and growth – geography, culture and institutions – trade, and in particular international one, plays an important role in growth through faster technological progress and better allocation of resources (Acemoglu, 2009), as well as a rapid and efficient flow of ideas and integration represented by knowledge spillovers and positive externalities (Grossman & Helpman, 2015; Haberler, 1988). Indeed, this tendency can be seen in the way organizations of all kinds – from the International Monetary Fund to the Organization for Economic Cooperation and Development and from the World Trade Organization to the European Union – develop and implement strategies that recognize how greater openness leads to greater economic growth. Despite this, scholars have not yet reached a consensus on the matter, and mixed and not always consistent results have been produced. As regional economists, we believe that such indecision may be due to the large geographical scope that one is forced to deal with when focusing on countries rather than regions.

The issue of the growth-trade nexus has, in fact, been extensively analyzed at the theoretical level by different schools of thought – from the support of the neoclassical trade theory to the non-recognition of the neoclassical growth theory, from the doubt expresses by the new trade theory to the support of a positive relationship by the new growth theory – and at the empirical level, both at the national level, as surveyed by Singh (2010), and at the regional level, as reviewed by Resmini (2020). Singh (2010) analyses how thinking about the effects of trade on growth has changed from a century ago, when the two were negatively correlated, to the present day when, instead, a positive relationship is measured as a result in empirical studies that show a convergence of per capita income and TFP between countries (Dollar, 1992; Edwards, 1998; Grossman G M & Helpman E, 1991; Lee et al., 2004; Sachs & Warner, 1995) and a joint role of trade and institutions in foster economic growth in the long run (Dollar & Kraay, 2003). The exception is represented by a work of Rodriguez & Rodrik (2000), which, while acknowledging a relationship between the two variables under consideration, casts doubt on the reliability of the indicators used by other scholars to measure trade openness. Although these empirical works shed light on the existence of a clear influence of the reduction of trade barriers on economic and productive performance, they refer to national dynamics, which are supported by a greater availability of reliable data and easier observation of the phenomenon than the regional dimension. Despite these difficulties, Resmini (2020)review presents a number of empirical studies that analyze the phenomenon from a regional perspective, seeking answers to questions about regional openness to international trade and its relevance for economic growth, independent of national choices. Here, there is a general trend that confirms the existence of a positive relationship between openness and growth, regardless of the geographical area considered, the methodologies used and the way in which openness itself is measured. More specifically, in his study of Chinese provinces, Sun et al. (1999) found a positive effect of export expansion on the efficiency of manufacturing firms. Leong (2013) confirms this relationship by analyzing the impact of export processing zones, as a proxy for trade openness, on economic growth in Chinese and Indian provinces between 1970 and 2003. At the European level, Buch & Toubal (2007), carried out a work on the German states by developing at the regional level the process proposed by Frankel & Romer (1999) of creating an instrumental variable to estimate the impact of trade on growth, showing a positive contribution to GDP per capita and economic development. Another deepening of Frenkel and Romer approach is proposed by Gambardella et al. (2009), who uses instrumental variables to obtain a broader measure of openness that goes beyond the import-export dualism and shows a more significant impact on European regional performance.

Other empirical examples present the use of a composite index to estimate the effect of openness on growth, including trade, FDI and regional integration (Polasek & Sellner, 2013) and the consideration that what really matters is the nature of trade linkages (Boschma & Iammarino, 2009). A closer look, then, reveals that there is heterogeneity in the way the measure of openness is approximated and that no empirical study has used data on trade flows at the European regional level.

In this paper, we use the Joint Research Committee's own RHOMOLO database to investigate how trade affects growth when it is integrated in a standard Solow model, consisting of GDP, capital stock and human capital. RHOMOLO database, which considers regional trade flows at the NUTS2 level for 2013, allows us to distinguish trade with other domestic regions from trade with other countries that belong to the European Union and from the rest of the world. This distinction seems immediately necessary when one acknowledges that about 60% of out-of-region trade in Europe originates from, or is directed to, other regions that belong to the same country. This tendency to trade with regions belonging to the same country is also found in Santamaría et al. (2023), where a strong 'home and country bias' is identified, resulting in only 19% of regional trade being with a foreign region. The determinants of these figures, according to this study, are several factors, including geographical and governmental distance. The objective of this paper is to investigate, through an empirical analysis based on the use of multiple linear regression, the relationship between economic growth, measured as the growth rate of GDP per capita, GVA and TFP - our dependent variables - and a set of independent variables, including are those related to trade flows from RHOMOLO. Our dataset consists of a cross-section of data from 238 regions in 27 European countries, covering the period from 2013 to 2019 (with 2021 used for robustness testing). In addition to variables on inward and outward trade flows, it includes variables measuring physical capital, human capital, the level of institutions and measures of inequality, among others.

In particular, our starting model is characterized by the growth rate of GDP per capita as the dependent variable and four independent variables such as GDP per capita at time zero (2013), capital stock per employee, human capital, and access to the European Union. From this model, a series of regressions are developed in order to analyze, in particular, the role of trade, with its ramifications, on a region's economic growth.

The results of these analyses, however, indicate that, in terms of influence on economic growth, not only is intra-national trade not as favorable to growth as trade with other European and non-European regions is, but that it may even be detrimental to the region's economic welfare. Even trade outside one's own country does not lead to homogeneous results in terms of growth effects. Indeed, our analysis shows that trade with other regions outside European countries seems to have a greater impact than trade with members of the European Union. These results are robust when import and export are analyzed separately and when the temporal range is extended, even covering peculiar times such as throughout the pandemic acute phase in 2020 and 2021.

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