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Abstract. The industrial landscape of the U.S. has undergone major changes in recent decades. This process has been driven by a variety of factors, including technological change, globalization, and shifts in labor demand. In this paper, we adopt a dynamic approach to analyze the principal characteristics of this process over the time period 1969–1995 among the twenty two-digit SIC industries. Two main conclusions emerge. First, we find that, in general, industries are tending to reduce their degree of concentration. Secondly, the classification of industries according to different economic criteria allows us to test the degree of compliance with various theoretical propositions and to detect relevant empirical regularities.

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1. Introduction

The spatial location of industrial activity, which defines a particular economic landscape at any given time, is by no means a static reality. On the contrary, it is subject to numerous changes and influences, making it a variable and dynamic temporal phenomenon. One typical example that supports this affirmation is the U.S., the largest industrial country in the world. The U.S. industrial belt emerged towards the last third of the 19th century and continued to be the nucleus of U.S. industrial activity until World War II. Geographically speaking, this sector occupies the Northeast of the country, and includes states which form part of New England, the Midwest, and the Great Lakes areas.

However, the great transformation that the sectoral distribution of labor has experienced in developed countries during the last three decades, caused...
By a notable growth of the service sector of the economy, has generated a slump in the percentage occupied by U.S. industrial employment (24.3% in 1972, 19.8% in 1983 and 17% in 1992; data taken from Hayter 1997). This has undoubtedly had consequences for both spatial location, and the sectoral location of a large number of workers. Indeed, there has been such an alteration in the U.S. industrial landscape that authors such as Sua´rez-Villa (1992) and Sua´rez-Villa and Cuadrado Roura (1993) have defined this phenomenon as a process of Regional Inversion, in which emerging areas such as Florida, Texas or California (the Sun Belt) are growing to the detriment of the old industrial belt (the Frost Belt).

Furthermore, as Stevens and Treyz (1986) point out, the different evolution of industrial employment in each zone can be explained to a large extent by the different regional industrial mix. Consequently, the changes that have occurred should be analysed from a perspective that not only considers the aggregate manufactures, but also distinguishes between different industrial sub-sectors, given that the foreseeable types of behaviour will not be reducible to a single pattern.

The earlier-mentioned and, indeed, other studies make clear that the spatial distribution of U.S. industry has undergone major changes. The majority of these studies are of an essentially descriptive nature. Against this background, and following the approach of more analytical studies, such as those of Kim (1995) and Ellison and Glaeser (1997), we think it is of value to carry out a more rigorous study, using the appropriate statistical instruments, of the most notable changes that the U.S. industrial landscape has passed through in recent decades.

To that end, we will take the state as a geographical reference unit and analyse the evolution of the industrial sector in the U.S., desagreggated to a degree of two-digit SIC (20 industries), during the period 1969–1995. As has already been mentioned, the phenomenon is essentially dynamic, thus a methodology is required that can properly capture it. Therefore, for regional data that measures the degree of implantation of a sector in a given zone, we will use the approach proposed by Quah (1993a, 1996a) as an alternative to the so-called $s$-convergence and $b$-convergence. This is a dynamic method which explicitly gives account of movements between periods. Therefore, it provides a vision of what is the future evolution of the variable being analysed, as well as a description of the total sample, and not just that of the average element.

A first analysis is based on the study of estimated density functions and certain key statistics, in order to determine whether the industries concerned have increased or diminished their degree of concentration during the twenty-seven years of the sample period. In this regard, we consider that an industry is concentrated when certain states, not necessarily geographically linked, monopolise the majority of the workforce of that sector, and we find that eleven out of twenty industries have increased their dispersion level, while only one has moved in the opposite direction.

Secondly, the law of movement between periods is modelled by means of a Markov chain. This approach makes it possible to obtain the corresponding transition matrix and Shorrocks' (1978) index, which measures the degree of sector mobility, that is to say, how variable its economic landscape is. This information allows us to test the veracity of certain theoretical propositions, as well as to describe various patterns of stable behaviour that are explained in detail in the empirical application.