

Corporate Growth and Industrial Structure. Some Evidence from the Italian Manufacturing Industry*

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1 Introduction

In this work we report preliminary results of an investigation on industrial dynamics based on a decade of micro longitudinal data from four Italian industries — pharmaceuticals, primary metals, machine tools and textile — chosen as representative of quite diverse production technologies and learning modes. Here we begin addressing two sets of issues concerning (i) the shape of the size distributions and their possible inter-sectoral differences, and (ii) the characteristics of growth dynamics.

A classic reference, when dealing with the statistical properties of firm growth, is the so-called “Law of Proportionate Effect” (or “Gibrat Law”) (Gibrat, 1931) entailing process of stochastic growth uncorrelated with size and basically driven by several small idiosyncratic events¹. It represents a sort of “null hypothesis” regarding the dynamics. And it is an hypothesis that makes evolutionary economists rather uncomfortable, in that it seems at odds

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¹For discussions, following the pioneering Ijiri and Simon (1977), cf., among others, Brock and Evans (1986), Boeri (1989), Sutton (1997), Geroski (2000), Dosi et al. (1995), Marsili (2001).

both with several pieces of microeconomics evidence highlighting long-standing differences in technological and organizational competences across firms, and also with a notion of a competitive process systematically selecting within such population of heterogeneous firms².

While the overall evidence on “Gibrat Law” from the literature, often based on not-too-good data, is rather mixed (Dosi et al., 1995; Sutton, 1997), in Bottazzi et al. (2001) one finds, in the case of a panel including the world top pharmaceuticals firms, a rather rich structure in the statistical properties of the growth process, displaying, among others features, **(a)** “fat tails” in the distribution of growth shocks with (relatively rare) “spurs of growth” and **(b)** a significant autocorrelation of growth rates over time. An obvious issue regards the generality of such findings, which we shall indeed address in the following. Are the foregoing properties dependent upon the particular features of learning and competition of the drugs industry or, conversely, are they rather general characteristics of industrial dynamics? And, even if the latter hypothesis held true, to what extent are such characteristics influenced by industry-specific factors?

Moreover, size as such might not be the best variables upon which to condition growth events. Rather, it is much more in tune with an evolutionary idea of heterogeneity *cum* market selection³ to search for proxies of relative degrees of firm “competitiveness” and investigate their impact on firm growth profiles. This is what we shall also do below, using labor production as proxies for production efficiencies.

In Sec. 2 we briefly describe the database and the variables under scrutiny. In Sec. 3 we discuss the evidence on size distributions, the distribution of growth shocks and their possible autocorrelation. Finally, in Sec. 4, we analyze the relationship between relative labor productivities and growth profiles.

2 The Database

This research draws upon the MICRO.1 databank developed by the Italian Statistical Office (ISTAT)⁴. MICRO.1 contains longitudinal data for a panel of several thousand Italian firms

²Incidentally note also that violations of Gibrat-type process of growth based on i.i.d. shocks are also implied by equilibrium models of industrial dynamics such as Jovanovic (1982) and Ericson and Pakes (1995): cf. Pakes and Ericson (1998)

³The evolutionary literature on industrial dynamics is rapidly expanding. Here, however, let us just mention two of the “seeding classics”, namely Winter (1971) and Nelson and Winter (1982)

⁴The database has been made available to our team under the mandatory condition of censorship of any individual information.