Dr. Verdoorn, in this field, may prove to have played much the same role as Pareto in the field of income distribution. (Colin Clark, 1957)

The ‘law’ that has been given my name appears therefore to be much less generally valid than I was led to believe in 1949. (P.J. Verdoorn, 1980)

Some introductory notes on ‘Fattori che regolano lo sviluppo della produttività del lavoro’

‘Fattori che regolano lo sviluppo della produttività del lavoro’ (henceforth simply referred to as ‘Fattori’) is an article which, although much quoted, has been, perhaps, seldom read. The fact that it was originally written in Italian certainly did not help it to achieve widespread recognition. Indeed, over time, the increasing fame of this paper stands in marked contrast to the lack of knowledge generally available about the author’s personal life.

In chronological terms the very first citation of ‘Fattori’ is actually a self-quotation: Verdoorn (1956a), in his ‘Complementary and Long-Range Projection’, recalled the existence of the ‘rule’ (introduced in his original paper), according to which, over the long period, a fairly constant relation was to be expected between output per worker and the level of production. He pointed out that this relation also implied a constant elasticity of productivity with respect to output, the value of which, as emerged from the examination conducted in ‘Fattori’, seemed to change ‘from industry to industry in different countries between 0.45 and 0.6’ (Verdoorn, 1956a, p. 434). Verdoorn himself suggested that the most adequate theoretical justification for this rule was to be found in the literature on the ‘manufacturing progress function’: namely, in the mechanism whereby an increase in cumulated output gave scope for a greater division of labour. This, in
turn, would help to develop, on the one hand, (static) internal economies of scale, and, on the other hand, (dynamic) external economies of scale – namely, a better skilled labour force and new technological discoveries (Verdoorn, 1956a, p. 434).

The second citation of ‘Fattori’ is contained in the third edition (published in 1957) of The Conditions of Economic Progress by Colin Clark. Apart from a minor error (namely, that Verdoorn’s original paper was not written in English, as Clark stated, but in Italian), Verdoorn’s views were very accurately summarised by this author. Indeed, Clark was able to correctly identify that the theoretical structure on which Verdoorn’s relation is based was the ‘learning curve’. In addition, he empirically attempted to confirm Verdoorn’s value of the elasticity (for the first time since Verdoorn’s own estimates). The outcome of this verification was actually to question the value of Verdoorn’s coefficient of 0.5 and its stability over time. Nevertheless, Clark judged Verdoorn’s discovery to be as important as Pareto’s law on income distribution (Clark, 1957, p. 359).

A few years later, Clark (1962) himself (in a study with H. Frankel and L. Moore) quoted the article ‘Fattori’ again. In a chapter discussing the low growth rate in the United Kingdom – which anticipated the issue developed by Kaldor (1966) in his famous Inaugural Lecture by four years – Clark gave an explanation of the low growth rate of output per worker in British industries. In doing so, he assigned an important role to what he repeatedly referred to as ‘Verdoorn’s Principle’ – namely the rule whereby ‘whenever an industry’s scale of production is enlarged, productivity per man-hour of labour also improves by a factor equal approximately to the square root of the factor by which production has been increased’ (Clark, 1962, p. 39).

The next (and perhaps most authoritative) citation of ‘Fattori’ is that by Kenneth J. Arrow (1962). In his paper ‘The Economic Implications of Learning by Doing’, he noted that Verdoorn, in an essay published in Econometrica in 1956, had applied ‘the principle of the learning curve to national outputs’ (Arrow, 1962, p. 156). Arrow further pointed out that for the empirical basis of the ‘principle’ and also for its interpretation ‘in terms of increasing capital–labour ratios’, Verdoorn had made reference to another of his papers published in 1949.

From that time onwards, and especially after the unexpected fame acquired through the explicit reference made by Kaldor (1966) to ‘Verdoorn’s Law’, ‘Fattori’ has been cited widely. From our own incomplete research, we have found over one hundred references to the paper. However, it was only in 1988 (that is, 39 years from the publication of the original work and six years after the death of its author), that the first English translation by Thirlwall was published (although it had not been authorised by Verdoorn while he was alive). (It is reproduced as chapter 2 of this volume.) The same version was published five years later in the