

Full Industry Equilibrium
A Theory of the Industrial Long Run

by Arrigo Opocher and Ian Steedman

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reviewed by Lefteris Tsoulfidis*

Opocher and Steedman, two influential economists working within the modern classical economic theory, attempt to combine two competing approaches to microeconomics, namely, the neoclassical long-run theory of the firm and the Sraffa-inspired classical version of economics. Both approaches share some common ground and their cross-fertilisation could, arguably, be profitably utilised to develop more sensible microeconomic principles leading to firmer theoretical conclusions of practical significance. Such a synthesis of two approaches, hitherto developing parallel to each other, has not been tried so far and, in this sense, the book is characterised by originality. It is important to stress at the outset that the potential for synthesis lies only in the production or supply (not consumer demand) side of the economy, where the authors lay out the implications of a rigorous long-period point of view. They show, in particular, that there is, generally, no presumption made to the effect that demand for a factor is inversely proportionate to this factor's price, as is commonly assumed in the neoclassical microeconomic analysis currently prevailing in economics classrooms.

The process through which the authors seek to achieve such a synthesis is the method of comparative statics analysis, according to which one starts off with a state of equilibrium and then hypothesises an exogenous change to a variable, such as, for example, real wage (or profit rate), taxation, terms of trade, price of a strategic input (e.g. the price of oil), productivity (total factor), etc. Then the object of study becomes the movement of all relative prices, which, following the aforementioned exogenous event, must change in such a way so as to be consistent with arriving at a situation of zero maximum profits earned by all industries. The authors describe this situation using the Wicksellian term of 'full industry equilibrium' (FIE). The question at issue concerns predicting the size and

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the sign of such price changes by taking into account the inter-industry structure of the economy and the attainment of the final equilibrium status, where there are no net (excess economic) profits. It is noteworthy that FIE differs from neoclassical general equilibrium, since it does not assume consumer preferences or demand decisions associated with them. Opocher and Steedman are two authors with significant contributions to both neoclassical (from a critical perspective) and classical theories and, as such, they are well equipped to also make a meaningful contribution towards bridging these two approaches. To this end, they argue that both approaches would benefit from mutually recognising that they are built upon the key concept of FIE. More specifically, the authors argue that what both classical and neoclassical approaches share is the long-run method of analysis in production. The study is further simplified by stipulating firms' homogeneity and by leaving aside complications arising from economies of scale external or internal to the firm or industry. If we find any difference in the approach of the book from the usual Sraffian one, it is that the focus is on individual industries rather than the totality of industries comprising a national economy. The book focuses on "micro" productive choices and often assumes a zero interest rate. Moreover, in order to make the approach comparable to neoclassical microeconomics, the authors use the standard U-shaped average cost curves, although these are precisely the kind of curves that Sraffa, in his famous (1926) article, found to be inconsistent with the neoclassical requirements of a perfectly competitive firm, while subsequent empirical research at Cambridge in the 1930s showed that in manufacturing, at least, cost curves are mainly characterised by constant returns to scale. Opocher and Steedman seem to apply the methodological principle, i.e., that the worse the circumstances, the stronger the argument used becomes. It is important to note that the neoclassical microeconomic theory, unlike macroeconomics, has pretty much remained the same for decades. In effect, microeconomics, as it emerged in the 1930s, mainly as a result of Sraffa's (1926) article, and as formulated in the 1970s, has not essentially changed to date.

The book is divided into ten chapters, all connected to each other and all aspiring to attain the authors' goal, i.e., to contribute to the formulation of a new and broader, long-run microeconomic approach derived from the cross-fertilisation of two microeconomic approaches moving in parallel to each other. Chapter 1 is about preliminaries and explanations of the FIE, its properties and its connections with both the neoclassical microeconomics and the Sraffa-inspired economic approach.

Chapter 2 presents the neoclassical long-run theory of the firm and explains the underlying structure of relative prices. Some further complications are added to this model, such as the presence of produced (as opposed to primary) inputs and discontinuities in profit-maximising input use. Furthermore, some unexpected behaviour is identified in the movement of the capital-output ratio with changes of the rent-wage rate. The analysis is generalised from single production to more realistic and harder to theorise multiproduct or joint production industries.

The details of the latter more complex case of production are taken up in Chapter 3, where it is shown that, in most cases, joint production may be thought of as a generalisation of the single product case, when we simply assume the presence of a single input. In the simplest formulation, this case bears similarities to the many inputs and the production of single products one.

In Chapter 4 the firm in the industry is placed in competition with other similarly motivated firms over produced and non-produced inputs. The analysis is carried out under the oxymoron scheme of maximum net profits equal to zero. Hence, there is no distinction between profits and the rate of profits, that is, profits estimated on a basis such as invested capital. Apparently, this is another methodological concession made to the standard neo-classical theory, according to which the mere presence of profits is sufficient to attract an inflow of firms until profits become equal to zero. In similar fashion and in an attempt to facilitate synthesis, the authors make frequent use of twice differentiable cost functions and they also rule out possible complementarities between inputs. In other words, the cost functions used in the analysis are assumed to be “well behaved”. All of the above is done in an attempt to facilitate analysis and make the synthesis of the two approaches easier for economists of both approaches to follow. Under these assumptions, two types of shocks are considered: (a) a change in the price of a primary input; (b) a change in the rate of interest. Competition (perfect) leads to changes in the structure of relative commodity prices and, as far as the prices of primary inputs are concerned, it is possible to derive qualitative restrictions within the framework of conventional partial equilibrium analysis. Furthermore, commodity prices react differently in the face of external shocks.

Chapter 5 relaxes the assumption of the well-behaved functions and focuses on primary input use per unit of gross output. The analysis is carried out at the industry level by taking into account inter-industry connections and a positive interest rate. The theoretical analysis suggests that employment coefficients and real wage can be positively correlated. This chapter is supposed to share common ground with the famous capital theory controversies and with the Sraffa-based critique in general, but these connections are not sufficiently explicit. The focus of the chapter is on FIE and the results of comparative statics exercises and not on possible connections to capital theory controversies.

Chapters 6, 7 and 8 extend and further elaborate on the first five chapters, as they examine key applied microeconomic questions, such as price effects of the introduction of a tax, changes in terms of trade, as well as effects of technological change. The answers are often surprisingly different from those derived in standard microeconomics; what is more important is that these answers are derived from a theorisation of the operation of total economy. In Chapter 6 the authors study what the effects on prices are when cost is, for some reason, reduced. The analysis is further concretised in Chapter 7, where price effects of taxation within an inter-industry setting are examined and certain regularities are singled out. The effect of sales taxation on primary inputs is magnified when the presence of produced inputs is accounted for. A uniform sales tax rate is expected to

have quite dissimilar effects on prices; however, we may find a neutral sales tax when it is imposed in proportion to the added value of industries. Not surprisingly, a higher sales tax imposed on an industry does not necessarily imply a higher relative price, because everything depends on the use of the taxed commodity by other industries and the various linkages between industries, not to mention the proceeds of taxation and the way in which these are spent by the government.

Chapter 8 is about the effects of (total factor) productivity on prices, which could be quite similar to those of taxation. However, there is an important difference in that, while taxation is directly observable (and, therefore, it can become a policy variable), productivity is not. The total factor productivity (TFP) growth rate in neoclassical economics is residually determined after subtracting the growth rates of normally employed factor inputs (weighted by their income shares) from output growth rate. The advantage of the FIE approach is that it breaks down the technical change measured by TFP into average primary input prices and distribution. Moreover, FIE price accounting enables identification of trend components of productivity in each individual industry. Lastly, the change in the average primary input price may be broken down to industry productivity change per se and to changes due to other industries. All of these are important in their own right and shed new light on discussions of TFP. Chapter 9 adds a retrospective and prospective view to the whole book and approach. Chapter 10 contains a summary and makes some concluding remarks about possible further research questions.

It is expected that the analysis and findings of the book will attract the interest of neoclassical and modern classical economists who will further use and expand FIE in order to tackle old and new microeconomic questions. The book will be useful to those taking intermediate or advanced courses in microeconomics or economic theory and to those interested in a rigorous formulation of economic problems and answers derived from such a formulation, which can shed further light on controversial issues in economic theory as well as use these answers and results for planning more effective economic policies. Finally, the book might also be useful to those interested in the history of economic thought and developments that have taken place, particularly those of the 1970s.