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978-0-521-03985-7 - Causes of Growth and Stagnation in the World Economy

Nicholas Kaldor

Excerpt

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NICHOLAS KALDOR

CAUSES OF GROWTH  
AND STAGNATION IN THE  
WORLD ECONOMY

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The *Raffaele Mattioli Lectures* were delivered by  
Nicholas Kaldor at the Università Commerciale Luigi Bocconi,  
in Milano, from 21st to 25th May 1984.

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## FIRST LECTURE

## Equilibrium Theory and Growth Theory\*

Since the very beginning, the study of economics has served two purposes, though economists are not always conscious of this duality. One concerned the problem of how in a de-centralised, “undirected” market economy, scarce resources are allocated among different uses in the *right* proportions – in the proportions in which they give the highest satisfaction to consumers as a body – in a specific Pareto sense that no one could be better off with any alternative allocation, without making someone else worse off.

The second object has been to explore the determinants of economic progress – what are the critical factors which make for continued growth, be it through the growth of productive resources or the improvement of knowledge or technology; and how far the results or the characteristic features of “equilibrium economics” (which is the subject matter of the first inquiry) have their counterpart in the second.

The first aspect involves the detailed analysis of the charac-

\* Lord Kaldor introduced his lectures with the following remarks:

It is a great honour for me to be invited to give the Raffaele Mattioli Lectures. Although we lived in different countries, I met Raffaele Mattioli frequently, both in Milan and in Rome, during many trips that I made to Italy after the World War II. We had a common friend in Piero Sraffa, and it was Sraffa who first introduced me to him in Geneva in the summer of 1947 when I had just arrived to be the Research Director of the newly created Economic Commission for Europe (ECE). I and my wife stayed with him in his ‘fattoria’ in Tuscany and we once had a holiday together on Lake Garda, visiting various towns in Northern Italy. He was a very clever man, of great personal charm, and a great collector of books with a special interest in economics books. In the late 1940s, here in Milan, Mattioli collected around him an extremely able group of young men, some of whom, like La Malfa, made important public careers.

Raffaele Mattioli and I also had a common bond between us in that we were both extremely fond of Piero Sraffa, a man of quite remarkable gifts and brilliance and a fascinating person to know. One summer, I was on holiday with Piero Sraffa in Norway, when he was involved in a mountain accident and had to be taken to hospital in Oslo. I telephoned Mattioli who said he would come at once. He did so the next day. For a President of the Banca Commerciale to leave everything to fly to Oslo at a moment’s notice was quite impressive. Mattioli talked to Sraffa in Italian until he became conscious again, so aiding his recovery. I wanted to make these personal reminiscences before I started my lecture.

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teristics of the states of general economic equilibrium, considered as the ultimate outcome of an impersonal and, one might say, unconscious process of coordination of the decisions and actions of innumerable individuals, while the second aims to isolate the underlying forces which cause continued change and development.

It would be mistaken to suggest that this dichotomy is generally accepted among economists – some would regard the two as merely different aspects of answering the same question, and that a comprehensive and fully successful treatment of the first should automatically provide the answer to the second. Others would be conscious that economic laws, unless they are pure tautologies, are not eternal but are conditioned by history – they are relative to a particular stage of human evolution. Adam Smith, whose main purpose was to show the politics of prosperity, was clearly aware that the economic institutions of society are not static but are in a constant state of evolution and the policies and institutions appropriate in certain stages of development may become inappropriate in another. He divided history into four or five separate stages, distinguished by the prevailing modes of production – in much the same way as Karl Marx did in the Communist Manifesto seventy-two years later (though, to my knowledge, Marx never accorded Smith a proper acknowledgement). On the other hand, Ricardo wrote as if he was almost oblivious of history, and he regarded the social divisions, the property laws and the market institutions of early 19th-century England, as if they formed the natural way for organising society. His main concern related to matters that were within, and fully consistent with, that framework, such as his opposition to the Corn Laws which, in his view, benefited a small group in society at the expense of all others.

More recent writers tended to divide the subject between “statics” and “dynamics” where the first part related to almost everything taught in classes and described in text-books, while the second mainly consisted of future work still to be developed. As it happened, the increasingly precise elaboration of the first aspect proved more of a stumbling block than a necessary introduction to the second. I shall employ the term “equilibrium

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theory” for theories dealing with the first aspect, and “growth theory” (for want of a better name) for the second.

Looking at post-war literature – the outpouring of books and articles in periodicals – the so-called “neo-classical” economics continues to occupy the centre of the stage, and most of this work is based on the principles of Walras’ original model of general equilibrium, published over 100 years ago, and its application in special contexts, such as the theory of international trade. In this respect, the post-World War II period meant a retrogression in comparison with the great innovative period of the 1930s when, following Keynes, it looked as if interest in the new “macro-economics” – which in contrast to equilibrium theory operated with empirically derived and empirically refutable hypotheses – might replace the traditional concern with the theory of value. But in fact there was a tremendous growth in mathematical economics which, in the nature of the case, concentrated on exploring the implications of *a priori* assumptions and their logical consistency with no regard as to how this work can be applied to empirically observed phenomena and how it can be made to serve the understanding of observed economic changes. As a recent survey article in the *Journal of Economic Literature* put it, “the equilibrium story is one in which empirical work, ideas of facts and falsifications played no role at all”.<sup>1</sup>

The main purpose of the theory, from Walras down to the most recent crop of Nobel prize-winners, is to specify the necessary axioms (or basic assumptions – they are basic in the sense that they cannot be derived from some other assumptions or from observation) under which an economy will possess a unique set of equilibrium prices, which if established will possess a certain stability in that stochastic disturbances will not cause more than temporary deviations from them. One of these axioms is that prices constitute the sole source of information on which decisions (of purchases or sales) are based, so that the allocation of resources between different uses is solely determined by prices. The core of the theory consists of the demonstration that, given certain properties concerning preferences and the linearity of all

1. Roy Weintraub, “On the Existence of a Competitive Equilibrium, 1930-1957”, *Journal of Economic Literature*, March 1983, p. 37.

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processes of production, a set of prices will exist which “clears” all markets; that is to say, it achieves full coordination between the economic activities of different units (these are normally called “economic agents”, presumably to cover cases in which the unit of decision-making is a family, or an individual enterprise with several owners or controllers and not just a single person) and such a state of affairs is “Pareto-optimal” with each unit’s want satisfaction maximised subject to the level of satisfaction of all other units being given. Also, each “productive resource”, be it labour, capital (whatever that may be taken to mean) or a natural resource (such as a plot of land, or a waterfall, or minerals under the soil), will earn at least as much in their existing use as in any alternative use – hence no one could change their dispositions as a buyer or seller without making someone else worse off in the process.

This result is subject, however, to a large number of restrictive “axioms” which rob it (in my opinion) of any interpretative value. Of a long list, made considerably longer, and more restrictive by a number of mathematical economists,<sup>1</sup> than Walras originally thought them to be, are the following:

1. All resources, whether human or material resources, are taken as given; so are the preference schedules (or preference maps) of their owners.

2. All technical processes of production (capable of transforming the crude products of nature into finished goods) are given; all these processes are linear and homogeneous (i.e. the general rule of constant returns to scale applies).

3. Prices are given parametrically to all agents, i.e. there is perfect competition in all markets, on both the seller’s side and the buyer’s side.

4. There is no time dimension. The decision to produce (and actual production), and the decision to consume (and actual consumption) are simultaneous and take no time at all. Hence no commodities are carried over from the past or carried forward into the future. Indeed, strictly speaking, past and future are extraneous to the model.

1. Chiefly Abraham Wald, Kenneth Arrow, Gerald Debreu and Ian McKenzie.

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5. All transactions take place at the equilibrium system of prices which is established *before* any transactions are made. This is in fact an unrealisable condition, for reasons set out below.

Though the mathematical theory of general equilibrium attained its final form thirty years ago, and nothing has been added to it since, attempts have been made to make the model more life-like by introducing time (divided into periods of unit length, such as a day or a year), so that all quantities are “dated” and there are markets for each commodity for all future dates as well as for the current dates: if there are  $n$  separate commodities for  $m$  periods, there are  $n(m)$  markets, the prices of which are all interdependent. This means that nothing can happen in the future which is not perfectly foreseen in period 1, and economic transactions in all  $n(m)$  markets are a once-and-for-all affair. (From period 2 on, life must become very boring!)

It was not possible, however, to relax the model in other vital respects – such as changes in technical knowledge occurring in the future (except those perfectly foreseen), or to allow for economies of scale (increasing returns), or for the presence of imperfect competition where markets do not “clear” since sellers sell less than the maximum amount they are prepared to sell at the ruling price. None of these features of the real world is compatible with Walrasian general equilibrium.

In fact, the extension of Walrasian general economic equilibrium to cover the case of intertemporal equilibria makes the whole theory more absurd than it was in its original timeless state. For it assumes the constancy over time of the two factors which are known to be constantly changing – human tastes and the technical knowledge available for satisfying them. It is one thing to postulate that in some basic, not precisely definable, sense there are basic human wants which by their very nature are permanent – such as the want for food, for protection against the elements through clothing and shelter, etc. But it is quite another thing to express these wants in terms of precisely specified “commodities” which are (in greater or lesser degrees) substitutes for one another. Food is a primary want and the consumption of bread is one of numerous ways of satisfying it; but one could hardly speak of a demand for bread before the milling of the

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wheatgerm into flour was invented, and the method of making bread out of it. Or, to take a more fashionable example, can one include computers as a variable of the preference map of “economic agents” for periods *before* computers were invented? In the sense required by the set-up of a general equilibrium model there must be a *finite* number of precisely defined commodities, which cannot be allowed to change as between one period or another. This means that as yet uninvented commodities must also be included (with an infinite price, for periods before their invention) which pre-supposes, of course, that all future inventions are perfectly foreseen. And the same goes for all other factors which enter into decision making. The question which the theory of equilibrium is designed to answer – how it is that all the different goods and services are produced and made available in the markets in the proportions which best correspond to the preferences of consumers – is posed in a manner which treats factors as exogenous and stable in time which are in fact continually evolving as a result of the operation of economic forces.

The Walrasian model, with all its absurd axioms, was intended to be no more than a starting point. It was intended, as with any theory, to develop a model of the second, third, etc. approximations, in the course of which the “scaffolding” (which served to erect the building) was gradually removed. In fact it proved impossible to relax the initial assumptions – on the contrary, the development of the theory meant the addition of more restrictive assumptions than were originally thought to be necessary. As a result, economic theory based on the theory of general equilibrium has led to a *cul-de-sac*, which, far from assisting the absorption of accumulating knowledge and experience, has inhibited progress and has created a brake on the development of an integrated system of knowledge.

One reason why Walras’ model failed to provide a reasonable starting point was its exclusive concentration on the role of prices as the sole means of communication between “agents” and hence the sole instrument in the allocation of resources among industries or commodities. Granted the premise that the main problem with which economics is concerned is to explain how an undirected, decentralised system functions, it was wrong to sup-



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pose that this function is fully performed by the price-system, and that markets can function without either reserves or intermediaries, neither of which features in Walras' model. The model assumes only two classes of "economic agents" – producers and consumers; and it is designed to prove that if all transactions take place at equilibrium prices, all markets will "clear"; the activities and decisions of myriad individuals will be consistent with one another, and everyone will be as well off as possible, in the Pareto sense.

But how is this price-system established, and what happens if it is not established? Various authors, Walras and Edgeworth included, tried to solve this problem by introducing the notion of provisional or hypothetical bids which become binding in stated circumstances – circumstances which bear some family resemblance, but no more than a family resemblance, to sales by auction where, after numerous conditional bids, the actual sale goes to the highest bidder. In the real world the auction method is confined to transactions with special characteristics – to the sale of rare books, rare pictures and coins, and occasionally, to the sale of real property, land or houses. It is inconceivable as a method in a situation in which both sellers and buyers operate in all the markets simultaneously and in which both bid prices and offer prices depend on the prices in many or all other markets, where the same process takes place simultaneously, and where a bid does not refer to a fixed quantity (like a Rembrandt self-portrait) but to a variable amount, depending on the price offered or demanded.

Yet if these conditions are not satisfied, the market will not be in equilibrium but in a state of disequilibrium; and economic theory is silent on the subject of disequilibrium. The technique of "comparative statics" which is employed on all possible occasions is a method of analysing the effect of extraneous changes of all kinds, in terms of the difference it makes to the state of general equilibrium. In other words, it predicts the effect of changes in exogenous variables by comparing two equilibrium states, without saying anything on *how* the system moves from one state of equilibrium to the other.

Until comparatively recently, nobody has pointed out that the

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Walrasian model leaves out the existence of a third class of economic agent essential to the functioning of markets – professional intermediaries who are both buyers and sellers simultaneously without whom markets as an institution could hardly function. It is the professional dealers or merchants who make a “market” by being always ready to do business – by providing the facilities which enables producers to sell and consumers to buy without appearing simultaneously in all markets; and who are enabled to do this by carrying at all times stocks of the commodities in which they deal in large enough amounts to tide over any short-period discrepancies between “outside” buyers and “outside” sellers. In practice, they fulfil the role assigned to the “heavenly auctioneer” of Walras who conducts the preliminary “tatonnement” necessary for establishing the set of equilibrium prices *before* any transactions are made. Professional merchants or dealers are always “open” to do business during business hours – i.e. they quote prices at which they are ready to buy or to sell (up to certain quantities). They necessarily always quote a pair of prices, one for the buying and one for the selling.

They are not required under the actual rules to buy or sell only at equilibrium prices (still less, in unlimited quantities), but it is their behaviour in the face of an excess demand or excess supply by “outsiders” which brings about the tendency for prices to settle around the level at which the outsiders’ demand and supply tend to become equal to each other. The important point is that it is the regular dealers in the market (they were called “jobbers” in the phraseology of the old London Stock Exchange)<sup>1</sup> who initiate the price changes necessary to align outside supply and demand (or production and consumption) to one another. They make their living on the difference between their buying price and their selling price (the so-called “dealers’ turn”). The more highly organised a market is, and the greater the competition between dealers, the smaller the “turn” is likely to be, as a proportion of the price – though it must always be large enough to cover the carrying cost of stocks (including interest and all storage charges), as well as their profit, which is the compensa-

1. *Editors’ Note:* After the financial reforms of 1987, the nature of the old London Stock Exchange changed.