

## Peregrinations of an Economist and the Choice of His Route

I would be tempted to date my birth certificate as an economist "Vienna, 1934", when I arrived there as a Rockefeller fellow accompanied by my young wife. But that would be ungrateful to my first French masters.

At the University of Lyons, René Gonnard conferred on the Chair for the History of Economic Doctrines an exceptional lustre, combining a personal approach with an acute analysis of his predecessors. In addition to this homage, I owe him a debt of undying gratitude. Words are powerless to describe a young man's feelings when his intellectual ambitions and capacity are brought out by a mentor who treats him as his son.

Etienne Antonelli took an interest, which was exceptional in those days in France, in Léon Walras' mathematical economics and its sociological setting. He foreshadowed the confrontation between pure economics and socioeconomics which is still proving fruitful.

Thanks to one of the first French mathematicians to be deeply interested in relativity, M. Eyrault, I had the privilege of teaching in an Institute for Financial Science which he directed.

Long before I worked in the French capital (1937-8), I was exchanging views with a great master, Albert Aftalion, who was to become my friend.

I therefore rapidly obtained a grounding in the abstract and rigorous aspects of general theory and was therefore prepared for the refined casuistry of the Viennese.

### **Peregrinations and Acquisitions**

There was an ardent pursuit of research in the seminars of Ludwig von Mises whom a certain ostracism kept at a distance from the University.

These meetings, sponsored by the Chamber of Commerce, were thronged by an international audience, attracted by his books and gripped by his lectures. Madame Berger Lieser, an incomparable promoter, organized subtle discussion on the famous foundations of interest, production capital and financial capital, and on the relations between interest rates and wage rates. Philosophers, historians, epistemologists and senior civil servants subjected the constructions of the famous Viennese to a vigilant criticism. Friedrich von Hayek, Joseph Schumpeter, Gottfried von Haberler and Fritz Machlup were already in other countries. Together with von Mises, one could meet R. von Strigl and, on the opposite side, Oskar Morgenstern, who was already fascinated by higher mathematics, closely concerned with economic forecasting (*Wirtschaftsprognose*) and dubious as regards marginal utility and the general interpretation derived from it. With all respect to his memory, I would venture to suggest that Hans Mayer, with his blond Jove-like beard, whose lectures were greatly appreciated and who was mad keen on hunting chamois from peak to peak, was perhaps as an economist content with less elevated pursuits.

As to the complex and profound personality of Othmar Spann, it would call for a lengthy study which, as it happens, has been vigorously carried out by Vallarché. Spann, a sociologist and philosopher, was far removed, thanks to his *Universalismus*, from the prevailing intellectualist positivism. His ardent temperament impelled him to make a thorough study of the relations between social formations and economics. He never succumbed to the temptations of national socialism which was then beginning to ravage the German world. Catholic by upbringing and having drunk at the wellsprings of the old idealistic and romantic Germany, he belonged to a different spiritual universe. Violently attacked by the Viennese liberals, he deserved sympathetic attention which he did not always receive, and he suffered from this isolation. When they invaded Vienna, the national socialists threw him into a concentration camp, where he suffered terribly and almost lost his sight. His memory and his work deserve respect.

Any genuine economic thinking is bound to tackle the equilibrium of interdependence. The Viennese School constructed its theory in a spirit which in many ways was contrary to that of the Lausanne School. It made a distinction, not without justifica-

tion and using its own analytical instruments, between a halt in the flow of goods and the decisions of economic agents which by their interaction adjust supply and demand. As it took as its starting point the agent (*Wirtschaftssubjekt*) and the subjective theory of marginal utility (*Grenznutzenlehre*), the result could not be otherwise.

The differences between real taxes (*Echttaxen*) and those which are merely apparent, made it possible, with refinements which are still fruitful, to arrive at zones of indeterminateness and at thresholds. This also meant, even when one did not admit it, opening the irritating debate on the *rigorous and meaningful definition of what is called "normal" profit*. I recall lively discussions between Ludwig von Mises and our common friend, Hugh Gaitskell, who was one day to become Chancellor of the Exchequer and who at that time was modestly pursuing his studies in advanced economics side by side with us.

Whereas von Mises stigmatized the inevitable unemployment caused by the excess of the supply of labour over the demand or pointed out the long list of disequilibria and compensations which were unavoidable in the abstract, the future leader of the Labour Party stressed the margin for manoeuvre by acting on profit. Even before the great proliferation of analyses of imperfect or monopolistic competition, this kind of discussion could take one very far. "What can you expect?" insinuated von Mises with a feigned indulgence, the sincerity of which was not quite above reproach. "He is bent on a socialist career". The truth was not quite so simple.

It was not just "naked" economics (utterly opposed to the spirit of the German historical schools) that one learned in Vienna. One was given lessons in an elevated, delicate and all pervading culture. These were the days when it was possible to follow a course by Sigmund Freud whose psychoanalytical explorations were transmuted into a teaching calculated to arouse the earliest burst of enthusiasm. We would listen to the famous city-historian, Dobsch; then, having enjoyed the subtle messages transmitted by the imperial palaces, the Stefankirche, the Votivkirche and the sumptuous galleries of the Kunsthistorisches Museum, sometimes we were privileged to round off a wonderful

day of cultural delights by listening to Lotte Lehmann singing *Fidelio* at the Opera.

None of us has forgotten the parties organized by the admirers of Ludwig von Mises at which Felix Kaufman, a living memory with a musical voice, sang in several languages the series of the *Lieder* of the seminar since its foundation.<sup>1</sup>

"You're leaving for Berlin. So you'll meet Werner Sombart. He's now got to his tenth definition of Socialism..." Such was the viaticum of Ludwig von Mises. At my first visit to the author of *Der moderne Kapitalismus*, he greeted me with the words: "You're coming from Vienna. You must have known my enemy von Mises there..."

In Germany at that time, to say the truth, there was very little to glean. H. von Stackelberg and Erich Schneider came later. It was from Fritz Neumark, my old friend, who gave the best lessons in financial science and general economics and with them that one could immerse oneself in lofty European German culture. I was also interested in the works of Carl Schmitt on the philosophic foundations of politics. I subsequently got to know the profound moral greatness of the man whom I call my friend when he courageously snatched one of my students from the clutches of the Nazi police.

How fruitful was that stay in Rome where I followed some lectures by Luigi Amoroso, and where I became familiar with that extraordinary mathematician, statistician, sociologist and economist, Corrado Gini, and where I also formed irrevocable friendships with Ugo Papi, Giovanni Demaria and later Giuseppe Palomba. I am not forgetting Alberto de Stefani or Lello Gangemi

<sup>1</sup> There still echo in my ear the lines:

When a Frenchman loses his way in Vienna,  
He retains, whatever happens,  
Many a charming memory:  
Noble gardens, distinguished palaces,  
A story of form and line,  
And the graciousness of the moment...

As regards the *Wienerschule*,  
Like a knight it arms him  
With the "Ist es denkbar?" and with the charm  
Of the *a priori* method...

who awakened my interest in special points of public finance, thanks to our joint admiration for De Viti de Marco.

It will be obvious that the assimilation of Pareto's thought via Maffeo Pantaleoni, Barone and their main disciples provides an analytical framework and food for methodological reflexion which leaves its mark on whoever benefits from it, especially, perhaps, if he refuses to accept it too docilely.

My wife and I were on the point of steering a course for the United States when war broke out. The "manoeuvres" in Lorraine and the different diversions of the occupation period had little connection with abstract economics. Since I had to lecture all the same, I took advantage of the opportunity to take up again in detail the Austrian-style equilibrium by preparing a book on *Value*<sup>2</sup> and compare it, in seminars at the Ecole des Hautes Etudes of the Sorbonne, with the versions of equilibrium propounded by Gunnar Myrdal, Knut Wicksell, and of course Léon Walras.

Over and above this, there was the Institut de Sciences Economiques Appliquées, founded in 1944 with the French Resistance and of which one of the first protectors was Lord Keynes himself. These were splendid moments, despite the harshness of the time. We worked there in company with the American doctor Sanders, and the famous Soviet biologist, Serge Chakhotin, a disciple of Pavlov. Pierre Uri and I proceeded to make a detailed study of the Keynes and White plans, with our eye on the future. I had founded, with François Divisia and René Roy, a Group of Mathematics Applied to Economics, which was assiduously promoted by Maurice Allais, G. Dubourdieu, Jacques Dumontier and G. Lutfalla.

On Liberation, René Pleven gave me the task of studying national accounts in England, and we embarked with some other members of the Institute on a Liberty ship.

At last we were free to enjoy those personal encounters which we had so long yearned for during the terrible years of the occupation.

At Oxford, we were welcomed by Thomas Balogh, Paul Streeten, Burchardt and Steindel; at Cambridge, by Professor Joan Robinson. We were received not far from Manchester, in the

<sup>2</sup> *La Valeur*, P.U.F., Paris, 1943.

gracious dwelling generously thrown open to us by Sir John and Ursula Hicks — in London we worked with Richard Stone. Everywhere in that great country after the glorious trials through which it had passed, we resumed contact with English thought.

Relations were established between the London School of Economics, the famous university cities and our Paris centres where Sir Roy Harrod, Sir John Hicks, Mrs. Robinson and Friedrich von Hayek, at that time a professor at the London School, Sir Dennis Robertson, and many another expounded their latest works.

Edward Chamberlin from Harvard, after a first visit which followed close on one by Mr. Kalecki from Oxford, became a frequent guest and a permanent associate of the ISMEA. It was owing to his friendship and to that of Joseph Schumpeter, to whose work I had devoted a book, that I was invited in 1947, to lecture at Harvard. These lectures are the basis of a long series of my own research efforts and of those which they have inspired.

The first of these dealt with *Economic Spaces* and presented the three concepts which I regard as fundamental, structured space, polarized space and plan space. The other was concerned with *macro units* and *macro decisions*. It contained the seed of complex units and of hierarchized subsets. It was valuable being able at that time to meet, at the Littauer Centre, W. Leontief, Walter Isard and Gerschenkron, and, at the MIT, Paul Samuelson who submitted to ISMEA the algebraic form of the HO model.

We all knew the potential advances inherent in J.M. Keynes' macroeconomic theory which was gradually adapted, quantified and steered in the direction of the breakdown of aggregates and of mesoeconomics...

To introduce asymmetry into economic theory means going beyond the static equilibrium of perfect competition and preparing a radical change of perspective in order to understand interdependence.

### Choosing One's Path

The recent review in *Les recherches économiques* of Louvain<sup>3</sup>

<sup>3</sup> *Recherches économiques de Louvain*, Vol. 44, 1978, N.4.

of a *Homage* which was generously devoted to my research<sup>4</sup> credits me with a general concept of economic life in line with the contemporary trend in science and completely different from the "neo-classic vision". It will be noted that this concept admits of an irreversible time, time scales, probabilized spaces, evolutive structuring and disequilibrium analyses...

The choice of my path in fact demanded these substantial interlinking changes "at the expense of the tranquil certainties of other ages"<sup>5</sup>. The concepts, particular models, and theorems which I proposed<sup>6</sup> and which "have stimulated a whole school of researchers to go beyond the mechanics models" flowed from a central intuition and foreshadowed an attempt at the recasting of the theory of interdependence which I undertake in my book on *Active Units and New Mathematics, a Revision of the Theory of Equilibrium*<sup>7</sup> which will be completed by a *Dynamics of Active Units*, the object of my research at the Collège de France for twenty years (1955-75).

### Partial Approaches to Interdependence in a Whole

In a course delivered in 1947 at Balliol College in Oxford, "An outline of a theory of the dominant economy"<sup>8</sup>, I concentrated on the asymmetric effects exercised by the United States on world trade. But I was very careful to emphasize that this analytical outline was also in its essence applicable to a firm or an economic subset.

I linked the asymmetry to three parameters: the dimension, the nature of the activities and the negotiating strength. I have not changed my mind. The changes in the state of the world have profoundly transformed the conditions in which they are present and also their consequences, but have not erased their analytical interest.

<sup>4</sup> Presses Universitaires, Grenoble, 1978.

<sup>5</sup> *Recherches économiques de Louvain* (loc. cit.).

<sup>6</sup> *Recherches économiques de Louvain* (loc. cit.).

<sup>7</sup> Dunod, Paris, 4<sup>th</sup> quarter 1975. This book tries to formalize the concepts defined in *L'Economie du XXe siècle*, 3e ed., P.U.F., Paris, 1969.

<sup>8</sup> Cf. *Transnational Corporations and World Order*, Readings in International Political Economy. Ed., George Modelski, W.H. Freeman and Co., San Francisco, 1979, pp. 135-54.

The word "domination" was rather clumsy and somewhat sweeping. It gave the impression that one unit completely substitutes its decision for another's. This is precisely the case where the analysis loses its interest, since we are then in the presence of *one and the same unit*. I laboured this distinction, but to absolutely no avail. The unusual terminology chosen in order to *avoid* the confusions inherent in the word "imperialism" made people think that I accepted the thesis. Although, from the start, I introduced precise distinctions, I had to make the point very strongly and explicitly for people to avoid confusing a) *influence*, b) *dominance* and c) *partial domination*. Since then, a very large number of works have formalized these asymmetries by topological representations and by graphs.

In thorough studies in other countries and in France on general equilibrium, I have often repeated (and appropriated) two affirmations which have been far too little reflected upon. One is by Vilfredo Pareto at a celebration in his honour: "I saw the concrete aspect and was unable to get through to it! Vedevo la realtà e non potevo coglierla!". The other is by Oskar Morgenstern, to whom we owe so much and who has been so unfairly treated: "There is no road leading from L. Walras to reality."

This is something which should make us realize the distance between the determination of a mathematical system and the "determination" of an observable system, and, no less so, to try to identify the prefabricated obstacles impeding the passage from the conditions on which the famous theorems (of existence, uniqueness, stability and optimality) determine each other<sup>9</sup> to a description of the activity which can simplify it without destroying it.

The critical and fundamental intuition which has since then always guided me has led me to carry out special research which is illuminated by one and the same hypothesis. The conflicts-cooperations, the battles-assistance, components of any relations between agents — the macro units or complex units, economic spaces, influences, dominances, the effects of propulsion, the real propensities to work and change (innovation), the growth inducing points of training (poles of development, whether spatialized or not), the propellant firms or regions — all these concepts,

<sup>9</sup> Very imperfectly even in the mathematical order.

carefully tried out with the help of numerous observations, will perhaps now be admitted as proceeding from a methodical search for asymmetry in particularized forms and conditions. This same research leads us, in the field of distribution, to take into explicit consideration the *social roles* and *on the other hand* to analyse at the present time the *income discussed* on the levels of primary distribution and redistribution (so inappropriately termed).

A recasting of the theory of interdependence was maturing in the course of this special research. A first overall exposé was presented in my "*Active Units*". Better than anyone else, I know *all that still has to be done*, and I am doing all I can to fill in the gaps. But it will perhaps be understood after these remarks that I cannot uncritically accept the verdicts which reduce my contribution to a simple criticism or which congratulate me on penetrating views lacking a comprehensive logic, or which in a polemical spirit, decree that my position is not operational. What is not operational, but not in the slightest, is the standard equilibrium, repeated without the subtlety and the scrupulousness of the founders, because it *destroys* the reality of the agent and of his activity on pretext of simplifying it, whether this is expressed uncritically in the current handbooks, or whether it conceals its weaknesses in quantitative models which, be they macro or mesoeconomic, play with *hand-restructured* blocks or subblocks which are incompatible with the standard equilibrium if it is interpreted strictly.

#### From Extratemporal Equilibrium to the Temporary Exhaustion of the Drive for Change

The standard walraso-paretian equilibrium, whatever forms it assumes, applies to micro "doubles" (*sosias*) so "small" and so numerous in the homogeneous space of perfect competition that none is in a position to oppose the *Diktat* of the price system and to modify the objects and agents surrounding it. Lagrange's mathematics confer on this view a coherence borrowed and indeed plagiarized from classical mechanics. These presuppositions and their consequences are being subjected to a sharp criticism, and one that tends to become general.

We are not going against the stream of advanced research



when we start from the agent with an energy capable of transforming his surroundings, an energy which is temporarily exhausted if it reaches its own goal, if it comes up against a physical obstacle or meets with opposition from the partner. By deciding on the goods and services which are at its direct disposal (*space of decision*), it projects and brings into play *operational spaces* (purchases-sales, investment, information).

These spaces are extensible, and under limiting conditions, make it possible to define temporary equilibria in given periods. The whole proposition is amenable to topological formalization as a prolongation of that of G. Debreu and of K.J. Arrow. The method gives a new lease of life and enriches the current models of monopoly, differentiated competition (R. Triffin), or aggressive or peaceful oligopolies and economic and financial groups. It admits of the representation of subsets articulated hierarchically.

This method is, in one sense, a return to A. Cournot inasmuch as it sees in any economic action a component of free choice and one of power relations and also offers an image of the relations between the *parts* (structured subsets)<sup>10</sup> which "hold together", to repeat the very words of A. Cournot, in quite a different way from perfect competition prices. In line with the teaching of the general systems, each part, each structured subset has a *dimension*, and receives a *place* in a network of relations and constitutes a locus of actions and of *retroactions*.

The concept of economic space as a whole formed of hierarchically articulated parts has decisive consequences for general equilibrium.

Let there be a small number of large units with a structure and given activities; let us call them the Large ones, in trade relations with a large number of the Small ones, also characterized in these two ways. Let the Large and the Small ones be placed in a vertical structure, from the first transformation to the final consumer. The Large ones can impose constraints on the Small ones. The cosatisfaction of the Large ones or the cessation of their oligopolic struggle to avoid loss may be concomitant, to a large extent, with the dissatisfaction of the Small ones or of a part of them. For reasons of structure, the banking oligopolies, the financial groupings of large businesses, are in a position at a

<sup>10</sup> And not the *elements*.

certain time, as a result of the concentration of supply and demand, their superior capacity of information, and their technical superiority, to exercise an asymmetric action on the small units and individuals. In the field of international relations, too, the provocative question can be equally well fittingly raised, given the very large concentration of foreign trade: "Commerce between Big Firms or commerce between "nations"? Between "nations", that is to say, between sets of small units and of individuals whose behaviour depends on costs and relative prices, and, alone, is the basis of the substitution theorems on which the whole economic logic of the open economy depends.

A number of other cases of asymmetric relations between structured economic areas can be observed and are integrated into the reworked model of *general* interdependence (using "general" in the sense of "concerning the whole"), but not a *uniform* one (that is to say, translated by the same reversible relations in each point of the homogeneous economic space).

We have said enough to bring out the opposition between the *fictitious equilibrium* and two *equilibria of observable situations*.

The fictitious equilibrium, as should be repeated again and again, does not describe any "observable state"; it is a grid for reading off positions, "a transparent plate with points of reference" through which we can look at economic activity. The grid, the points of reference in the transparent plate, draw attention to the existence, the uniqueness, the stability and the optimality of a *point* of equilibrium, of a *price* for which all the supply is equal to all the demand at the micro- meso- and macro-economic levels. No doubt. The question remains whether the choice of the form of the grid or of the points of reference of the transparent plate does not conceal the very substance of economic life which is the activity, the action of the agents, who are endowed with memory and plans, differing one from the other and unequal between themselves for given operations in a given period.

There is a radical opposition, *as regards the essence or the substance* of what is observed and constructed, between:

- 1) the general equilibrium of things (E<sub>c</sub>),
- 2) the general balancing of activities (E'<sub>A</sub>).

In E<sub>c</sub>, goods are moved by the neutral forces of the price system, assimilated to physical forces. Outside time and space, a stoppage of the flow is privileged on the basis of the maximization

theorems linked to perfect competition. If we are to achieve that, the agent "must be" as if "he did not exist". He is reduced to a symbol of passiveness. Supply and demand, are always equal to each other in each case by virtue of *one* price, as *impossible* as the perfectly homogeneous space to which it corresponds and the agent with no activity. This equalization dictates the cessation of the flow.  $E_c$  is the stoppage of the flow of the goods and is translated by recourse to a type of mechanics specific to physical phenomena.

In  $E'_A$ , agents with a drive for change, equipped with units differing in dimension and structure, engage in operations which are or are not compatible with each other. In the whole formed by the articulation of structured parts, the interactions of dissimilar and unequal agents give rise to equilibrations, very real *tâtonnements* (as opposed to the famous Walrasian *tâtonnement*).

The equilibria eventually achieved presuppose, first of all, the intercompatibility of the structures. The equalization of demand and supply at *one* price has in itself no economic signification except when it is characterized by a relation to the interactions of activities. The temporary exhaustion of the drive for change in the system is characterized by a deceleration of the flow which forces the analysis to define the conditions of metastability, price hierarchy, and levels and degrees of cosatisfaction at the moment at which the *net* energy of the system is approximately equal to zero ( $d\Phi_e \approx 0$ ). Its construction implies methodical borrowings from thermodynamics and recourse to topological forms. It should be obvious that uncertainty, risk, conflict and information are not properties of inert objects, but on the contrary are inherent in man and his activity. Hence, economics fails to function when, in order to "determine" itself fallaciously, it confines itself to describing the movements of inert objects which a reified man registers passively.

$E'_A$  is not, strictly speaking, a generalization of  $E_c$ : it is a balancing of activities (in the sense of a balancing action) different *in kind* from the mechanical equilibrium of objects and exercised in irreversible time. It does not deserve to be called "encompassing" except as regards the variables which it considers in addition to those of standard equilibrium (the information of the agents) and as regards the types of relations which it admits (equilibrations and regulations).

### From the Exhaustion of the Drive for Change to Dynamization

It is the balancing of activities ( $E'_A$ ) which enables us to arrive at a rigorous dynamization and coherence of the system.

This is so for a decisive reason. All economic dynamism has its source in man, i.e. in the agent, and derives its value from the interaction of activities, unfolds in irreversible time and is maintained or eventually gains in intensity and in quality which can only be appreciated in relation to the human being.

The great statistical works on growth, whose merits cannot be overvalued, have sought to find regularities among aggregates and subaggregates, between blocks and subblocks of variables supposed to be linked causally by quantitative relations. Working from insufficient materials and statistical mixtures which are in no way analytical quantities, the method was, in advance, exposed to very restrictive limitations. To which must be added those stemming from the moving ten-year averages and from the paradoxical recourse to the Cobb-Douglas function and its constant returns, where evolution has to be described on the basis of modern industrialization.

In parallel, we have been acquainted with subtly elaborated models of *equilibrium growth* which, as is noted by their creators and competent exponents, add little to what statics tell us.

Research during the last thirty years is thus in sharp contrast to the ambitious, significant and fruitful dynamics of the first "classics", the Physiocrats, Turgot, Adam Smith and his immediate successors. All of them base their interpretation of long-term evolutions on activities, on the active operations of men and their social groups operating in relations of conflict-cooperation, in ambivalent mixtures of struggles and collaboration.

We are harking back to this impressive tradition if we insert any study of relations between quantified aggregates in such dynamic frameworks where the economic factor finds its coordinates in a social system. Population, technique, the rules of the game, cannot be reduced to relations between prices and quantities. It is as well to consider them, to start with, as exogenous factors, and then be free to see to what extent these groups of variables can be endogenized, inserted in the equations of the "economic" functioning of the whole.

The typical model of this functioning is the one which links a propulsive subset to a static one, the rate of growth and the change of structure of the latter being a function of these variables for the former. Clearly, qualifications and specifications are essential for the construction of the particular models of propulsive firms, propulsive industries and propulsive regions.<sup>11</sup>

The evolution, when tested against the observable reality, which is studied by this method, puts the cycle and its trend back into the periods of development, distinguishes between cyclical contraction and structural crisis and connects economic dynamics with the dynamism of the social groups.

As it happens, carefully defined mathematics supports the reworking of the dynamics by appropriate formalizations such as Lyapunov's "stability", R. Thom's point of catastrophe and the models of sequential and organizational games.

Thus, we discover the prospects of an integration in the same analytical body of the metastatics of the balancings of active units and of the moving equilibrium of a re-elaborated dynamics.

### From Dynamization to Regulation

In the economic whole considered, the decision-makers maintain and upvalue the structure of their units, whether simple or complex, and enter in both cases into a conflict-cooperation relation, acting in both cases through regulations and partial equilibrations. In certain conditions, the result is a tendency to the metastability of the *structures* and of the *functioning*, subject to exogenous actions. The degree of this metastability, at various levels, depends on the information and the activity of the agents.

Another point is that history does not record any case of large sets, or "nations", able to dispense with the *activity* of units called public ones which try to effect a regulation of the whole, with the welfare of the community in mind. It is not on the basis of objects, of collective goods, of merit goods, that this regulation can be correctly interpreted, but as the permanent interaction of

<sup>11</sup> Cf. *Le progrès économique*, Economies et Sociétés, I.S.M.E.A., Paris, 1967 and *Prises de vues sur la croissance de l'économie française, 1820-1914*, I.A.R.I.W., London, 1956.

*activities* whose plans have neither the same scope nor the same time horizon or even the same means.

There is not, on the one hand, a "private" subsystem which can be *completely* isolated under the law of the pure market and, on the other, public agents who engage in sporadic and successive *interventions*. The market is moulded by the society in which it functions and by the evolutive social structures which underlie the overall structures of production, consumption and distribution. Their relatively slow transformation is effected in the conflict-cooperation in the organizational games of the social groups. The latter act to obtain their maximum profit *and* to change to their advantage the rules of the social game.

If this is really so, it is only to be expected that the welfare theories deduced from competitive statics should reveal their weakness. The consumers' surpluses and the Paretian compensations were ill suited, both because they referred back to perfect competition and because they were congenitally linked to statics.

The three famous conditions of economic policy laid down by A.C. Pigou — maximization of the overall product, reduction of fluctuations, and income equality, have not stood up any better to historical experience. To the first there has been added in recent times the optimum product structure accepted by the population. As to the second, a distinction is made between cycles and structural crises. As for the third, if the reduction of unjustified economic inequalities remains a considerably more fruitful perspective than the general reference to equity, it has become fairly clear that it is the search for a *socially optimal inequality which is really important*.

*What is involved is the very form of society*, and it is the dynamism of the social promotion of the hierarchized groups which enables us to hope in acceptable approximations to the least inequality. The main means of achieving it is concerted and contractual economics accompanied by through economic information and training of the organized social participants.

It is only in this perspective that we can regard as meaningful both the balance between the three flows — buying and selling, constrained deductions and transfers of solidarity — and, on the other, the first attempts to effect a really collective economic computation which would set out to assess the surpluses and losses imputable to well defined social subsets.



Have I recognized the huge debt which I have contracted towards my predecessors and towards all those who have been for me incomparable fellow researchers? Justified, at least in these few pages, the choice of my path?

I hope so, without being convinced that I have. It is difficult to record in so brief a compass half a century of investigations and to convey to the indulgent reader my sincere regret at not having been able to do better.

At least I can bear witness that economic knowledge, gradually organized, checked and purified by science, economics carried out in a scientific spirit, is worthy, because of the importance of the issues at stake and of its earliest conquests, of the devotion to it of a whole lifetime.

*Paris*

FRANÇOIS PERROUX