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Oligopoly and technical progress:a critical reconsideration after thirty years (1985)

## I

In my essay I tried to establish, among the others, the propositions summarized under <sup>the</sup> 14 points mentioned below.

1. For a conception of competition that can be used in a dynamic analysis we have to go back to the classical economists. - According to the classical conception, competition is to be defined, not in terms of the size of the firms, but in terms of free entry; markets in non-competitive conditions are those in which entry is difficult.

2. Competition prevails in primary activities, oligopoly in the others. - In our time competition is the rule in the world markets of agricultural and mineral products, whereas in industry and services we find, as a rule, oligopoly in its three varieties: concentrated, differentiated and mixed.

3. Two processes, that of concentration and that of differentiation, are at the root of modern oligopolistic formations. - Concentrated oligopoly can be found in those branches of industry and services where the process of concentration, stimulated by statical and dynamic economies of scale, has asserted itself. Differentiated oligopoly can be found mainly in those activities in which quality competition and advertising have had a particularly relevant role. (Differentiated oligopoly is to be seen as a further specification of imperfect competition).

4. There are good theoretical reasons why, as a rule, marginal costs in industrial firms are constant. - The U-shaped cost curves are a myth; in particular, short run marginal cost, as a rule, is constant and therefore equal to direct (or variable) cost: a state of affairs inconsistent with competition of traditional theory, but fully consistent with oligopoly.

\* Paper presented at the Conference on Innovation Diffusion organized by the University of Venice and by the Center for Economic Policy Research of Stanford University, held in Venice from the 18th to the 23rd of March 1985.

(2.)

5. Price determination and price variation are two distinct problems but they are to be treated in an unitarian way. - For the former problem - price determination - the concept of entry-preventing price and that of elimination price can be particularly helpful; for the latter - price variations - the so-called full cost principle represents the relevant starting point.

6. The full cost principle is not simply a rule of thumb: it is susceptible of a full fledged theoretical explanation that can open the doors to interesting analytical developments. - Since that principle implies a markup over cost - and, in particular, over direct cost -, the task of the theorist is to explain both the level of the markup in a given situation and its variations; if cost and cost variations are assumed to be outside the influence of individual firms, these two problems coincide with those of price determination and price variations.

7. The markup tends to move inversely with direct costs. - In a given situation, the markup depends on the equilibrium price and <sup>direct</sup> variable cost. In the course of time the firms which act as price leaders modify the price on the base of the markup when direct cost change. But the markup is not constant: it tends to move inversely with direct costs.

8. The shift of cost variations over prices is partial and asymmetrical. - The proposition discussed under the previous heading implies that the shift of <sup>changes of</sup> direct costs onto prices tends to be partial; as shown by an empirical investigation carried out several years after the publication of my monograph (in 1979), the shift is not only partial but also asymmetrical: as a rule in the short-run - year by year - it is never complete, but it is greater when costs rise and considerably smaller when costs fall. The theoretical explanation of this behaviour is to be



found in the different intensity, in the course of time, of the so-called oligopolistic interdependence; this changing intensity is to be related, basically, to the pressure of foreign competition and to the different role of the two fundamental components of the direct cost, that is, the cost of wage labor per unit of output and the cost of raw materials (these propositions, only hinted in my monograph, have been extended and developed in an article of 1979).

9. It is analytically important to distinguish between autonomous innovations and those determined by economic impulses. - Autonomous <sup>determined,</sup> innovations are those not determined, at least not directly, by economic impulses, induced innovations are those determined by such impulses and, in particular, by an increase of demand or by an increase of wages more rapid than the increase in the prices of machines; <sup>so as to</sup> ~~the latter increase~~ stimulate the introduction of new machines capable of saving labour. (These propositions are scattered in my monograph; they have been re-ordered and developed in an article of 1983, where I also present the results of an empirical enquire concerning the changes in productivity.)

10. Under competitive conditions the fruits of technical progress are distributed in the form of falling prices, nominal incomes remaining constant; under oligopoly, in the form of increasing nominal incomes at constant prices. - The main fruit of technical progress is the long run increase in productivity, to be coincide in a broad sense as to include the production of new goods; it is well to consider that the increase of productivity can give and in fact has given rise to both an increasing output and (to a smaller extent) a decrease in working hours. Of course, the above proposition (falling prices and constant

nominal incomes or constant prices and increasing incomes) puts the alternative in extremely simplified <sup>- I trust - not</sup> but <sup>misleading</sup> terms. Historically, in the past century the former course was more frequent, whereas the latter course is the rule in our century. And if it is true that in both cases real incomes - mainly profits and wages - increase, the overall consequences are not the same, as hinted in the subsequent point.

11. The downward rigidity of prices of the means of production and the increasing importance of the economies of scale represent new obstacles to the process of growth. - The downward long-run rigidity of prices precludes that particular stimulus to the expansion of production provided by the fall in the prices of <sup>the means of</sup> production. (Under contemporary conditions, the prices of all goods tend to become rigid in a downward direction - see point n.10; such a phenomenon, however, becomes an obstacle to growth when the prices involved are those of the means of production: I notice that in working out this proposition, ~~in 1956~~ (in 1956) I came across, without fully realizing ~~the~~ the importance of the question, with the distinction, that plays a crucial part in Sraffa's model, between basic and non-basic goods: see p.143n). At the same time, the increasing importance of the economies of scale - both "static" and "dynamic" - create an additional obstacle to the expansion of production. But since productivity tends to increase anyhow - due to autonomous innovations financed out of depreciation funds and to innovations stimulated by the increase in wages - unemployment would tend to increase. The increasing importance of the economies <sup>of scale</sup> and the consequent increasing importance of technological discontinuities create obstacles to the expansion of production because the new firms are in a position to enter into the market only if this is large enough <sup>if</sup> or <sup>it</sup> is expanding at a sufficiently high rate.



Thus, in several branches the obstacles to entry depend, jointly, on the economies of scale and on the size of the market. (The previous propositions open the door to the transition from micro to macroeconomics; the propositions briefly summarized under points n.12<sup>(13)</sup> and 14 fully belong to the latter type of analysis).

12. The tendency to economic stagnation and the consequent tendency of unemployment to rise can be offset by stimuli that are external to the system of private firms. - Of these stimuli, public spending is the most important one. The conclusion is, then, that a Keynesian policy of a dynamic character is necessary to combat economic stagnation and a long run increase in unemployment.

13. A dynamic Keynesian policy is likely to consist prevalingly of unproductive public expenditure, since productive expenditure, that is, public investment, is likely to meet with <sup>obstacles of</sup> organizational and, even more, ideological and political nature. - It is true that Keynes apparently put on the same plan both the policies intended "to rise the propensity to consume" (through public expenditure and taxes imposed upon the rich) and the policies intended to expand investment, including "a somewhat comprehensive socialization of investment". But, considering the gravity of the obstacles concerning the second line (expansion of investment), it was the first line (increase of consumption) that <sup>was</sup> likely prevail. In its turn, as I observed in my monograph, such a line was likely to determine and expansion of demand more rapid than the expansion of production and, thus, to give rise to a long run inflationary pressure.

14. The downward rigidity of prices and wages reduces the scope for monetary policy and makes it convenient an incomes

policy, which, however, meets with very serious obstacles. - Here I quote a passage of my monograph: "Monetary policy loses much of its efficacy when many prices and wages, especially in key branches of production, are no longer the result of the impersonal play of demand and supply but are 'administered' by companies and trade unions. There has been some talk of making wage and price administrators subject to certain controls, but any move in this direction would obviously encounter the strongest obstacles, particularly of an ideological and political nature" (p.204).

## II

In the propositions presented in the previous section I am unable to see ~~some~~<sup>serious</sup> mistakes to be corrected. I do see, however, propositions insufficiently developed and perspectives to be modified or even radically changed.

As for the propositions to be developed, in the previous section I hinted that some of them were in fact developed in articles written in 1979 and 1983 (see points 8 and 9). The perspectives to be modified refer, first, to the economies of scale and, second, to the dynamic Keynesian policy. In this connection, it is advisable to devote a few observations on to the much broader question of the crisis of the Keynesian theory. Here a more fundamental theoretical question comes to the fore, that is, the integration between micro and macro-economics; this, after all, was the main analytical aim of my monograph.

1. Let us begin with the problem of the economies of scale. I realize that, although in my book I was recognizing the vitality and the possibility of growth of small firms, I tended to overemphasize the importance of the economies of scale and, correspondingly, of large firms. Today this appears to me to be a reaction to the propensity of the majority of economists, who, after mentioning the economies of scale, completely neglect them in their theoretical models. However, there is also a special reason why the emphasis given to the economies of scale thirty years ago was somewhat more justified than it

is today. In fact, there is no doubt that for a long period, the economies of scale - static and, even more, dynamic - have been very important in many branches and especially in those branches that have played a key role in industrial development, such as steel, electricity, cement, basic chemical industries - to mention only a few. Still now in these and other branches economies of scale are important ("static" economies of scale are those that can be obtained given technology; "dynamic" economies of scale are those arising from technical progress when certain innovations can be introduced only at condition to increase output). The process of concentration, that has characterized several fundamental branches of the economy, has been originated by the increasing importance of the economies of scale, especially of the dynamic ones: a ~~decreasing~~ decreasing number of units have produced increasing quantities of output, because, owing to technical and organizational progress, this was the way to increase efficiency and reduce costs. In other branches of production a process of differentiation has taken place, as a consequence of quality competition and of advertising, both phenomena occurring especially in the markets of goods and services not catering for elementary needs but for needs of a higher order, where consumers' preferences have a broad scope. I argued that in such markets the obstacles to entry are given by the large "installation" selling costs - the costs to be incurred to build up a sales organization capable of competing with that of existing firms and to make the product or products known to potential customers through an "installation" advertising campaign, designed to break through into the market. I argued, too, that, such (let us say) commercial

obstacles to entry have effects similar to those of the economies of scale the size of the new firm cannot be too small relative to the market owing to the "installation" selling costs to be recouped.

However, in the last ten or twenty years both technological and "commercial" economies of scale seem to have a decreasing importance. In fact, in several industrialized countries employment in small firms and in family or individual units ("self-employed"), that until ten or twenty years ago was showing both a relative and an absolute decline, in recent times have shown a considerable growth. The reasons of this new development seem to be many. First, the trade union pressure has induced several large companies to subcontract several activities to small firms - small firms are less liable to bear the negative effects of such pressure; moreover, such firms do not bear the limitations, imposed by law <sup>in certain countries,</sup> on hiring and firing workers; ~~this is the reason of the more rapid development of small firms not only operating as subcontractors but also independently.~~ Second, the recent innovations, especially electronics, have created an important and probably increasing economic space for small and dynamic units. Third, in the latest stage of economic evolution industry is expanding at a decreasing rate, whereas services are expanding at an increasing rate; ~~and~~ in services there is less scope for technological economies of scale and <sup>here</sup> even the "installation" selling costs are less important than in the production of commodities. <sup>In such circumstances</sup> to "break through" in a given market the location or - in different contexts - the skill and the reputation of the suppliers are more important than advertising campaigns. In the case of highly technical services necessary to companies, or to self-employed, or special institutions - like scientific institutions - ~~and~~ the economies of scale or advertising campaigns



are even less important; on the contrary, the ability of introducing or exploiting innovations due mainly to skill and scientific knowledge becomes more and more important. In contrast with the economies of scale, I would call the economies that are favoured by small size "economies of specialization".

In my monograph, although I did not exclude at all an active role of small firms both in exploiting and in producing innovations, I assumed that the large companies are in a better position to produce innovations, since they can afford expensive research laboratories that smaller firms cannot. I am still convinced that this observation is valid. I have to recognize, however, that small firms have a more important role that I was inclined to admit thirty years ago. Sometimes small firms introduce and develop innovations that are picked up and further developed by large firms; in other cases small firms produce new goods and appliances that only large firms can exploit - this seems often to be the case with robots. Still in other cases small firms, by developing certain innovations, grow and become large firms. All in all, the role of small firms, if it is not superior to that of large firms, is not necessarily inferior: if large firms have got the advantage of controlling large financial and organizational means, small firms can be more flexible and enterprising. And if in the past, at least for a long period, the role of large firms was actually in several respects superior, after the development of electronics this is no more so. This is probably the picture now.



10.

All considered, in the new circumstances my argument in favour of external stimuli for the expansion of demand loses part of its relevance. This is understandable: all models of economic theory - except the very formal and abstract ones - are historically conditioned. An expansion of demand is always necessary to combat the tendency of stagnation and increasing unemployment, since the long-run downward rigidity of prices of finished products and services is still there; but the expansion of demand can be provided to an increasing extent internally, that is, from the very system of private firms. <sup>(On the other hand,</sup> ~~the~~ the expansion of demand provided by public spending seems to be less and less capable of stimulating the growth of income and employment and more and more likely to give rise to inflationary pressure, <sup>(In my monograph I was mentioning this risk; but it appears that</sup> ~~in~~ <sup>recent times the</sup> ~~other words,~~ <sup>can</sup> inflationary pressure starts much in advance than full employment is reached. Why?

2. Among ~~the~~ public expenditures to be considered as a long-run stimulus to demand - military expenditures, social welfare, public investment and others - thirty years ago I gave too much stress on military expenditures and too little to social welfare expenditures. It is true that I was encouraged in this direction by the observations <sup>made by</sup> ~~of~~ certain economists such as Paul Samuelson and William Fellner; it is also true that it was evident, in that time, the increasing importance of what was then called the "industrial military complex"; finally, it is true that thirty years ago social expenditures were not growing

at the rate reached afterwards and had only a limited weight in the budget of Western countries. But it was not too difficult to foresee the growth of those expenditures, since the foundations of the modern Welfare State were already been laid and the theoretical support for that growth had already been provided by Keynes and by his followers. The unbalanced judgement - too much stress on military expenditures and too little on social welfare expenditures - ~~has~~ gave the impression that the United States were bound, ~~therefore~~, for economic reasons, <sup>to have</sup> an aggressive policy; whereas this is not necessarily so, certainly no more than in the case of Soviet Union.

3. After having pointed out what today seems to me to be wrong in my book either from the point of view of the assumptions or from that of the perspectives, I wish to say now what I think is correct and needs further reflection, especially in the search of a more solid bridge between micro and macroanalysis.

In general, in my book I was pointing out that unproductive public expenditure, whatever the purposes, in the long run tends to create an inflationary purposes if it increases "too much", generating a systematic deficit spending; we may add that such a deficit spending tends to determine a crowding out of private investment - a possibility that in principle was not denied by Keynes.

Let us consider, in particular, welfare expenditures, that in the last ten or twenty years, according to many economists, have increased "too much".

From the social and human standpoint welfare expenditures are important, especially when they contribute to improve the health and the energies of persons belonging to the lower strata of society: in this way they can have and certainly have had positive consequences <sup>also</sup> as regards the growth of production. After

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a point, however, they tend to substitute welfare expenditures that would have been done <sup>in</sup> any case with private money; and since they swell deficit spending, in the long run they tend to have the negative effects mentioned above: inflationary pressure, crowding out of private investment; slowing down of productivity increases and of economic growth. And yet, the expansion of public spending, for welfare and other purposes, and the fiscal policy followed, on Keynesian lines, for stabilizing the behaviour of the economy had positive results on economic growth for at least a quarter of a century. Afterwards, in the last two or three decades, the picture changed and in most industrialized countries we ~~have~~ experienced a considerable fall in the rate of growth and, in several years, that new phenomenon called "stagflation". As in the years of sustained prosperity - interrupted only by mild recessions, not by depressions - the prestige of the Keynesian theory was high and even increasing, when the slowing down of growth and stagflation became dominating components of the economic picture a crisis of the Keynesian theory emerged. Indeed, "stagflation" is a phenomenon that flatly contradicts one of Keynes's fundamental assumptions, that is, that wages and prices remain <sup>approximately</sup> stable until there is a substantial unemployment.

The reasons of this contradiction are complex and are to be found, first, in the shortcomings of the Keynesian system concerning the ~~mix~~ analysis of wages, prices and profits of their interrelations and, second, in Keynes's neglect of foreign variables. The first kind of problems belongs prevalingly to microeconomics, that not only Keynes but also his followers tend to treat in too general and therefore unsatisfactory terms.

I will not try to go deep into these matters; I limit myself to observe that, according to Keynes, as long as unemployed

resources are plentiful, wages and prices are stable; when unemployment shrinks to very low levels, wages go up and, owing to decreasing returns to scale, prices rise even more. The serious shortcomings<sup>of this conception</sup> are of two kinds: first, prices do not depend only on wages, but also on raw materials (including the sources of energy); and productivity does not remain stable as long as unemployed resources are plentiful nor it tends to fall when an output expands and unemployed resources shrink. In a realistic analysis it must be recognized that, contrary to Keynes's assumptions, productivity tends to increase in all conditions, but especially when output increases. As for profits, we have to distinguish between profit margins, total profits and the rate of profits, both current and expected. Keynes devotes his analysis almost exclusively to the current and expected rate of profits and attributes paramount importance to the scarcity or abundance of capital (the rate of profits tending to fall with the increase of capital stock) and to the psychology - optimistic or pessimistic - of businessmen. ~~It~~ It is true that, as far as global profits are concerned, it is easy to enlarge Keynes's analysis by using Kalecki's important suggestions concerning the influence of total investment, public deficit and international trade surplus on global profits. <sup>(however,</sup> What is lacking<sup>)</sup> is a microeconomic analysis concerning the factors affecting the profit margins and their variations; and here we meet the problems of the behaviour of wages and prices, of productivity and of the markup over direct costs, <sup>that is not constant,</sup> There is no doubt that, in the analysis of business fluctuations, we have to devote a careful study to the mechanism governing financial speculations; but in such a study too much attention has been devoted to expectations and to psychological factors per se and too little ~~attention~~ to the "objective" factors determining the variations of profit margins. Thus, it is certainly true that the immediate cause of the great depression that started in 1929 was the collapse of a gigantic wave of financial speculation;



but it is also true that behind that speculation we do not find simply "waves of irrational psychology" (Keynes) nor simply serious mistakes in the monetary and credit policy; we find a spectacular shift of the distribution of income in favour of profits - a shift mainly due to the downward rigidity of prices: in the twenties wages were approximately stable and so were the prices of raw materials, whereas productivity was increasing at a relatively rapid rate. Paradoxically, the most serious depression in the history of modern industrial capitalism was the consequence <sup>not</sup> of profits being too small, but of profits being too large (a question that was very briefly hinted in my monograph and then amply developed in an article of 1981). The combination of those two phenomena - downward price rigidity and productivity increases - are, then, at the root of the great increase of profits and, indirectly, or very indirectly, of the financial speculation and of the great crash. In the Keynesian theory we do not find the instruments to analyze those two phenomena - the Keynesian microeconomic analysis is both conventional and partial. Similarly, when in 1973 and 1974 the prices of oil and of raw materials <sup>exploded,</sup> Keynes theory could give practically no <sup>neither on the causes of that explosion nor on its consequences.</sup> explanatory contribution. At the same time, a huge ~~trade~~ deficit was opened in the trade balance of most industrialized countries - a situation, again, outside the Keynesian theory, that neglects foreign variables. <sup>Since then,</sup> the upward push of oil and raw materials prices, by affecting the cost of living, determined an upward push of wages, that have increased more rapidly than productivity. As a consequence of the increase in the prices of oil <sup>and</sup> of raw materials, <sup>also</sup> ~~and~~ the cost of wage labour per unit of output <sup>increased; all such increases pushed up</sup> ~~determined an increase in~~ the prices of finished products. <sup>occurred</sup> And this, often, when unemployment was high



and even increasing. <sup>Here</sup> it is well to point out that, whereas the Phillips relation is implicit in the Keynesian theory, this is not the case for the Lipsey relation :

$$\text{Phillips relation: } \hat{w} = a + bU^{-1}$$

$$\text{Lipsey relation: } \hat{w} = a + bU^{-1} + c\hat{v}$$

where  $\hat{w}$  is the rate of change of wages,  $U$  the rate of unemployment and  $\hat{v}$  the rate of change of the cost of living. The difference becomes very important when the rate of increase in the cost of living is due to an impulse coming from foreign variables. Moreover, in recent times, due to the increase of trade unions market power and to the decreasing "disciplining" influence of unemployment (depending, in its turn, on certain innovations in the <sup>social</sup> legislation and, more generally, on the increase in the average family income), we observe wage increases even when unemployment is large and the cost of living relatively stable.

4. Among the foreign variables, we have to consider not only the prices of raw materials (and of oil) and those of finished products traded in the international markets, but also capital movements and, above all, the exchange rates, which, after the abandonment of Bretton Woods, have oscillated violently, thus aggravating the variability - in the upward as well as in the downward direction - of raw materials prices. And, owing to the downward rigidity of the prices of finished products, there is a sort of ratchet effect: the increases in the prices of raw materials are shifted on those of finished products, whereas the decreases are <sup>(shifted to a much smaller extent,</sup> so that, when the prices of raw materials fall we notice a diminution in the rate of increase in the prices of finished products, but not an absolute fall of them. This behaviour, however, depends also on the fact that the cost of

wage labour per unit of output tends to increase almost without interruptions.

5. If it is true that the main shortcomings of the Keynesian theory arise out of the insufficient attention paid by Keynes and by most of his followers to microeconomic problems, then, we have to try and enlarge the analysis of price and wage variations and of the factors governing the profit margins. More generally, we have to work for a full integration between macro and microeconomics. <sup>To day</sup> It appears to me that the analysis that I worked out thirty years ago had non-negligible shortcomings; yet, I think that it can supply a start - though no more than a start - for such an integration, that has to be pursued adopting a dynamic approach.

6. As for the problems of economic instability and of unemployment, that belong prevalently to the area of macroeconomics, we cannot derive much help from the diagnosis proposed by the monetarists as an alternative to that worked out by the Keynesians. On the contrary, we can still derive a considerable help from the Keynesian system, provided that, on the theoretical plane, ~~we~~ we <sup>reconsider</sup> ~~try to face~~ the microeconomic problems <sup>of prices and wages</sup> and, on the practical plane, we give low priority to unproductive expenditures and high priority to public investment. A proper approach to ~~the~~ microeconomic problems may suggest that a policy of expansion of public investment is to be supplemented by proper measures - including variations of taxation - to moderate the increases both of wages and prices. In fact, if it is true that today the conditions of free competition are no more the rule neither in the labour markets nor in many markets of industrial goods and of services, then, an incomes policy is advisable to create circumstances favourable to a policy of sustained growth. More generally, it seems to be advisable an economic policy agreed upon by the great actors of economic life, that is, associations

of producers, trade unions and government. And, as the Japanese experience clearly shows, private firms are not necessarily hostile to the social control of investment and even of the directions to be assigned to investment, when this does not mean regulations or decisions imposed on the firms by the public authority, but <sup>reflect</sup> decisions taken in agreement with the great actors of economic life. It should be added, however, that probably the most efficient ways to carry out the social control of investment are indirect rather than direct; direct public investment can be limited to what is necessary as a supplement to reach a predetermined total amount. And since employment rather than the growth of income is to be promoted, the State has to create conditions favourable to the gradual reduction of the working time - without damaging the international competitiveness of the commodities produced in the country concerned - and to all sorts of part-time jobs. Moreover, if it is true that the market is a mechanism that does not operate always and necessarily in a socially desirable way, the State has to intervene to strengthen the dynamic characteristics of the market; to do this, it has to <sup>remove the</sup> ~~avoid creating~~ obstacles to the exit of obsolete units and has to <sup>create</sup> ~~recreate, whenever possible,~~ the conditions favourable to <sup>(entry, especially to)</sup> ~~the freedom of entry,~~ <sup>(of innovators, for</sup> ~~instance, by providing auxiliary services and technical assistance~~ ~~that in our time have been reduced by the process of concentration to new firms.~~ ~~and by the process of differentiation.)~~ In other words, the problem is to enhance the dynamic potentialities of the market in order to favour the introduction of technological and organizational innovations. In the final analysis, the problem is to recreate <sup>(in the modern conditions, the essential characteristics)</sup> or to strengthen, ~~at least the most important conditions~~ of classical competition: a conception that is mentioned in the opening paragraph of this paper.

Sraffa's Theory of Markets

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Appunti per il convegno su Sraffa a Firenze  
(agosto 1985)

1. "On the relations between cost and output": constant costs and constant returns (in a dynamic sense)
2. "The laws of returns under competitive conditions": from the assumption of competition to the assumption of monopolistic conditions
3. Partial analysis: the theory of the firm and the theory of markets; the marginal approach and the classical approach. Robinson and Chamberlin; Kalecki
4. General analysis: the arch and the spiral. Equilibrium conditions and the conditions for reproduction
5. Conclusions: suggestions that can be drawn from Sraffa's analyses for the development of the theory of markets

Marginal approach

Classical approach

Partial analysis

Competition: great numbers of firms; each firm: very small.  
 Noncompetitive conditions: demand curve with a slope; marginal revenue.  
 Marshall, Pigou. J. Robinson, Chamberlin  
 Expansion of the firm (not considered, but): rising marginal cost in competition, that is the rule

Free entry or difficult entry  
 Entry-preventing price in noncompetitive conditions  
 Short hints: Breglia, Sraffa; Kalecki and others

General analysis

General equilibrium system: the arch. Main object of the study: equilibrium conditions, especially: equilibrium price (seen as the keystone of the arch)  
 Walras, Pareto; Arrow, Debreu

Decreasing demand curve for the individual firm; limitations in obtaining external finance; self-finance

Main object: conditions for reproduction. The economy is seen as a spiral (production with a surplus); Sraffa considers one period only. The study of a growth process implies the consideration of several periods. First approximation: no change in inputs, no new goods, competition (one profit rate). Successive approximations: those assumptions are relaxed.

The original Keynesian theory can be defined as a general macroeconomic analysis based on an arch-type approach logically similar to the Marshallian one.

The post-Keynesian models of economic growth aim at a general macroeconomic analysis of a spiral-type process extending into several periods.

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Summary

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8. Cost variations and price variations
9. Autonomous and induced innovations
10. The distribution of the fruits of technical progress
11. The downward rigidity of prices and the economies of scale
12. Unemployment and economic stagnation
13. A dynamic Keynesian policy
14. Monetary policy and incomes policy

II

1. The economies of scale
2. The obstacles to the diffusion of innovations
3. The decreasing importance of the economies of scale and Third World countries
4. The need of external stimuli to the expansion of demand
5. Military expenditures and social welfare expenditures
6. The tendency to stagnation
7. Stagflation and the Keynesian theory
8. Micro and macroeconomics
9. An economic policy to promote innovations and employment

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6. The full cost principle is not simply a rule of thumb: it is susceptible of a full fledged theoretical explanation that can open the door to interesting analytical developments. - Since that principle implies a markup over cost - and, in particular, over direct cost -, the task of the theorist is to explain both the level of the markup in a given situation and its variations; if costs and cost variations are assumed to be outside the influence of individual firms, these two problems coincide with those of price determination and price variations.

7. The markup tends to move inversely with direct costs. - In a given situation, the markup depends on the equilibrium price and ~~cost~~<sup>direct</sup> cost. In the course of time the firms which act as price leaders modify the price on the base of the markup when direct cost change. But the markup is not constant: it tends to move inversely with direct costs.

8. The shift of cost variations over prices is partial and asymmetrical. - The proposition <sup>recorded</sup> ~~under~~ <sup>the effects of</sup> the previous heading implies that the shift of <sup>direct</sup> costs onto prices tends to be partial; as shown by an empirical investigation carried out several years after the publication of my monograph (in 1979), the shift is not only partial but also asymmetrical: as a rule in the short-run - year by year - it is never complete, but it is greater when costs rise and considerably smaller when costs fall. The theoretical explanation of this behaviour is to be

found in the different intensity, in the course of time, of the so-called oligopolistic interdependence; this changing intensity is to be related, basically, to the pressure of foreign competition and to the different role of the two fundamental components of the direct cost, that is, the cost of wage labor per unit of output and the cost of raw materials (these propositions, only hinted in my monograph, have been extended and developed in an article of 1979).

9. It is analytically important to distinguish between autonomous innovations and those determined by economic impulses. - Autonomous <sup>determined</sup> innovations are those not determined, at least not directly, by economic impulses; induced innovations are those determined by such impulses and, in particular, by an increase of demand or by an increase of wages more rapid than the increase in the prices of machines, ~~so as to~~ stimulate the introduction of new machines capable of saving labour. (These propositions are scattered in my monograph; they have been re-ordered and developed in an article of 1983, where I also present the results of an empirical enquire concerning the changes in productivity.)

10. Under competitive conditions the increase of productivity due to technical progress is distributed in the form of falling prices, nominal incomes remaining constant; under oligopoly, in the form of increasing nominal incomes at constant prices. - In fact, ~~under~~ <sup>when conceived in a dynamic framework, is the market form</sup> competition, ~~to be conceived as a situation~~ in which both entry of new firms and the diffusion of innovations are relatively easy, whereas in oligopoly entry is not easy and innovations are not necessarily accessible to all firms. The alternative (falling prices and constant nominal incomes in competition or constant prices and increasing nominal incomes in oligopoly) is presented in extremely simplified terms: real behaviours are always a combination of the two courses (the case of nominal incomes increasing more rapidly than prices can be seen as a variant of the second course). Historically, in the past century the former course was more frequent, whereas the latter course is the rule in our century. And

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if it is true that in both cases real incomes increase, the overall consequences are not the same, at least for two reasons. First, because under oligopoly real profits and/or real wages (depending on the varying relative strenght of the two contracting parties) tend to increase in certain firms and in certain industries more than in others; second, because the very process of economic growth is affected, as explained below.

11. The downward rigidity of prices of the means of production and the increasing importance of the economies of scale represent new obstacles to the process of growth. - The downward long-run

rigidity of prices precludes that particular stimulus to the growth of output provided by the fall in the prices of the means of production. (Under contemporary conditions, the prices of all

goods tend to become rigid in a downward direction - see point n.10; such a phenomenon, however, becomes an obstacle to growth when the prices involved are those of the means of production: I notice that in working out this proposition (in 1956)

I came across, without fully realizing the importance of the question, with the distinction, that plays a crucial part in Sraffa's model, between basic and non-basic goods: see p.145n).

At the same time, the increasing importance of the economies of scale - both \*static\* and \*dynamic\* - create an additional obstacle to the expansion of production. But since productivity tends to increase anyhow - due to autonomous innovations financed out of depreciation funds and to innovations stimulated by the increase in wages - unemployment would tend to increase. The

increasing importance of the economies <sup>of scale</sup> and the consequent increasing importance of technological discontinuities create obstacles to the expansion of production because the new firms are in a position to enter into the market only if this is large enough <sup>if</sup> it is expanding at a sufficiently high rate.

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Thus, in several branches the obstacle to entry depend, jointly, on the economies of scale and on the size of the market. (The previous propositions open the door to the transition from micro to macroeconomics; the propositions briefly summarized under points n.12<sup>2,3</sup>) and 14 fully belong to the latter type of analysis).

12. The tendency to economic stagnation and the consequent tendency of unemployment to rise can be offset by stimuli that are external to the system of private firms. - Of these stimuli, public spending is the most important one. The conclusion is, then, that a Keynesian policy of a dynamic character is necessary to combat economic stagnation and a long run increase in unemployment.

13. A dynamic Keynesian policy is likely to consist prevalingly of unproductive public expenditure, since productive expenditure, that is, public investment, is likely to meet with <sup>obstacles of</sup> organizational and, even more, ideological and political nature. - It is true that Keynes apparently put, on the same plane both the policies intended "to rise the propensity to consume" (through public expenditure and taxes imposed upon the rich) and the policies intended to expand investment, including "a somewhat comprehensive socialization of investment". But, considering the gravity of the obstacles concerning the second line (expansion of investment), it was the first line (increase of consumption) that <sup>was</sup> likely <sup>to</sup> prevail. ~~But~~ <sup>At a certain moment,</sup> as I observed in my monograph, such a line was likely to determine an expansion of demand more rapid than the expansion of production and, thus, to give rise to a long run inflationary pressure.

14. The downward rigidity of prices and wages reduces the scope for monetary policy and makes it convenient an incomes



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policy, which, however, meets with very serious obstacles. - Here I quote a passage of my monograph: "Monetary policy loses much of its efficacy when many prices and wages, especially in key branches of production, are no longer the result of the impersonal play of demand and supply but are 'administered' by companies and trade unions. There has been some talk of making wage and price administrators subject to certain controls, but any move in this direction would obviously encounter the strongest obstacles, particularly of an ideological and political nature" (p.204).

## II

In the propositions presented in the previous section I am unable to see ~~some~~<sup>serious</sup> mistakes to be corrected. I do see, however, propositions insufficiently developed and perspectives to be modified or even radically changed.

As for the propositions to be developed, in the previous section I hinted that some of them were in fact developed in articles written in 1979 and 1983 (see points 8 and 9). The perspectives to be modified refer, first, to the economies of scale and, second, to the dynamic Keynesian policy. In this connection, it is advisable to devote a few observations on to the much broader question of the crisis of the Keynesian theory. Here a ~~new~~ fundamental theoretical question comes to the fore, that is, the integration between micro and macro-economics; this, after all, was the main analytical aim of my monograph.

1. Let us begin with the problem of the economies of scale. I realize that, although in my book I was recognizing the vitality and the possibility of growth of small firms, I tended to overemphasize the importance of the economies of scale and, correspondingly, of large firms. Today this appears to me to be a reaction to the propensity of the majority of economists, who, after mentioning the economies of scale, completely neglect them in their theoretical models. However, there is also a special reason why the emphasis given to the economies of scale thirty years ago was ~~somehow~~ more justified than it



*come l'idea di un "flexible automation"  
per il tipo di "growth" in modo di espansione*

is today. In fact, there is no doubt that for a long period, the economies of scale - static and, even more, dynamic - have been very important in many branches and especially in those branches that have played a key role in industrial development, such as steel, electricity, cement, basic chemical industries - to mention only a few. Still now in these and other branches economies of scale are important (\*static\* economies of scale are those that can be obtained given <sup>technical knowledge</sup> technology; \*dynamic\* economies of scale are those arising from technical progress when certain innovations can be introduced only at condition to increase output). The process of concentration, that has characterized several fundamental branches of the economy, has been originated by the increasing importance of the economies of scale, especially of the dynamic ones: a ~~decreasing~~ decreasing number of units have produced increasing quantities of output, because, owing to technical and organizational progress, this was the way to increase efficiency and reduce costs. In other branches of production a process of differentiation has taken place, as a consequence of quality competition and of advertising, both phenomena occurring especially in the markets of goods and services not catering for elementary needs but for needs of a higher order, where consumers' preferences have a broad scope. I argued that in such markets the obstacles to entry are given by the large "installation" selling costs - the costs to be incurred to build up a sales organization capable of competing with that of existing firms and to make the product or products known to potential customers through an "installation" advertising campaign, designed to break through into the market. I argued, too, that, such (let us say) commercial

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obstacles to entry have effects similar to those of the economies of scale the size of the new firm cannot be too small relative to the market owing to the "installation" selling costs to be recouped.

However, in the last ten or twenty years both technological and "commercial" economies of scale seem to have a decreasing importance. In fact, in several industrialized countries employment in small firms and in family or individual units ("self-employed"), that until ten or twenty years ago was showing both a relative and an absolute decline, in recent times has shown a considerable growth. The reasons of this new development seem to be many. First, the recent innovations, especially electronics, have created an important and probably increasing economic space for small and dynamic units. Second, the trade union pressure has induced several large companies to subcontract several activities to small firms - small firms are less liable to bear the negative effects of such pressure; moreover, such firms do not bear the limitations, imposed by law, on hiring and firing workers. Third, in the latest stage of economic evolution industry is expanding at a decreasing rate, whereas services are expanding at an increasing rate; ~~in~~ in services there is less scope for technological economies of scale and <sup>that</sup> even the "installation" selling costs are less important than in the production of commodities. <sup>In such circumstances</sup> to "break through" in a given market the location or - in different contexts - the skill and the reputation of the suppliers are more important than advertising campaigns. In the case of highly technical services necessary to companies, or to self-employed, or <sup>to</sup> special institutions - like scientific institutions - ~~the~~ the economies of scale or advertising campaigns are even less important; on the contrary, the ability of introducing or exploiting innovations due mainly to skill and scientific knowledge becomes more and more important. In contrast with the economies of scale, I would call the economies that are favoured by small size "economies of specialization". Smith's

division of labour and the consequent increase in the number of <sup>in all lines of production, old and new,</sup> ~~productive~~ operations can take place either in a decreasing number of firms of ever larger size or in an increasing number of firms; the former type of the division of labour is characterized by the economies of scale, the latter, by the economies of specialization. We could say that for a long period it was the former type of the division of labour that was gaining systematically gaining ground, whereas in recent times it is the latter type that becomes more and more important.

In my monograph, although I did not exclude at all an active role of small firms both in exploiting and in producing innovations, I assumed that the large companies are in a better position to produce innovations, since they can afford expensive research laboratories that smaller firms cannot. I am still convinced that this observation is valid. I have to recognize, however, that small firms have a more important role that I was inclined to admit thirty years ago. Sometimes small firms introduce and develop innovations that are picked up and further developed by large firms; in other cases small firms produce new goods and appliances that only large firms can exploit - this seems often to be the case with robots <sup>(the hegemony applies the quantum).</sup> Still in other cases small firms, by developing certain innovations, grow and become large firms. All in all, the role of small firms, if it is not superior to that of large firms, is not necessarily inferior: if large firms have got the advantage of controlling large financial and organizational means, small firms can be more flexible and enterprising. And if in the past, at least for a long period, the role of large firms was actually in several respects superior, after the development of electronics this is no more so.

The main features of the economic evolution of our time can be effectively described with the words that I find in the paper presented to this Conference by Christopher Freeman and Carlotta Perez and that are worth quoting at length (p.25):

"...The previously dominant energy-intensive mass production paradigm (...) was reaching limits of productivity and profi-



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tability, due to a combination of exhaustion of economies of scale, erosion of profit margins (...), market saturation in some sectors, diminishing returns to technical activities (Wolff's Law) and cost pressure on input prices. On the other hand, the new paradigm, which offers the possibility of renewal of productivity gains and increased profitability, has so far deeply affected only a few leading edge industries and services".

I wish to be clear: I don't mean to say <sup>that</sup> the economies of scale have become unimportant and that the economies of specialization dominate the present-day economic activity. I do mean to say, however, that the latter are becoming more and more important in an increasing number of sectors, whereas the economies of scale, ~~that still dominate in many sectors, are no more necessary in their own right~~ <sup>relative importance. Sometimes we</sup> find a polarization within the same industry; thus, in the electronic industry we have Silicon Valley with its crowd of very small units, showing both a high natality and a high mortality rate; but we also have IBM and Honeywell that are very important not only on the national but also on the international scene.

2. The downward rigidity in the prices of the means of production implies an obstacle to the diffusion of those fruits of technical progress consisting of a series of cost and price reductions. But this downward rigidity of prices is itself the consequence of the fact that under oligopoly, due mainly to the technological and commercial economies of scale, the diffusion of innovations is not easy. In several cases this process meets with another particular obstacle, ~~that is, with~~ <sup>that is, with</sup> a patent — the patent is a legal device intended to assure to the holder a temporary monopoly profit to stimulate investment of money and of scientific efforts to find <sup>and carry out</sup> new processes and new products. But patents do not represent absolute obstacles to the diffusion of innovations.

because, if the new process or the new product is really profitable, then inventors and innovators study different methods or systems to circumvent the obstacle due to the patent; it is a question of time - it can be short -, but then as a rule new methods are found; sometimes they are even more efficient than the original one. Similarly, the obstacles to the process of diffusion of innovations depending on technological and commercial economies of scale can be overcome, though with difficulties; ~~it was never thought the various obstacles to be insuperable~~ they can also be circumvented, as in the case of patented inventions, by diversification and creative adaptation (an invention can stimulate other inventions that are similar from the point of view of the fundamental idea, but different from the technological and economic standpoints). ~~Whereas~~ Whereas in the past, when the economies of scale - especially the technological economies of scale - were dominant in a large number of sectors, the possibilities of circumventing that obstacle through diversification and creative imitation were limited, at present, with the new wave of innovations, <sup>those possibilities</sup> are relatively more numerous, so that the process of the diffusion of innovation can be more vigorous than in the past: the periods of protection of the extraordinary profits (and wages) can become shorter: privileged industries and privileged firms can be such only for more limited periods. Thus, with the decreasing importance of the technological and commercial economies of scale and the increasing importance of small units in industry and ~~in~~ services, the market power of the firms concerning prices is likely to decline; a similar decline is likely to occur in the case of wages and of trade unions, since the two market powers are interdependent.

3. The new economic space opened to small firms - mainly but not only by electronics - is a phenomenon very relevant for Third World countries. As a matter of fact, the size of the market in



such countries is limited and increase very slowly; therefore, the development of the industries where the economies of scale are important is difficult at the very start. If large size is no more a necessity in several lines of economic activity that promise to be dynamic, new possibilities of ~~economic~~ economic growth are opened to Third World countries.

4. All considered, in the new circumstances, with the decreasing importance of the economies of scale, my argument in favour of external stimuli for the expansion of demand loses part of its relevance. This is understandable: all models of economic theory - except the very formal and abstract ones - are historically conditioned. An expansion of demand is always necessary to combat the tendency of stagnation and increasing unemployment, since the long-run downward rigidity of prices of finished products and services is still there; but the expansion of demand can be provided to an increasing extent internally, that is, from the very system of private firms. On the other hand, the expansion of demand provided by public spending seems to be less and less capable of stimulating the growth of income and employment and more and more likely to give rise to an inflationary pressure. I was mentioning this risk in my monograph; but it appears that in recent times an inflationary pressure can start much in advance than full employment is reached. Why?

5. Among public expenditures to be considered as a long-run stimulus to demand - military expenditures, social welfare, public investment and others - thirty years ago I gave too much stress on military expenditures and too little to social welfare expenditures. It is true that after the second world war several times military expenditures gave a support of a Keynesian type to the expansion of effective demand; it is also true that it was evident the increasing importance of what was then called the "industrial military complex"; finally, it is true that thirty years ago social expenditures were



not growing at the rate reached afterwards and had only limited weight in the budget of Western countries. But it was not too difficult to foresee the growth of those expenditures, since the foundations of the modern Welfare State were already been laid and the theoretical support for that growth had already been provided by Keynes and his followers. The unbalanced <sup>judgment</sup> ~~^~~ - too much stress on military expenditures and too little on social welfare expenditures - gave the impression that the United States are bound, for economic reasons, to adopt an aggressive policy, whereas this is not necessarily the case. I was referring to the United States since economically this is the most powerful country in the so called Western World; in my view, in the other countries the main impulse to growth was originating, directly or indirectly, from the expansion of the American economy - apart, to be sure, from the internal impulses. Although the cyclical growth of the various western countries is not fully synchronous and although the American economy does not always act as "the locomotive of growth", the basic thesis seems to be well founded: what is to be criticized is the weight attributed to the <sup>various</sup> ~~^~~ impulses concerning investment in the United States.

6. After emphasizing what today seems to me open to criticism in my book either from the point of view of assumptions or from the point of view of perspectives, now I wish to mention a criticism that has been raised to my book and that seems ~~to~~ to be wholly unfounded. It has been said that my analysis implies that the gradual expansion of oligopolies would fatally bring with itself a tendency to ~~the~~ stagnation. The misunderstanding is this, that I consider that tendency as a virtual movement, comparable to the Malthusian tendency of population, virtually growing at the rate of a geometric progression; in actual fact such growth would, time and again, fall in line with subsistences, that tend to grow according to an arithmetic progression. In the case of the virtual tendency that I was (and I am) suggesting, it could have (and often has) been completely offset by policies of a Keynesian type, intended to support the expansion of total demand. ~~The~~ ~~misunderstanding~~ ~~may~~ ~~appear~~ ~~clearly~~ ~~if~~ ~~one~~ ~~reflects~~ ~~on~~ ~~the~~ ~~discussion~~ ~~that~~ ~~I~~ ~~devote~~ ~~to~~ ~~the~~ ~~Keynesian~~ ~~policies~~ ~~and~~ <sup>(in Part Three)</sup> and if one considers that at the very conclusion of my monograph I emphasize the Paretian distinction between virtual and actual movements: virtual movements become actual when the countervailing



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forces either do not operate or operate at a relatively weaker intensity.

These observations are fully consistent with the experience of the Thirties when, after the great crash of 1929, a tendency to stagnation appeared in the American economy: in fact, in that period the countervailing impulses of a Keynesian type - this is the point - were insufficient. A tendency to stagnation has appeared again in the last ten or fifteen years, together with an inflationary pressure; it is to be observed, however, that, rather than stagnation, a slowing down of the process of growth has occurred, a slowing down that has come out to be largely refractory to Keynesian policies. As we will shortly see, some of the reasons of the decreasing efficiency of such policies can be understood by means of an analysis of <sup>prices and</sup> wages ~~and prices~~ similar to that worked out in "Oligopoly and Technical Progress". All considered, the main shortcoming of the Keynesian theory is that it is largely a macroeconomic one: the bridge between macro and microeconomic analysis is inadequate.

7. In the monograph under discussion I was pointing out that unproductive public expenditure, whatever the purposes, in the long run tends to create an inflationary <sup>pressure</sup> ~~pressure~~ if it increases "too much", generating a systematic deficit spending; we may add that such a deficit spending tends to determine a crowding out of private investment - a possibility that in principle was not denied by Keynes.

Let us consider, in particular, welfare expenditures, that in the last ten or twenty years, according to many economists, have increased "too much".

From the social and human standpoint welfare expenditures are important, especially when they contribute to improve the health and the energies of persons belonging to the lower strata of society: in this way <sup>these expenditures</sup> ~~they~~ can have and certainly have had positive consequences <sup>also</sup> ~~as~~ regards the growth of production. After

a point, however, they tend to substitute welfare expenditures that would have been done <sup>in</sup> any case with private money; and since they swell deficit spending, in the long run they tend to have the negative effects mentioned above: inflationary pressure, crowding out of private investment, slowing down of productivity increases and of economic growth. And yet, the expansion of public spending, for welfare and other purposes, and the fiscal policy followed, on Keynesian lines, for stabilizing the behaviour of the economy had positive results on economic growth for at least a quarter of a century. Afterwards, in the last two or three decades, the picture changed and in most industrialized countries we ~~now~~ experienced a considerable fall in the rate of growth and, in several years, that new phenomenon called "stagflation". As in the years of sustained prosperity - interrupted only by mild recessions, not by depressions - the prestige of the Keynesian theory was high and even increasing, when the slowing down of growth and stagflation became dominating components of the economic picture, a crisis of the Keynesian theory emerged. Indeed, "stagflation" is a phenomenon that flatly contradicts one of Keynes's fundamental assumptions, that is, that wages and prices remain <sup>approximately</sup> stable until there is a substantial unemployment.

The reasons of this contradiction are complex and are to be found, first, in the shortcomings of the Keynesian system concerning the ~~own~~ analysis of wages, prices and profits of their interrelations and, second, in Keynes's neglect of foreign variables. The first kind of problems belongs prevalently to microeconomics, that not only Keynes but also his followers tend to treat in too general and therefore unsatisfactory terms.

I will not try to go deep into these matters; I limit myself to observe that, according to Keynes, as long as unemployed

resources are plentiful, wages and prices are stable; when unemployment shrinks to very low levels, wages go up and, owing to decreasing returns to scale, prices rise even more. The serious shortcomings <sup>of this conception</sup> are of two kinds: first, prices do not depend only on wages, but also on raw materials (including the sources of energy); and productivity does not remain stable as long as unemployed resources are plentiful nor it tends to fall when ~~an~~ output expands and unemployed resources shrink. In a realistic analysis it must be recognized that, contrary to Keynes's assumptions, productivity tends to increase in all conditions, but especially when output increases. ~~It is not possible~~ We have to distinguish between profits margins, total profits and the rate of profits, both current and expected. Keynes devotes his analysis almost exclusively to the current and expected rate of profits and attributes paramount importance to the scarcity or abundance of capital (the rate of profits tending to fall with the increase of capital stock) and to the psychology - optimistic or pessimistic - of businessmen. It is true that, as far as global profits are concerned, it is easy to enlarge Keynes's analysis by using Kalecki's important suggestions concerning the influence of total investment, public deficit and international trade surplus on global profits. What is lacking <sup>(however,</sup> is a microeconomic analysis concerning the factors affecting the profit margins and their variations; and here we meet the problems of the behaviour of wages and prices, of productivity and of the markup over direct costs, <sup>that is not constant.</sup> There is no doubt that, in the analysis of business fluctuations, we have to devote a careful study to the mechanism governing financial speculations; but in such a study too much attention has been devoted to expectations and to psychological factors per se and too little ~~attention~~ <sup>which condition speculative movements,</sup> to the "objective" factors determining the variations of profit margins. Thus, it is certainly true that the immediate cause of the great depression that started in 1929 was the collapse of a gigantic wave of financial speculation;

but it is also true that behind that speculation we do not find simply "waves of irrational psychology" (~~assumes~~) nor simply serious mistakes in the monetary and credit policy. We find a spectacular shift of the distribution of income in favour of profits - a shift mainly due to the downward rigidity of prices: in the twenties wages were approximately stable and so were the prices of raw materials <sup>and those of finished products,</sup> whereas productivity was increasing at a relatively rapid rate. Paradoxically, the most serious depression in the history of modern industrial capitalism was the consequence <sup>not</sup> of profits being too small, but of profits being too large (a question that was very briefly hinted in my monograph <sup>and in a paper of 1983,</sup> and then amply developed in an article of 1981). The combination of those two phenomena - downward price rigidity and productivity increases - are, then, at the root of the great increase of profits and, indirectly, or very indirectly, of the financial speculation and of the great crash. In the Keynesian theory we do not find the instruments to analyze those two phenomena - the Keynesian microeconomic analysis is both conventional and partial. Similarly, when in 1973 and 1974 the prices of oil and of raw materials exploded, <sup>the</sup> Keynesian theory could give practically no explanatory contribution neither <sup>on</sup> concerning the causes of that explosion nor <sup>on</sup> its consequences. At the same time, a huge deficit was opened in the trade balance of most industrialized countries - a situation, again, outside the Keynesian theory, that neglects foreign variables. Since then, the upward push of oil and raw materials prices, by affecting the cost of living, determined an upward push of wages and of direct cost of labour per unit of output, since often wages have increased more rapidly than productivity - strictly speaking, more rapidly than productivity increases due to innovations accessible to all firms. As a consequence of all such increases, the prices of finished products have increased, too. And this often occurred when unemployment was



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and even ~~decreasing~~ <sup>(rising. Here</sup> it is well to point out that, whereas the Phillips relation is implicit in the Keynesian theory, this is not the case for the Lipsey relation :

$$\text{Phillips relation: } \hat{w} = a + bU^{-1}$$

$$\text{Lipsey relation: } \hat{w} = a + bU^{-1} + c\hat{v}$$

where  $\hat{w}$  is the rate of change of wages,  $U$  the rate of unemployment and  $\hat{v}$  the rate of change of the cost of living. The difference becomes very important when the rate of increase in the cost of living is due, not to a change in wages, but to an impulse coming from foreign variables. (The slowing down of inflation in the last two years in western countries depends first of all on the fall of raw materials prices and of oil). Moreover,  $\rightarrow$  <sup>Moreover</sup>  
 $\rightarrow$  in recent times, due to the increase of trade unions market power and to the decreasing "disciplining" influence of unemployment (depending, in its turn, on certain innovations in the <sup>social</sup> legislation and, more generally, on the increase in the average family income), we observe wage increases even when unemployment is large and the cost of living relatively stable.

8. Among the foreign variables, we have to consider not only the prices of raw materials (and of oil) and those of finished products traded in the international markets, but also capital movements and, above all, the exchange rates which, after the abandonment of Bretton Woods, have oscillated violently, thus aggravating the variability of raw materials prices - free competition, the rule in such markets and the forces of speculation can have full sway. The increases in raw materials prices push up directly (via costs) and indirectly (via wages) the prices of finished goods, whereas the decreases in the former prices, however large, at best will determine a very limited fall in the latter prices, owing to the tendency of nominal wages to increase or to be rigid downward. (The main roots of "stagflation" are to be found in the above sequence).

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If it is true that the main shortcomings of the Keynesian theory arise out of the insufficient attention paid by Keynes and by most of his followers to microeconomic problems, then, we have to try and enlarge the analysis of price and wage variations and of the factors governing the profit margins. More generally, we have to work for a full integration between macro and microeconomics. <sup>Today</sup> It appears to me that the analysis that I worked out thirty years ago had non-negligible shortcomings; yet, I think that it can supply a start - though no more than a start - for such an integration, that has to be pursued adopting a dynamic approach.

9. As for the problems of economic instability and of unemployment, that belong prevalently to the area of macroeconomics, we cannot derive much help from the diagnosis proposed by the monetarists as an alternative to that worked out by the Keynesians. On the contrary, we can still derive a considerable help from the Keynesian system, provided that we substitute its psychological with "objective" assumptions and reconsider the microeconomic problems of prices and wages; on the practical plane, we have to abandon the strictly short-run standpoint, typical of that system; among other things, this means that public authority should give low priority to unproductive expenditures and high priority to public investment; moreover, a policy of expansion of public investment is to be supplemented by proper measures - including variations of taxation - to moderate the increases both of wages and prices. In fact, if it is true that today the conditions of free competition are no more the rule neither in the labour markets nor in many markets of industrial goods and of services, then, an incomes policy is advisable to create circumstances favourable to a policy of sustained growth. More generally, it seems to be advisable an economic policy agreed upon by the great actors of economic life, that is, associations

T by taking a  
dynamic point of  
view and by  
taking into account  
the foreign  
variables

of producers, trade unions and government. And, as the Japanese experience clearly shows, private firms are not necessarily hostile to the social control of investment and even of the directions to be assigned to investment, when this does not mean regulations or decisions imposed on the firms by the public authority, but, <sup>reflect</sup> decisions taken in agreement with the great actors of economic life. It should be added, however, that probably the most efficient ways to carry out the social control of investment are indirect rather than direct; direct public investment can be limited to what is necessary as a supplement to reach a predetermined total amount. And since employment rather than the growth of income is to be promoted, the State has to create conditions favourable to the gradual reduction of the working time - without damaging the international competitiveness of the commodities produced in the country concerned - and to all sorts of part-time jobs. Moreover, if it is true that the market is a mechanism that does not operate always and necessarily in a socially desirable way, the State has to intervene to strengthen the dynamic characteristics of the market; to do this, it has to remove the obstacles to the exit of obsolete units and has to create conditions favourable to entry, especially to entry of innovators, for instance, by providing auxiliary services and technical assistance to new firms. In other words, the problem is to enhance the dynamic potentialities of the market in order to stimulate the introduction of technological and organizational innovations. In the final analysis, the problem is to recreate or to strengthen, in the modern conditions, the essential characteristics of classical competition: a conception that is mentioned in the opening paragraph of this paper.

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Chapter 8: On the Concept of the Optimum Rate of Profit (1981)

Chapter 9: Keyes's General Theory and the Great Depression (1983).

The work by M. Kalecki concerning the determinants of profits is included ~~as~~ as chapter 7 in the volume Selected Essays on the Dynamics of the Capitalist Economy 1933-1970, Cambridge University Press, 1971.

The results of the investigations by A.W. Phillips and R.G. Lipsey mentioned in the text were published in Economica, November 1958 and February 1970.

Finally I have to point out that the theoretical model from which I derived the econometric model of the Italian economy published in 1967 is largely based on the monograph reconsidered in this paper. (That model originally appeared in Banca Nazionale del Lavoro Quarterly Review, December 1967 and was reprinted, with a few modifications, in the volume Trade Unions, Inflation and Productivity, Saxon House - Lexington Books, Westmead, England, and Lexington, 1974.



El polo de los otros usos Todavía muy infl.  
por sindicatos y petrol. — Hay, por la  
flexible automat. y los sindicatos —