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The Problem of Effective Demand in Italian Economic Development: On the Factors that Determine the Volume of Investment

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CHAPTER III: The Saving/Investment Relationship

Summary: I – Introduction: the relation between saving and investment in the short period and the long period; II – The principle of the independence of private investment from saving in a long-period analysis: its validity; it can take the form of a tendency for the economy's saving capacity to adjust to the normal level of investment spending; III – The importance of the principle in question for the study of unemployment in Italy: cumulative effect of the insufficient utilization of savings on the absorption of permanent unemployment.

I

The conclusion to which the theoretical analysis contained in the first part [of this work] has brought us is that, below the upper limit on investment posed by full-employment saving, the level of private investment must be regarded as independent of the saving that can be obtained from the full utilization of productive capacity.[1]

This principle emerged from a discussion of the relation between saving and investment conducted on the supposition that the economy has a given productive capacity. Hence the two characteristics of the analysis conducted in the preceding

* This is a translation of the second section of a 1962 report that Pierangelo Garegnani wrote for the private research institute SVIMEZ (Associazione per lo sviluppo dell'industria nel Mezzogiorno: Centro per gli studi sullo sviluppo economico). The translation was made by Gary Mongiovi; he is grateful to Sergio Cesaratto, Roberto Ciccone, Fabio Petri, Massimo Pivetti and Franklin Serrano for indispensible advice on numerous points. Professor Garegnani, who died in 2011, was notoriously meticulous about matters of nuance; every effort has been taken to convey his meaning with absolute accuracy. The original chapter numbers and section headings have been retained, to facilitate cross-referencing with the original. Footnote numbering has been modified to run consecutively through the entire document, rather than beginning anew with each page. A small number of explanatory remarks and references to the literature have been inserted by the translator in bracketed footnotes.

[1] [The theoretical analysis to which Garegnani here refers has been published in English, in somewhat revised form, as Garegnani (1978, 1979).]

chapters. It was assumed that the physical capital at the disposal of the economy is given. The presence or absence of an excess supply of labour with respect to the existing physical capital was also ignored.[2] The presence of surplus labour was in fact irrelevant to the argument put forth in those chapters: an increase in the demand for goods cannot lead to the employment of idle workers, since those workers lack the productive equipment they require in order to participate in production; surplus labour therefore cannot generally be included in the productive capacity whose utilization depends only on the level of aggregate demand.

We must now abandon the assumption that the economy's productive capacity is given, which is valid only for the short period, and examine what modifications the independence of investment from saving requires in a long-period analysis, where the available physical capital changes as a result of the investment taking place over time. In that context it matters whether the supply of labour exceeds the employment that can be provided by the available stock of productive equipment: for if there is surplus labour, labour does not constitute a limit on the expansion of productive capacity. The two issues described here—the forms and applications of the principle of the independence of investment from saving when the physical capital stock is taken to be variable and labour is in excess supply—are the focus of this chapter.

II

The relation between saving (or consumption) and investment has been investigated thus far by deriving propositions about the relation between the behaviour of real wages and the absorption of 'structural' unemployment in an economy like that of Italy. By its nature, this relation between wages and unemployment concerns the long-period effects of variations in real wages. Increases in real wages affect structural unemployment to the extent that they affect the expansion of the stock of productive equipment, which is in fact the long-period outcome of investment.

What modifications must be made to the principle of the independence of investment from saving when it is applied to a long-period analysis?

From what has been said in the two preceding chapters, it should not be necessary to reassert the substantial validity of that principle, even for long-period analysis. We have already examined the contrary view that investment can fall below full-capacity saving *only* in the troughs of the economic cycle, where the shortfall of investment can be explained as 'frictions' due either to the functioning of the monetary system, which prevents interest rates from quickly adjusting to the return on capital, or to periodic crises in entrepreneurs' 'psychological state of confidence' which make investment spending inelastic with respect to interest rates, or to both circumstances operating together.[3] We

[2]Cfr. the definition of productive capacity, Ch. I, p. 2, n. 1. [The definition is in fact to be found in a footnote on p. 3 of Ch. I: 'Productive capacity must here be taken to mean the economy's existing stock of capital goods as well as the labour necessary for its full utilization.']

[3]Cfr. Ch. II pp. [40–46; see Garegnani, 1979, pp. 64–67].

then showed how this view is ultimately founded on the presumption that under normal economic conditions the interest elasticity of investment is prevalent and high.[4] We then argued that this supposition must be rejected, since neither economic theory nor the facts offer any compelling reason to think that investment is particularly interest-elastic. On the contrary, theory and facts both appear to refute the existence of any such elasticity.[5]

The fact remains however that a considerable shortfall of investment below full-capacity saving generally becomes apparent only in the troughs of the economic cycle. To explain this fact we shall have to examine the form that the principle of the independence of investment from saving takes in a long-period analysis, a form that is somewhat different from that considered in the preceding chapters.

In the short period, where the stock of productive equipment (physical capital) is treated as given, the independence of investment from the economy's capacity for accumulation can take only one form: that of a divergence between investment demand and the demand that would be necessary to ensure the full utilization of productive capacity in the investment goods sector. This divergence, when we take account of its repercussions on the productive system as a whole, leads to a divergence between effective demand and the demand necessary to ensure full utilization of the productive capacity of the entire economic system.[6]

In the long period, the divergence we have just described is no longer the only form that the independence of investment from saving can assume. Since in the long period the stock of productive equipment can change, it can do so in such a way as to adjust itself to the level of demand. To the extent that this occurs, the principle of the independence of investment from saving takes the different form of a tendency for the stock of productive equipment to adjust to the demand for goods, which is to say it takes the form of a tendency for the economy's capacity for accumulation to adjust to the average level of investment that the system undertakes.

We have already had occasion to refer to this phenomenon in Chapter II, when it was noted that any mechanism capable of bringing about the full utilization of productive capacity would have to be able to accomplish this in a sufficiently short period of time, since otherwise the problem would be removed by the disappearance of physical capital and hence by the disappearance of the excess productive capacity.[7] If, over a sufficiently long period of time, there is in fact no tendency for aggregate demand to adjust to productive capacity as the traditional theory supposes, we will then find the opposite tendency for productive capacity to adjust to the level of demand. The surplus capacity will not be replaced and will one way or another be eliminated from the stock of productive equipment. The new plant and equipment created by current investment

[4]Cfr. in particular, Ch. II pp. [41–43; see Garegnani, 1979, pp. 65–67].
[5]Cfr. Ch. I, Secs. V, VI, VII [see Garegnani, 1978, pp. 344–352].
[6]The lower demand for investment goods will lead to a lower real income and hence to a lower demand for consumption goods.
[7]Cfr. Ch. II, p. [59].

will be configured on scales and in sectors determined by what entrepreneurs have discovered through experience about the demand for goods.[8]

It appears implausible to suppose that the average margins of unused productive capacity calculated over a span of time long enough to encompass a number of economic cycles can in general be very high or can greatly exceed the margins explained by the maximum fluctuations in demand anticipated by entrepreneurs. This historically established phenomenon is at times adopted to justify the view that in some sense the traditional theory could retain its validity in the long period, and that investment would therefore tend to adjust to the economy's capacity to save. In reality, for the reasons considered thus far, it appears that the explanation of the phenomenon must be sought in the opposite direction: not in a tendency of investment to adjust on average to the economy's capacity to save, but in a tendency of the economy's capacity to save to adjust to the average level of investment *through variations in the stock of productive equipment*.

It follows then that the principle of the independence of investment from saving, which in the short period manifests itself in a shortfall of investment relative to the savings obtainable from the full utilization of productive capacity, can in the long period also manifest itself in a smaller expansion of productive capacity, and therefore in lower levels of full-employment saving.

Let us now consider more closely this phenomenon of the decrease of the savings that can be obtained from the full utilization of a productive capacity assumed to be variable rather than given. We take as our unit of time the period that on average elapses between the moment at which capital goods are acquired and the moment at which they give rise to additional output, for example a year. If not all of the full-capacity savings obtainable in year $0-1$ are utilized for investment, then from year $1-2$ onwards the economy's productive capacity will be lower than it could have been. Starting from year $1-2$ full-capacity real income will be lower, and so will be the full-capacity savings that can be utilized for investment. That means that a part of the stock of productive equipment obtainable with the foregone investment of year $0-1$ would have been created in sectors that produce investment goods (the division of the additional productive capacity between the investment goods sector and the consumption goods sector would have had to take place in accordance with the division of the additional real income between consumption and saving). This productive capacity in the investment goods sector has not been brought into existence, the result being that from year $1-2$ onwards the productive capacity of the investment goods sector will be lower than it could have been.

The effect just now described is *cumulative*. An initial loss of productive capacity due to a failure to utilize the savings obtainable over a given period of time is in fact translated into a reduction in the savings available in the future; this loss grows over time according to a law analogous to the one by which the value of a given perpetual annuity increases over time through the recurrence of annuity payments combined with the accumulating compound interest on past

[8]The new plant will be constituted, in the first instance, in line with the demand for goods that entrepreneurs *expect*. Should these expectations be disappointed, entrepreneurs will, in the long period, revise their investment plans so as to adjust the plant to the demand for output that is in fact observed.

annuity payments. In fact, that additional productive capacity in the investment goods sector could have given rise in periods $1-2$, $2-3$ etc to the production of investment goods which would, in part, have constituted new productive capacity consisting of permanently utilizable investment goods starting in periods $2-3$, $3-4$ etc respectively.

The quantitative dimensions of this phenomenon clearly depend on the availability of the additional labour required to operate the growing stock of productive equipment. We shall therefore examine them in the next section, where we propose in fact to discuss the importance of the principle of the independence of investment from full-capacity saving in an economy in which, as in the Italian economy, there is an excess of labour with respect to the available stock of productive equipment.

III

It is now possible, on the basis of what has been said so far, to draw some conclusions regarding the importance that the central proposition of Keynes's theory—the independence of investment from full-capacity saving—may have for the study of Italian unemployment.

The applicability of Keynes's analysis to the study of Italian unemployment has often been denied. Italian unemployment, it is asserted, is structural, that is, it stems from the lack of a modern productive stock capable of absorbing all of the available labour. It therefore has a substantially different character from the unemployment found, or once was found, in 'rich' economies where the stock of productive equipment is, in the aggregate, adequate for the labour supply. Italian unemployment is, for example, different from the unemployment experienced in England between the two wars, or from the unemployment we saw in the United States and in Germany as a consequence of the Great Depression. Keynes's theory—the argument continues—can explain the latter sort of unemployment, and was formulated for that purpose. It is not applicable to Italian unemployment or, more generally, to the unemployment of 'non-rich' economies, that is to say, of economies in which there is a shortage of capital.

The argument briefly described here appears to be vitiated by a 'non sequitur'. It seems to be justified when it distinguishes between the two types of unemployment, but unjustified when it draws from that distinction the conclusion that the results of Keynes's analysis do not apply to the Italian situation and then asserts, at times implicitly, that the traditional theory holds in such situations.

This 'non sequitur' appears to be due to the lack of a clear distinction between two aspects of Keynes's work. There is, on the one hand, Keynes's *critique* of the traditional theory of the saving-investment relation. Then, on the other hand, there are the particular economic policies that Keynes and the Keynesians have advocated as the remedy for unemployment. The distinction between the two types of unemployment is convincing as regards the inadequacy of Keynesian economic policies alone to resolve the problem of unemployment in Italy; it is beyond doubt, for example, that a simple expansion of nominal aggregate demand would run up against the limits of the available productive capacity, and would then trigger a high degree of inflation long before bringing about a significant absorption of

unemployment.[9] But when the Keynesian theory denies the traditional proposition according to which every increase in the community's propensity to save corresponds to an increase in private investment, it affirms something that is valid for any market economy, independent of the existence of excess labour.

As regards this second, *predominantly critical*, aspect of Keynes's work, his theory is no less important for the Italian economy than it is for 'rich' economies. It in fact casts light on how the growth of the stock of productive equipment cannot in general be achieved by concentrating economic policy on measures that are likely to stimulate an increase in the community's propensity to save. It instead focuses attention on the factors that determine how high or low will be the level of investment that is necessary for the expansion of the stock of productive equipment and for the creation of new permanent jobs. The increase in the propensity to save, which was for the traditional theory the necessary and sufficient condition for that expansion, appears not to be sufficient. It may not even be necessary, since the saving necessary for the increase in investment can come initially from a higher utilization of the available productive capacity and then, in a second stage, from the expansion of productive capacity that is taking place.

There is a sense in which it might be argued that the central proposition of Keynes's theory has even greater importance for the Italian economy than for 'rich' economies.

In an economy where the stock of productive equipment is already adequate for the supply of labour, the loss to society caused by a shortfall of investment with respect to full-capacity saving is represented exclusively, or almost exclusively, by the output of consumption goods that could be obtained from the unutilized plant and equipment during the time they were left idle. An expansion of the stock of productive equipment through additional investment would not enable output to increase, since the additional labour needed to operate the new equipment would not be available. The erection of pyramids would render a benefit not very different from the construction of a new ironworks factory, the utilization of which would require the abandonment of other equally modern plants elsewhere in the economy.[10] In these economies, small margins of unutilized capacity and of unemployment represent a negligible loss to the economic system as a whole.

The problem presents itself in altogether different terms in the Italian economy, where there is a surplus of labour relative to the available stock of plant and

[9]As is well known, Italian unemployment differs from that found in 'rich' countries during the interwar period by virtue of the fact that it is only partly an 'overt' unemployment. The most visible portion of such unemployment is comprised of the excess of the workforce employed in agriculture, the crafts and commerce over what is required when production in those sectors takes place with modern methods. The absorption of this type of unemployment presents problems of labour mobility and retraining, and therefore could not in any case be accomplished in a short period of time in the way that experience has shown can happen with unemployment in 'rich' countries.

[10]In general, even in these economies additional investment would have the effect of raising output by increasing the productivity of labour in some sectors via the construction of more modern plants. But this effect would undoubtedly be smaller than what we find in an economy where the additional investment would enable the utilization of previously unemployed labour.

The distinction drawn here between the two types of economies is intended to clarify this dissimilarity with reference to the particular situation considered.

equipment. Here, increases in the stock of productive equipment are not constrained by the scarcity of labour; they are instead the objective that economic policy must aim to accomplish. The loss to the community caused by even small deficiencies of investment with respect to full-capacity saving—that is, by even small margins of unutilized productive capacity—then becomes substantial. The loss in fact consists not only of the goods that could have been obtained with the capacity that was left unutilized during the period of deficient demand. It consists also of the goods that could have been obtained in the future from the expansion of the stock of productive equipment had the idle capacity been utilized *to produce investment goods*. Since this second component of loss, unlike the first, is not temporally limited but is cumulative, it takes on dimensions that surpass by far those of the first component of loss when we consider spans of time measured in decades, the intervals to which growth policy applies. What is at issue is the phenomenon already discussed in the preceding section concerning the way that full-employment saving tends, over a long period of time, to adjust to the level of investment. Now, however, when we are concerned with an economy in which there is excess labour, it is possible to give an idea of its quantitative importance using simple calculations based on assumptions that permit the phenomenon to be treated in aggregate terms.

Let us suppose, for example, that during year $0-1$ there is a shortfall of effective demand such that the productive equipment capable of providing employment to x workers is left unutilized. The output lost to society during that year can also be denoted by x; x represents a rough approximation of the community's total loss when we are dealing with a 'rich' economy in which the expansion of production would run up against the obstacle of the shortage of labour.[11] In an economy where an increase in the stock of productive equipment is possible, the loss is significant, and becomes larger the further into the future we extend our calculation. Let us calculate its magnitude after n years. Of the x workers that would have been employed in year $0-1$ had the level of effective demand allowed it, a certain proportion $\frac{1}{m}$ equal to the '(gross) marginal propensity to save' would have been employed in producing investment goods. Such goods, let us suppose, would become available for employment in production at the start of year $1-2$: in that year there would have been a larger stock of productive equipment equal to $\frac{x}{m}$.[12] Supposing that on average it takes c workers to produce in one year the capital goods required to give permanent employment to 1 worker, then from year $1-2$ onwards there would have been a larger level of permanent employment equal to $\frac{x}{mc}$. This higher level of output and employment would have been dedicated

[11]Of course, when the increase in the population of workers exceeds the expansion of the stock of productive equipment, 'rich' economies, too, take on the characteristics of an economy in which there is surplus labour, and the loss due to the failure to utilize productive capacity fully is significant.

[12]The expression $\frac{x}{m}$ measures the increase in gross investment. For our present purposes it is not necessary to calculate investment net of the replacement of the physical capital that was used to produce x. In fact, if in year $0-1$ replacement took place also for plant and equipment that were left idle in that year, then $\frac{x}{m}$ represents a shortfall of *net* investment; if instead this equipment was not replaced in year $0-1$, the stock of productive equipment in $1-2$ would have been correspondingly smaller than that of $0-1$; in this second case as well, therefore, $\frac{x}{m}$ can represent the total loss of productive capacity obtainable in $1-2$ due to the lack of investment in $0-1$.

partly to producing consumption goods, and partly to producing investment goods with the purpose: (a) of replacing the larger stock of plant and equipment, this portion being equal to $\frac{x}{mc}$; and (b) of creating additional productive capacity. Let us suppose that $\frac{1}{m_1}$ is the proportion of the higher output obtained from year $1-2$ onwards that is devoted to creating new productive equipment.[13] Starting from moment 2 the lost increment of permanent employment due to the underutilization of productive capacity in year $0-1$ would be $\frac{x}{mc}+\frac{x}{mm_1c^2}$; at moment 3 the lost increment of permanent employment would be $\frac{x}{mc}+2\frac{x}{mm_1c^2}+\frac{x}{mm_1^2c^3}$; and at moment n, at a distance of n years from moment 1, it would be

$$\frac{x}{mc}+(n-1)\frac{x}{mm_1c^2}+(n-2)\frac{x}{mm_1^2c^3}+\ldots+\frac{x}{mm_1^{n-1}c^n}.$$

This unrealized increment of permanent employment would therefore equal the accumulation of a sum $\frac{x}{mc}$ with interest over n years at a compound rate of $\frac{1}{m_1c}$.[14]

When x measures not the unemployment of labour during a year, but the unemployment of labour over n years due to a deficiency of aggregate demand, the unrealized increment of permanent employment after n years would be:

$$n\frac{x}{mc}+[(n-1)+(n-2)+\quad\ldots\quad+1]\frac{x}{m_1mc^2}+\quad\ldots+\frac{x}{mm_1^{n-1}c^n}$$

This lost increment of permanent employment would be equal to the value after n years of annual payments of $\frac{x}{mc}$ accumulated at the compound rate of interest $\frac{1}{m_1c}$.[15]

[13]In contrast to the fraction $\frac{1}{m}$, which represented the *gross* marginal propensity to save (cfr. the preceding note), $\frac{1}{m_1}$ represents the *net* marginal propensity to save. A part of the output obtainable with the new plant and equipment created from year $1-2$ onwards must in fact be devoted to the maintenance and replacement of this new plant and equipment. For the purely illustrative purposes of this calculation, it is not necessary to take account of the fact that the replacement of new plant and equipment will not take place starting from year $1-2$, but will instead tend to be concentrated in later years in line with what we know from observation about the expansion of physical capital. It is also supposed that the net marginal propensity to save remains constant as real income increases.

[14]The unrealized increment of employment can therefore also be expressed as $\frac{x}{mc}\left(1+\frac{1}{m_1c}\right)^n$. Thus when we wish to calculate the total loss of output consequent upon the underutilization of productive capacity in year $0-1$, it would be given by the sum of x and the value, after n years, of the annuities $\frac{x}{mc}$ that accumulate at the compound annual rate of $\frac{1}{m_1c}$.

[15]The unrealized increment of employment can therefore also be expressed as

$$\frac{x}{mc}\left(1+\frac{1}{m_1c}\right)\frac{\left(1+\frac{1}{m_1c}\right)^n-1}{\frac{1}{m_1c}}.$$

The total loss of output would then be calculated as the value of $(n+1)$ annuities x accumulated for

Thus for example, supposing a gross marginal propensity to save equal to 0.35,[16] and a net propensity to save equal to 0.25, and supposing furthermore that two workers produce in a year the physical capital required to give permanent employment to 1 worker, then the loss of additional employment explained by an average level of unemployment of 50,000 workers due to a shortfall of aggregate demand would be equal after 10 years to around 160,000 jobs, after 15 years to 340,000 jobs, after 20 years to 670,000 jobs and so on.

Even if the unemployment of 50,000 workers due to a deficiency of demand had lasted only a year, its long-period effects in unrealized permanent employment would not have been negligible. After10 years the lost increase in jobs would have been around 30,000, after 15 years 50,000 and after 20 years 90,000.[17]

Of course, these aggregate calculations can only be suggestive. They do not, for example, take account of the waste connected with investment that, because of mistaken expectations on the part of entrepreneurs, or for some other reason, will never result in additional output.[18] The calculations nevertheless enable us to see how, in an economy like Italy's, idle productive capacity caused by a negligible shortfall of effective demand can lead, after only one or two decades, to a situation in which the expansion of the stock of productive equipment is not capable of absorbing a significant portion of the existing structural unemployment.

It seems clear, therefore, that as a general rule the amount of savings that can be utilized in any economy—above all when, as in Italy, there already exists a solid industrial base—is much more elastic than is generally supposed, and is independent of any increase in the propensity to save.[19]

It seems evident also that the traditional economic theory, in contending that the persistence of excess labour in economies like Italy's can be explained mainly in terms of a lack of savings, focuses attention on a factor whose importance for the absorption of structural unemployment is secondary, and which, when a market economy is left to its spontaneous forces, may even operate in precisely the opposite direction to what is wanted. Herein lies the importance of the Keynesian critique of the traditional theory for the investigation of unemployment in a market economy with surplus labour. Modified somewhat for application to

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the $(n+1)$ years at a rate of interest $\frac{1}{mc}$ for the first year after the expiration of the annuity, and at the compound rate $\frac{1}{m_1 c}$ for all successive years.

[16]In Italy, between 1959 and 1960 the share of gross investment in the increase of income was 46.2%. The average share for the entire period 1950−59 was 31.6% (cfr. *Relazione generale sulla situazione economica del paese 1960* [Pella & Taviani, 1961], p. 62, Table 10).

[17]It will be readily grasped that in both cases the *output* losses quickly mount up.

[18]The calculations moreover do not consider the influence of technical progress, which—quite apart from the aforementioned kinds of waste that it can cause—would affect the calculations only in so far as it affects the coefficient c: if c were to fall, the increases in the number of jobs would be greater than what we have calculated, and *vice-versa* if c were to rise.

[19]This, more than the restriction of consumption, appears to be what accounts for the high growth rates of planned economies. In those economies, the explanation for the restriction of consumption seems often to lie in political and institutional difficulties encountered in the agricultural sector. The difficulties that are perhaps most pertinent to a country's economic growth are institutional difficulties and difficulties connected to the lack of technicians, skilled labour and organizational capacity—difficulties that are absent or can be easily overcome in an economy like Italy's.

the long period, the principle of the independence of investment from full-capacity saving is an element of fundamental importance for the theoretical and practical discussion of Italian unemployment. It directs our attention not only to the savings necessary to enable a more rapid expansion of the productive system, but also and above all to the conditions necessary for those savings to be utilized in a way that allows the desired growth in permanent employment. Hence we must now consider what factors are of primary importance for the determination of the level of private investment spending, and how these factors might be affected by variations in real wages. That is the subject of the next chapter.

CHAPTER IV: Wages and Investment

Summary: I – Factors of primary importance in determining the volume of investment and the expansion of the stock of productive equipment: 'final demand' and technical innovations; II – Possible influences of the behaviour of real wages on such factors; problems which must be addressed in order to determine the magnitude of such influences.

I

For the reasons previously laid out, the relation between real wages and investment in the Italian economy cannot be dealt with by considering solely or primarily the effect of wages on the community's propensity to save. Within the limits established by the economy's saving capacity—limits which the cumulative effect of unrealized investment spending renders highly elastic—the level of private investment spending can be higher or lower in consequence of the investment decisions taken by entrepreneurs.[20]

What effect, then, will variations in real wages have on the level of investment when the latter happens to be below the limit established by the savings that can be obtained through the full employment of the existing productive capacity?

To answer this question it is necessary to know what factors affect the level of private investment. Economic theory does not at present appear to be in a position to offer a satisfactory and generally accepted systematic treatment of this central problem.

For the traditional theory the problem did not present itself in these terms: for that theory, the level of investment was simply determined by the level of available savings. Then in Keynes we find only some remarks, more descriptive than analytical, on the importance of technical innovations and high rates of population growth for a high rate of investment.[21] What interested Keynes was how the

[20]The decisions taken in the economy's private sector on whether to expand output and the stock of productive equipment will also influence employment growth and the expansion of the stock of productive equipment in State-owned enterprises; the impact will be contingent on the extent to which public enterprises depend for their market on a branch of the private economy whose relative weight in the productive system as a whole is substantial.

[21]The rate of interest also appears in Keynes's theory as one of the determinants of the level of investment. It has however already been shown in Chapter II that, according to Keynes, the role of this factor in the determination of investment spending is of minimal importance.

equilibrium between saving and investment could occur at a level of investment that was less than the savings that could be generated by the full utilization of a given stock of productive equipment. In that context, the problem of the determination of investment presents itself in a fundamentally negative sense: the problem is to show that the level of investment is not determined by savings.

The theories of economic cycles and of economic growth that followed the publication of *The General Theory* have something to say about the problem that interests us here. But cycle theories focus on the causes of fluctuations in investment over the phases of the cycle, rather than on what explains the average level of investment over a span of time that encompasses several economic cycles. And the most recent theories of economic growth appear to concentrate on the formulation of conditions for equilibrium between saving and investment, rather than on the probability of their being satisfied and hence on what actually determines the level of investment. For these reasons it appears that we cannot derive even from these theories a systematic treatment of the level of investment that is directly applicable to our present purposes. In the remainder of this section we shall confine our attention to some highly general principles that we believe can be readily accepted because they are confirmed by common experience and are routinely adopted in one form or another in the recent theories of economic growth. Our aim here will be only to identify some factors whose importance appears fundamental to the determination of the average level of investment carried out over a long period of time in an economy like Italy's.

These factors can be reduced to two: the growth of final demand and technological innovations.[22]

[22]We have not included among the circumstances fundamental to determining the level of private investment a number of factors often mentioned in that connection: the rate of profit that can be earned on new investments, the level of profits that firms do not distribute as dividends, and the rate of interest. The rate of profit on new investments appears not to be a factor that influences investment independently of the two factors mentioned in the text; it seems, rather, to be how the influence of those two factors manifests itself. Thus, if there is an increase in final demand, entrepreneurs will anticipate being able to sell additional quantities of goods at current or higher prices, and investment will appear to be profitable, whereas it would not appear so without the increase in final demand. Similarly, if technological innovations occur, entrepreneurs will expect to be able to sell their products, whose cost has fallen, at current or perhaps slightly lower prices, and investment will look profitable. Of course an increase in real wages will, for a given level of capacity utilization, tend to lower the average profit rate obtainable in the economy. But it does not appear that the effect of variations in real wages on the incentive to invest can be very large. On the one hand, the increase in real wages will be occurring under conditions of technical progress; it can, therefore, within certain limits, take place without causing a diminution of the profit rate. On the other hand, the level of investment spending will be primarily determined by the relation between the rate of profit that entrepreneurs expect to earn on the new investments and the average rate of profit presently being earned; it will be determined, therefore, primarily by the two factors indicated in the text.

The level of firms' undistributed profits should, it seems, be viewed as a factor that affects the community's propensity to save and not the level of investment. We saw in the first part of this study how variations in the propensity to save do not necessarily entail variations in investment. More precisely, the total level of profits, distributed and undistributed, depends on the level of capacity utilization and, in the long period, also on the increase in the stock of productive equipment

Starting with the first factor, it will be useful to specify at the outset what is meant here by 'final demand.' It is most appropriately defined as demand whose purpose is not the further production of goods within the economy. It therefore encompasses internal demand for consumption goods and the demand for exports net of imports.[23] It might be asked why the demand for goods destined for use in further production, i.e. the demand for investment goods, is excluded in this way: for the increased demand for investment goods also gives rise to a further expansion of investment spending to provide the additional equipment required to satisfy the increased demand for those goods.

Including investment in the demand for goods on which the investment itself depends would however be justified only in so far as the increase in the demand for investment goods can occur independently of the expansion of 'final demand' as already defined. (The investment aimed at providing productive equipment for the investment *directly* induced by the expansion of 'final demand' is in fact treated as investment induced by 'final demand'.) Now, an increase in investment independent of the increase in 'final demand' occurs in the case when investment is induced by innovations, and is therefore here considered to be the result of that cause. There is, then, no reason which necessitates the inclusion of the demand for investment goods in the demand for goods on which the investment itself depends.

The principle that the level of investment depends on the growth of final demand is variously employed in cycle theory and in the theory of economic growth, in the form of the 'acceleration principle'. It furthermore jibes with common experience. Any increase in the demand for a good will, after an initial period in which production pushes up against the capacity limits of the firms in an industry, eventually induce an expansion in the size of the firms or an increase in their number, and hence an increase in investment. What

and in employment. In the economy as a whole, therefore, the total amount of profits, and hence of undistributed profits, will depend on the level of investment rather than vice-versa. So for example, an increase in real wages that reduces average profit per worker *employed in the economy* will allow an increase in the total amount of profits if it gives rise to a sufficient increase in the employment of labour via a higher level of utilization of existing capacity or, in the long period, through an expansion of the stock of productive equipment.

It remains for us to consider how the rate of interest affects the level of investment. For the reasons considered in the first chapter, it appears that the interest rate cannot exert any significant influence on investment, particularly on the sort of investment that interests us here: investment that is capable of creating new permanent jobs. We have in fact seen that the interest rate can have a noticeable effect only in areas like homebuilding. In can also have some influence by reducing the cost of investment in public works: a low rate of interest can be useful in encouraging such projects where they are lacking and where they are necessary to encourage the creation of new industrial facilities in those regions.

[23]The demand for consumption goods includes the portion of public expenditure which does not consist of investment in public enterprises that, like private firms, produce for the market. Here we shall not treat this important part of 'consumption' demand as a distinct and separate category within final demand, since such demand does not react 'spontaneously' to variations in real wages. Such reactions will depend on the economic policy adopted. They must be considered in the context of the economic policy to be adopted in order to encourage the expansion of the stock of productive equipment and of employment.

has for a long time hindered economic theory from taking account of this key factor determining the growth of the economic system has been the principle of the tendency for investment and the saving obtainable from full capacity utilization to equalize. According to that principle, investment and the growth of the productive system appeared to be completely independent of the markets for goods. The growth of markets came about only as *a consequence* of the growth of the productive system, without any possibility of a reversal of the relation between cause and effect. As soon as the principle of the equalization of investment and capacity saving is abandoned, demand inevitably takes on a causal role in the expansion of the productive system. We have already seen in Chapter III how that occurs.

Recognizing that the growth of demand has an autonomous role in determining the growth of output does not however preclude the possibility of a relationship also running in the opposite direction: the growth of output with the consequent increase in realized incomes will lead to an increase in aggregate demand. But in a system in which investment decisions are decentralized, the expansion of demand due to an increase in the output of a single entrepreneur will have only a negligible effect on the demand for that firm's output, and therefore cannot induce the individual entrepreneur to initiate that increase in output. In such an economy, entrepreneurs will have no reason—aside from technical innovations, to which we shall turn in a moment—to expand the production of any good, and hence aggregate output, unless the demand for that good is already increasing or is expected to increase. What this implies is precisely that final demand plays a decisive role in the process of economic growth.[24,25]

Beyond the effect that an increase in final demand may have in stimulating the investment and the increase in production directly and indirectly required to meet that increased demand, it is useful to take account of another effect that the growth of final demand can have on the level of investment, when the growth in demand occurs more or less continuously over a sufficiently long period of time. When the expansion of demand is *not* due to obviously temporary causes—as would be the case, for example, with armaments during wartime—it will tend to arouse in entrepreneurs the expectation that the expansion is bound to continue into the future, and will induce them to enlarge productive capacity even beyond the levels consistent with the present state of demand for their products. Of course their expectations may be disappointed, in which case the productive capacity thus created will not be utilized and will not lead to an increase in the employment of labour. In any event, when such forecasts are sufficiently widespread to give rise to a general state of confidence in the continual expansion of output, they will facilitate the realization of the forecast, and in

[24]The question of the interrelation between an increase in the demand for goods and the growth of the productive system raises extremely complex problems that, for reasons already indicated, have not yet been adequately studied. This is not the place, however, to undertake such an investigation. For our present purposes it will be sufficient to try to put in relief the role that final demand plays in the growth of the productive system (that is, in determining the level of investment).

[25]The substantial role that the growth of exports has had in bringing about and sustaining the expansion of industrial output in Italy over the past decade is often acknowledged, for example.

some cases may enable the forecast to be realized when otherwise it would not be. Indeed, when the expansion of output occurs simultaneously in most sectors of the economy it will tend to validate itself, to the extent that the increase of income associated with it will furnish a market for the additional output. A continuous expansion of final demand appears therefore to be a condition of considerable importance for maintaining a high level of investment and a high rate of expansion of productive capacity and employment.[26]

The other circumstance which must be taken into account as a determinant of the level of investment is technical innovation in the two not always distinguishable forms of, first, new techniques for the production of already existing goods, and, second, of new goods. Even if we assume the level of final demand to be more or less constant,[27] the effect of innovations must generally be to increase the level of aggregate investment through an accelerated obsolescence of existing plants. This obsolescence may also take the form of the establishment of new branches of industry (the industries for new products) accompanied by the disappearance of other branches of industry.

But this type of innovation-induced investment will not generally be accompanied by an increase in employment, as occurs when investment is induced by an actual or anticipated expansion of final demand. The new methods of production will tend to make it possible to obtain the same physical output with less labour;[28] hence, if final demand were to remain unchanged, the effect of this investment would be a diminution rather than an increase in employment.

But another effect of innovations on the level of investment can occur as a consequence of an innovation-induced increase in final demand. To the extent that this effect occurs, it may fully or in part offset the effect on employment of the first type of innovation-induced investment.

We may distinguish between two ways in which technical innovations can stimulate an increase in final demand: through the increase in income and employment caused by the innovative investment, and through the use of the productive capacity brought into existence by that investment.

As regards the first of these causes, innovations promote the utilization of existing capacity, or the expansion of capacity, in the investment goods sector; they therefore give rise to increases in employment in that sector and, along

[26]This factor has undoubtedly been extremely important in encouraging the growth of output in Italy in the post-war period.

[27]The concept of constancy of the 'level' of final demand used here cannot be rigorously defined, particularly when we are dealing with innovations consisting of the introduction of new products. In fact, the effect of the innovations will generally be to modify the proportions in which the final goods are demanded. For the purely illustrative purposes of this chapter, however, the concept, as vague as it is, may nevertheless be useful since, as we shall see, it enables us to distinguish between two types of innovation-induced investment that have opposite effects on employment.

[28]It is logically conceivable that a new method of production that enables entrepreneurs to reduce the cost of producing a good (given the levels of the wage rate and the profit rate) requires more labour per unit of output (when, of course, all the stages of production for that product are considered) than the previous method, so that the decrease in cost is explained entirely by a reduction in the amount and the value of the means of production employed. In general, though, technical progress will reduce the amount of labour needed to obtain the same output.

with them, increases in income and consumption. These increases in final demand will be permanent to the extent that the higher level of investment to which the innovations give rise is also permanent. The increase in final demand will have the effect of stimulating direct investment in order to increase the production of consumption goods as well.[29]

The second way in which innovations can influence final demand is through the utilization of the new productive capacity brought into existence. This is likely to be particularly relevant when innovations take the form of new products. The market in relation to which the new capacity is created is the existing one. There is therefore an incentive for its immediate utilization: purchasing power will tend to be withdrawn from the other markets in order to be directed towards the new product. When production begins, however, new employment and new purchasing power are created, so that the decrease in demand in the other markets may be less than the demand satisfied by the new product. It is therefore both conceivable and likely that the introduction of new products will lead to a permanent increase in income and demand.

This outcome appears less likely the more the innovations take the form of new ways of producing existing goods. The income generated by the use of the new productive capacity will be accompanied by the disappearance of the incomes derived from the production of commodities under the old method: the point becomes obvious when the firms adopting the new production method in place of the previous method are the ones already operating in the industry. But even in this case, if the introduction of the new methods leads to a substantial decrease in the price of the goods in question relative to other goods, the demand for the former can increase without a corresponding decrease in the demand for the latter.

It therefore seems reasonable to assert that when we consider the influence of innovations on final demand, the preceding conclusions concerning the likely negative effect of innovations on employment may be attenuated but not substantially altered when we are dealing with innovations that consist of new ways of producing already existing goods. The case of new products is less clear, for there the possibility exists that a market may develop without simultaneously diminishing the market for other goods.

If, therefore, increases in final demand are as capable as technical innovations of bringing about a higher level of investment, it is above all from the first type of investment—investment fostered by an expansion of final demand—that we must expect the outcome of an increase of the productive stock and of employment.

II

The problem to which we must now turn our attention is this: supposing that over a sufficiently long period of time investment is on average less than the maximum

[29]Even if it is supposed that the higher level of investment triggered by the innovations is permanent, the increase in investment caused by the expansion of final demand will be temporary and will last only so long as productive capacity in the consumption goods sector is expected to grow.

level allowed by the saving that would be obtained from the full utilization of the existing productive capacity, what will be the probable effect of increases in real wages on the level of investment, and hence on the absorption of the structural unemployment present in the economy?

It does not seem possible to reach conclusions based on this argument without the help of suitable detailed studies of the Italian economy that can, among other things, lead to an assessment of the importance and of the likely quantitative dimensions of the phenomena that we will consider. The aim of this work is above all to try to clarify the theoretical bases upon which the analysis of the influence of the behaviour of wages on employment must be conducted. To that end, in this section we will try to identify some problems, including problems of an empirical nature, to which we must turn our attention in order draw conclusions about the likely effects of increases in real wages on the absorption of unemployment; an attempt will also be made, so far as possible, to make a rough estimate of those effects.

From what has been said in the previous section, it follows that the effect of increases in real wages on the absorption of unemployment will depend in large measure on how they affect final demand.

It is necessary then to distinguish between the two components of final demand: consumption and exports.

As regards consumption, increases in real wages lead to a rise in consumption and hence, provided the economy has accumulation capacity that is not fully utilized, to an expansion of the productive system and to an increase in employment. Given the level of productivity in the economy, the increase in real wages will in fact cause a redistribution of income in favour of a class that consumes a major portion of its income, and with that an increase in the first component of final demand. And given the level of real wages already achieved in Italy, it seems clear that this additional demand for consumption goods will fall primarily if not exclusively on industrial goods and on the tertiary sector, the very sectors on whose expansion the absorption of structural unemployment in Italy entirely depends. It is necessary also to recognize that the normal situation is that of a continuous increase in labour productivity, particularly in the industrial sectors; a sufficient rate of increase of real wages can then be a condition for avoiding a fall in the level of employment in industry and in tertiary activity.

Moreover, for the reason seen in the previous section, a steady and continuous rise in real wages along with the consequent steady and continuous increase in consumption can serve to instil in entrepreneurs a confidence in the continuous expansion of the market for their products, inducing them to undertake investments and increases in employment and output that will in turn help to raise final demand.[30]

[30]It would also be necessary, however, to consider the possibility that the expansion of the market for some products would lead to the replacement of previously adopted production methods by more modern production methods that were hitherto not profitable owing to the restricted size of the market. In these sectors, the expansion of employment would not proceed in step with the growth of the demand for output.

But how far can this increase in consumption due to the rise in real wages continue before its effect on final demand is offset by a reduction in the other element of final demand, net exports?

On this point it is useful to distinguish clearly between the effects of exports on the balance of payments and their effects on final demand and, through this route, on the expansion of the productive stock and employment.[31] Exports in fact appear to have more importance for balance-of-payments equilibrium than they do as a means of increasing final demand. In this second role, exports often encounter a constraint in the fact that once equilibrium in the current account is achieved, exports cannot permanently rise without a corresponding increase in imports that neutralizes the effect of the increased exports on final demand. That constraint will be operative unless, of course, the increase in exports is accompanied by a corresponding outflow of capital, the desirability of which, as a way of increasing final demand in lieu of an expansion of the internal market, is open to doubt for an economy like Italy's.

The discussion of the effects of a change in real wages on exports is much more complicated than the discussion of how real wages affect consumption. Exports do not in fact depend in a straightforward way on the movement of wages in the same way that consumption does. Variations in net exports depend upon the money prices of goods, and unless additional assumptions are introduced, no necessary connection exists between the movement of real wages and the behaviour of prices. If real wages were to rise via a fall in prices with constant money wages, the situation with regard to exports would be improved. If real wages were to increase via an increase in money wages with prices remaining constant, the exports situation would be neither improved nor harmed. If however the increase in real wages were to lead to increases in the level of prices, exports would be harmed in a regime of fixed exchange rates. The complexity of a treatment of the influence of real wages on exports derives, then, from fact that the discussion can no longer be conducted in real terms; it is necessary instead to examine the relations running between real wages and money wages on the one hand, and between money wages and the level of prices on the other. An investigation of this type, though it lies beyond the task we have set for ourselves in the present work, would nevertheless be needed to obtain a sufficiently complete picture of the influence that wages have on the growth of employment. We must confine ourselves here to some highly general remarks.

In so far as there is a choice between an increase in real wages through a fall in prices, and the same increase obtained through an increase in money wages, considerations relating to the impact on exports would, other circumstances being equal, favour the first method. At this point it would be necessary to introduce into the analysis of the relation between real wages and the price level the question of the productivity increases taking place in the economic system. In so far as it is reasonable to suppose that in the absence of money wage increases

[31]The balance-of-payments situation itself has, on the other hand, an important bearing on the growth of the productive stock and employment, since the latitude with which the country's overall economic policy can manoeuvre partly depends on it.

such productivity increases would manifest themselves in a fall in prices, increases in money wages equal to these productivity increases need not harm exports. They would not cause prices to increase since they would leave the average profit margin unchanged, and they would prevent the distribution of national income from changing in a way that would impair the consumption growth needed to sustain the growth of the stock of productive equipment (provided there are some unutilized margins of saving). If instead it turns out that these productivity increases are likely to manifest themselves as reductions in prices, this will be, other conditions being equal, the best way to bring about the increase in real wages.

In so far as the increase in real wages, either because of the form it takes or because of its magnitude, would lead to an increase in the prices of exportable goods or to a failure of those prices to fall, it would seem appropriate to distinguish between those price increases that manifest themselves as a *deterioration* of the position of the export industries relative to their competition on the international market, and those increases that manifest themselves in the *absence of improvement* of the former position. For this purpose it would be necessary to consider what happens to the prices of the goods in question in the other countries that are in direct competition with Italian exports. The importance of this distinction lies in the fact that it is necessary to take account of the extent to which an *improvement* of the competitive position of the export industries is desirable when the economy's current account is already substantially in balance. In these circumstances the fall in the prices of Italian exports relative to the prices that competitors charge for the same exports would result in a needless worsening of the terms of trade between exports and imports. Since, because of the price elasticity of demand for Italian exports, that would lead to a widening of the gap between the aggregate value of exports and the aggregate value of imports, we will have a situation that either will be followed by an increase in the volume of imports that neutralizes the positive effect on aggregate demand, or will lead to a net export of capital. To deal with these effects of wage movements on the balance of payments and on aggregate demand, it would be essential to undertake specific studies to ascertain the price elasticity of Italian exports and, more generally, the importance of prices relative to other factors, such as product quality and the organization of international trade, in determining the growth of exports.[32]

It appears therefore that as regards the influence of an increase in real wages on the level of investment and on the creation of new productive capacity and new jobs via the growth of final demand, the effect will be favourable for the first

[32]It would eventually be necessary take account of a well-known factor which may be important, although its quantitative significance is difficult to measure. For some industrial goods, the existence of an internal market above a certain minimum size is the condition which enables the formation of firms of sufficient size to take advantage of economies of scale, firms capable therefore of withstanding the competition of foreign goods on the international market and sometimes even on the internal market. Of course, to the extent that the expansion of the internal market via increases in real wages has this effect, the positive impact on employment due to the increase in exports or decrease in imports will be accompanied by a negative impact in so far as, in those branches of production, any given increase in consumption entails a smaller increase, or a reduction, in employment.

component of final demand: consumption. The effect might be neutral or unfavourable with respect to the second component of final demand: exports. The effect will be unfavourable to the extent that the increase in real wages leads to increases in the money prices of exportable goods, or prevents the prices of such goods from falling. The evaluation of this negative effect would have to consider the movement of prices of these same products in the other exporting countries, as well as the elasticity of demand for exports with respect to price, and would above all have to take account of the existing and prospective situation of the balance of payments.

It remains for us to consider the effect of increases in real wages on investment and on employment through innovations. A rise in real wages will in fact constitute an incentive for the adoption of more advanced techniques. It is no simple matter to gauge the significance of this effect. Here too empirical studies would be needed before any well-grounded conclusions can be reached. It is possible however to identify several considerations that might limit the importance of this factor with respect to those sectors—in particular the industrial sectors—whose products are sold (even on the internal market) in a regime of international competition. It appears doubtful that the movement of real wages inside the country can have any considerable influence on the techniques of production adopted.

In an open economy like the Italian economy (which is in fact becoming ever more open), the techniques adopted in those branches of production tend to conform to the techniques adopted in competing countries. It therefore seems unlikely that there can here be any serious question of influencing the adopted techniques through wage policy. The techniques of production will be independent of those variations in real wages that might realistically be expected to take place.

The situation is different in those productive sectors (agriculture, services, and artisanal industries) for which international competition is not possible or, if it is possible, is impeded by particular economic policies. In these sectors, outmoded methods of production tend to persist also because of the low remuneration of labour; hence an increase in that remuneration can encourage the adoption of more advanced techniques.

However, in general these are sectors in which the remuneration of labour is in large measure independent of the wages that obtain in the more advanced sectors of the economy, for which collective bargaining and therefore wage policy genuinely matter. We are in fact dealing with the sectors in which the labour supply that cannot be absorbed by the advanced sectors of the economy languishes or into which such labour gets shunted. The influence of variations in real wages in the rest of the economy on the remuneration of labour in these sectors will generally be minimal as long as labour is in excess supply. The increase in the remuneration of labour in these sectors, and along with it the adoption of more advanced techniques, will in general depend upon the degree to which labour in those sectors becomes scarcer as the surplus labour in the whole economy is gradually absorbed.

In so far, however, as the increase in real wages would encourage the adoption of more advanced techniques—and the extent to which that would occur remains to be seen—the adoption of more advanced techniques would generally

have a negative impact on employment: for the reasons considered in the preceding section, the possible increases in the demand for goods resulting from the adoption of the new techniques will not in general be sufficient to counterbalance the employment effects of the increase in productivity.

CONCLUSIONS OF THE FIRST AND SECOND PARTS

It will now be useful to summarize and conclude the argument conducted in the first two parts of this work. They have been dedicated almost exclusively to the question that is fundamental to any well-grounded discussion of the relations between the trend of the level of real wages and the absorption of 'structural' unemployment in Italy: the question of the relation between consumption and investment.

The absorption of Italian unemployment in fact requires an expansion of the existing stock of productive equipment. The rapid increase in the stock of productive equipment in turn requires a high level of the kinds of investment that will generate new permanent jobs. Given the relative sizes of the public sector and the private sector in the Italian economy today, the investment needed to create new permanent jobs can come almost solely from private investment.[33] Hence, determining the effects of the general level of wages on the absorption of unemployment in Italy means, in the first place, determining the effects of the wage level on the private investment apt to increase the stock of productive plant and equipment. Now, there is general agreement that, *for any given level of real income*, an increase in real wages will lead to an increase in consumption: the proportion of income saved out of wages is in fact lower than the proportion saved out of profit income which, given the level of real income, will decline with the increase in wages. In a market economy, the question of the relation between the wage level and investment therefore becomes the question of the relation between consumption and investment.

On the relation between consumption and investment, economic theory in its present state gives two starkly divergent answers. On the one hand, according to the traditional economic theory, increases in consumption entail less saving and therefore less investment, since the level of investment is determined by the level of saving. On the other hand, according to Keynes's critique of the traditional theory, a market economy exhibits no spontaneous tendency for investment to adjust to the capacity saving of the economy, and increases in consumption are therefore held to be compatible with constant or increasing investment: the degree of utilization of existing productive capacity can in fact vary, allowing different levels of real income to obtain. While the principal propositions of the

[33] As noted in the Saraceno report (*Riconsiderazione dello "Schema Vanoni" nel quinto anno della sua presentazione*, Roma, 1959, p. 20), at the end of 1958, 96% of jobholders in the Italian manufacturing sector were employed by private firms, and only 4% by public enterprises. Now, the manufacturing sector is the principal determinant of the expansion of the productive stock and of permanent employment. It is also worth observing that to the quite limited extent that the investment of public enterprises can affect permanent employment, this investment itself depends on the private sector, since the public enterprises depend on the private sector's demand for their products.

latter theory appear to be generally accepted for the explanation of economic cycles, the problems concerning the growth of the stock of productive equipment that arise in economies like that of Italy are often approached in terms derived from the traditional theory.

In the first part of the present work,[34] we examined the presuppositions of the two types of theory with the aim of deriving propositions about the relation between consumption and investment that might be applicable to the Italian situation. We then arrived at the conclusion that the traditional theory, which posits a spontaneous tendency for investment to adjust to the saving capacity of the economy, cannot be accepted. That alleged tendency is the outcome of a theory of interest derived from the idea that the overall demand for 'capital' is highly elastic with respect to the rate of interest. The theoretical foundations of this idea are invalid and appear to have no justification in either theory or facts. For this reason, the amount of private investment undertaken in a market economy must generally be regarded as independent of the amount of saving that can be obtained by the full utilization of the economy's available productive capacity.

The application of this principle to questions of the growth of the stock of productive equipment in economies experiencing structural unemployment was undertaken in Chapter III of the second part of the present work. From this principle it directly follows that in a market economy, the growth of the stock of productive equipment is, in part, independent of the economy's capacity to save. There is much greater leeway than is entailed by the disparity between the saving that would be generated by the full utilization of productive capacity during a given period of time and the investment undertaken during that same period. The investment lost as a result of that disparity would in fact have given rise to additional productive capacity and therefore to additional saving capacity for the entire future, starting from that period, with a cumulative effect that is analogous to the compound interest accumulated on a given sum over time.

The constraint that saving imposes on the growth of productive capacity in an economy that, like Italy's, has a surfeit of labour appears therefore to be much more elastic than is generally supposed.

The principle of the independence of investment from full-capacity saving appears therefore to be no less important for the Italian economy than it is for an economy where there is no superfluous labour with respect to the stock of productive equipment. The implications of this principle can be summarized by observing that investment is subject to one or the other of two independent limits. The first is the amount of investment that entrepreneurs think profitable. The second is the level of consumption, and it is operative only when it is reached before the first one. The effects of wage increases on investment will generally be very different according to whether the first or the second limit is binding in the situation under consideration.

When the level of investment deemed to be profitable by entrepreneurs leaves part of full-capacity saving unutilized, there is no reason that an increase in real wages must lead to a decrease in investment as the traditional theory supposes.

[34][See Garegnani, 1978, 1979.]

Since the investment undertaken could have been higher without cutting into consumption, an increase in consumption will not necessarily lead to a diminution of investment. The effect of the wage increase on investment will depend, then, on its effect on entrepreneurs' 'incentives' to invest. An attempt to indicate the lines on which such an analysis might be conducted is found in Chapter IV. The most important factors in determining private investment are the growth of 'final demand' and technical innovations. It therefore seems likely that increases in real wages on an order of magnitude that is in fact plausible have the effect of inducing an increase in the level of investment, and hence an expansion of productive capacity and of employment via the growth of final demand for consumption goods. However, whenever the increase in real wages occurs in such a way as to cause the prices of exportable products to increase, that first effect could be partially offset by a reduction, or a smaller increase, in the other component of final demand: exports. The magnitude of this latter effect would have to be assessed mainly in connection with the current and prospective situation of the balance of payments. Whenever the increase in real wages is likely to lead to the adoption of more advanced techniques in some sectors, we have another way in which increases in real wages can stimulate increased investment. However, the investment generated in this way, unlike investment induced by increases in final demand, would have as its probable effect not an increase but a reduction in employment. Chapter IV sought in large part to identify the problems that require empirical investigation before we can arrive at sound conclusions about the effects of variations in real wages on investment.

When instead the investment undertaken by entrepreneurs exceeds the savings generated by full utilization of the available productive capacity, it is the second limit—the limit posed by the current level of consumption—that becomes binding. This is the situation in which there will be a more or less accentuated level of inflation. We would then face the choice between a reduction (or a smaller increase) in consumption—a reduction that in the absence of economic policy interventions would probably be accomplished in a forced way via the inflation process—and a reduction (or a smaller increase) in investment. In these situations, the task of determining the wage policy best suited to promoting employment growth would benefit from an analysis that goes beyond the discussion of consumption and investment in aggregate terms and attempts to identify the sectors of the economy for which the trade-off, be it direct or indirect, between production of consumption goods and production of investment goods actually applies.[35] This will furnish the data that will enable us to determine which types of consumption must be discouraged in order to permit more investment until the pressure of investment demand on productive capacity is spent. It will then be easier to determine the role that wage policy can play in advancing

[35]By direct choice between investment and consumption we mean the possibility of using the same productive capacity for investment or consumption purposes (as for example when the same plants can be used to produce either trucks and tractors or automobiles). By indirect choice, we mean the possibility of producing, with the existing productive facilities, either plants to produce other plants or plants to produce consumption goods.

this objective, while avoiding, if possible, reductions or smaller increases in consumption demand whose sole effect would be to leave existing productive capacity unutilized. The same type of sectoral analysis would then have to be conducted to determine which projects must be given priority because they will expand productive capacity in sectors that have experienced bottlenecks to the expansion of investment. It is in fact difficult to imagine that in an economy like that of Italy, where the main problem to be resolved is that of a vast reserve of unutilized manpower, and where there already exists a developed and diversified productive system, the bottlenecks to an increase in investment would be pervasive and insusceptible of being resolved in a relatively short period of time through an appropriate investment policy. The idea of a trade-off between aggregate consumption and aggregate investment finds its roots in the analysis of situations where there is no surplus of labour with respect to the available stock of productive equipment. The *aggregate* trade-off between consumption and investment therefore has its immediate justification in the necessity to free labour from one sector in order to expand production in another. In these aggregate terms the trade-off between consumption and investment does not appear to be generally valid when there is a surplus of labour.

In Italy, therefore, the consequences that the trend of real wages can have for investment and for the growth of employment appear to be very different depending upon whether the situation is or is not one in which, over a sufficiently long period of time, investment pushes up against productive capacity so that a reduction of consumption, or of certain types of consumption, is required to enable investment to increase.

It would therefore be useful to study the recent performance of the Italian economy in order to ascertain which of the two limits identified here has been the more binding constraint on the level of investment during that period. That will be the object of the third part of this work. There we shall identify some considerations concerning the productive sectors for which a sufficiently large increase in investment might pose the problem of a trade-off between consumption and investment.

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