

Effects of Inflation on the Distribution of Income in Italy, 1953-1962

1. - In Italy, in the ten years 1953-62, the average price level rose every year, with the exception of 1959: as a consequence, money product increased more rapidly than real product. In this paper an attempt has been made at evaluating, within the limits of the available data, the effects of this inflationary process on income distribution. For this purpose, it is necessary to determine: to what extent each productive sector contributed, owing to internal price rises, to the creation of the total surplus of money product over real product, and how such excess was distributed amongst the various income categories in each sector; what losses, in terms of real purchasing power, these same categories had to suffer from the rise in the prices of the resources on which incomes were spent; lastly, whether for each category the balance between gains, arising from participation in the surplus of money product, and losses is positive or negative. This balance shows the distributional effects of the inflationary process for each category, which are neutral if the balance is zero, favourable or unfavourable in real terms if the balance is positive or negative.

Changes in distributive shares can obviously happen quite independently of changes in the price level, as a result of changes in composition. If one sector grows more rapidly than the others, the share in total product of the income categories of that sector increases. If, moreover, the various sectors grow at different rates and if distributive shares are not the same in each sector, distributive shares in the economy as a whole change, because the weights have changed, even though they remain constant within each sector. The distributional effects of the inflationary process are superimposed on such structural changes, which they can weaken or reinforce: hence the balance defined above shows the sign and the strength of one component of the change in shares which actually occurred.

Here only the final results of the inquiry are presented, together with some observations which they suggest. The method followed to obtain the results has been explained in detail in the Italian version of this paper (1) and will only be summarized here.

The contribution of a sector to the surplus of money product is given, for each year and for the period as a whole, by the difference between its money product and its real product (at constant 1953 prices).

The distribution of this difference amongst the various income categories has been determined as follows. If in each sector all incomes had been rising at the same rate as real product, i.e. if in each sector the share of *real* product of all income categories *in money terms* had remained the same as in 1953, sectoral prices would have not risen. On the basis of this proposition, which is not an assumption, but a mere tautology (because by definition value added exhausts all possible incomes earned in the process of producing it) devoid of any causal implication, a series of hypothetical values of income categories — being the values which would have been compatible with constant prices — has been constructed for each sector. Such values allow us: (a) to determine the participation of each category in the surplus of money over real product in each sector and in the economy as a whole, which is equal to the difference between the actual and hypothetical values of the income categories in each sector; and (b) to find out the sign and the dimension of distributive changes due to changes in the composition of output, by comparing initial shares in the base year with the shares of hypothetical values on total real product (at base year prices) in any other year. Since hypothetical values imply by definition constant sectoral shares and constant prices, any change in the overall share of the hypothetical values of one income category is to be attributed to changes in composition.

The problem of evaluating the losses inflicted upon the various income categories by the price rise is one of finding adequate deflators for such categories. It has been thought more realistic to use different deflators for dependent labour incomes and for other incomes: the former have been treated with the price index implicit in the series of consumption expenditure at constant prices; the

(1) *Moneta e Credito*, December 1963.

latter with a weighted average of consumption expenditure and investment expenditure indexes. The underlying hypothesis, that all dependent labour incomes are consumed, has appeared nearer the truth than the other implicit in using one deflator only, namely that all incomes are consumed and invested in the same proportion. The determination of the weights of the two indexes for working out the second deflator has been particularly laborious, owing to a number of difficulties arising from the necessity of ensuring consistency with the overall index of total expenditure and from the scarcity of statistical information.

The data available allow a satisfactory sectoral breakdown — agriculture, industry, other (tertiary) activities, value added of buildings already in use (urban rents), public sector (State and local authorities, excluding all industrial or other productive undertakings which the State owns wholly or in part) (2). The division between income categories is instead very poor, since only two categories are considered — dependent labour incomes and “other” incomes, which include interest and dividends, profits, managerial and independent labour incomes, etc. It is possible only to keep incomes from buildings (3) separate from “other” incomes, and it is rather important to do so: the former are true rents, whereas “other” incomes arising in agriculture, industry or in the tertiary sector, though also including some kinds of rent, are mostly of a different nature.

Obviously, the validity of the results depends upon the validity of the data employed here, the source of which is the Italian Central Institute of Statistics.

2. - The main results of the inquiry can be summarized as follows:

2.1. - *The economic system as a whole.* Since price rises have not been uniform in the various sectors, sectoral shares on total real product do not coincide with sectoral shares on total money product.

(2) In other words, the public sector only includes the Civil Service and the local authorities, and “private” sectors are so defined only by convention.

(3) In the text the expression “income from buildings” includes only incomes received by owners from buildings *already in existence*: it does *not* include incomes of contractors or building workers, which are part of the industrial value added.

Incomes of all categories in all sectors have increased in absolute terms, owing to the general process of development. The overall effects of the price increase which occurred in the ten years, however, were not neutral and affected the distribution of income: gains arising from participation in the surplus of money product and losses inflicted on money incomes by rising prices did not offset each other for each category, thus modifying distributive shares. Owing to such distributional effects, actual changes in shares are greater or lower than the structural changes induced by mere changes in the composition of output.

2.2. - *Sectors.* The share of industry in the *real* private product increased while that of all other sectors — especially of agriculture and buildings — fell. The shares of the tertiary sector, and especially of buildings on private *money* product instead rose. These two sectors, though only accounting for slightly more than a quarter of total (private) real product in 1962, were responsible for as much as two-thirds of the overall surplus of monetary over real product in the ten years.

The public sector's share in total internal money product rose. Even if the available data are considered unreliable, it can safely be said that real product in the public sector grew at a rate certainly no higher — and probably lower — than in private sectors. According to the available data on the real product of the public sector, the monetary surplus originated there amounts to as much as a quarter of the total surplus of the internal product: but even if real product had risen at the same rate as in private sectors, the share of the public sector in total monetary surplus would appear to be no less than one-sixth.

2.3. - *Income Categories.* Table 1 summarizes the results obtained for the private sectors.

2.3.1. - *Incomes of dependent labour in private sectors.* In all the sectors taken together the increase in the real share of such incomes is due neither to a distributional action of the inflationary process nor to a compression of the share of other incomes in each individual sector, but to the effects of changes in composition. The weight of agriculture on the total fell considerably: and, since in agriculture the share of dependent labour incomes appears much lower than in the other sectors, owing to the fact that it does not

include the incomes of farmers owning the land which they cultivate, the mere passage of labourers to sectors with a higher share of dependent labour income caused this increase in the overall share. Such increase would, therefore, have occurred *even* if prices had not risen, wages had grown in pace with productivity in each sector and distributive shares in each sector had remained unchanged.

	Real shares in resources available for incomes of the private sectors (incomes at constant 1953 purchasing power)				Changes of relative shares 1953-1962		
	1953		1962		due to changes in composition (constant sectoral shares)	connected with the rise in prices (balance between benefits and losses)	Total
	billion lire	%	billion lire	%			
Dependent labour incomes:							
— Agriculture . . .	400	4.5	490	3.1	- 1.6	+ 0.2	- 1.4
— Industry	2,096	23.4	4,208	27.3	+ 6.1	- 2.2	+ 3.9
— Other activities .	1,155	12.9	2,183	14.2	- 0.7	+ 2.0	+ 1.3
Total	3,651	40.8	6,881	44.6	+ 3.8	—	+ 3.8
Other incomes	4,986	55.7	7,514	48.7	- 2.8	- 4.2	- 7.0
Buildings	311	3.5	1,025	6.7	- 1.0	+ 4.2	+ 3.2
Grand Total . . .	8,948	100.0	15,420	100.0	—	—	—

No advantage instead accrued to this category of incomes from the inflationary process. Up to 1961 it had gained, in terms of money surplus, less than it had lost owing to rising prices. The net gain of 1962 only succeeded in balancing gains and losses for the period as a whole.

The effects of the price rise, though neutral in the sectors taken together, were not so in each individual sector. The balance of the distributional effects of inflation was positive for the workers in the tertiary sector and negative for industrial workers. As a result, the former's share in total resources increased, while it should have decreased owing to changes in composition; and the share of the latter rose by less than would have happened if only changes in composition had been operating.

2.3.2. - "Other" incomes of private sectors (excluding incomes from buildings). In all sectors taken together the overall share of "other" incomes fell considerably. This fall is to a large part due to the heavy negative balance of the effects of the price rise: the part of monetary surplus obtained by these incomes was much lower than the losses which they suffered. Changes in composition, independent of changes in shares in individual sectors, account for the rest.

The results for individual sectors cannot be determined in the case of "other" incomes, because a sectoral breakdown of the duplications involved in the figures of value added is not available (4). It can safely be said, however, that the balance was positive for the tertiary sector and heavily negative for industry. In the industrial sector the notable wage increases which occurred in 1962 (much higher than the rise in average productivity) were not entirely passed on to prices, being partly absorbed by "other" incomes: industry is the only sector where "other" incomes in money terms increased at a rate lower than *real* product, both in 1962 and in the period as a whole.

2.3.3. - *Incomes from buildings*. These incomes, which exhaust the whole value added of their sectors, gained all that was lost by the "other" incomes of private sectors in the inflationary process. Their share in total resources, which should have decreased, rose considerably.

2.3.4. - *Incomes of dependent labour of the public sector*. The sum of wages and salaries paid in the public sector, which is nearly equal to the whole value added of the sector, grew at a slightly faster rate than the sum of incomes of dependent labour in the other sectors: it is quite certain that the balance between gains in terms of participation in the monetary surplus and losses due to rising prices is positive, though its exact magnitude cannot be determined (5).

(4) Duplications arise from the fact that some services provided by the public sector and by credit institutions to firms are not considered as costs by the latter, and should therefore be subtracted from total value added in order to avoid double counting. The value of duplications is known; and it is obvious that they should be subtracted from "other" incomes. But it is impossible to estimate the sectoral values.

(5) The real share of the earnings of public employees in the sum of all dependent labour incomes (private plus public) passed from 21.5 to 22 per cent. Considering the sum

3. - It thus appears that, in the non-public sectors, rents from buildings gained from the inflationary process at the expense of incomes other than dependent labour incomes. More specifically, and considering the economy as a whole, together with rents, the gainers were all tertiary sector incomes and incomes of public employees, at the expense of all incomes of the industrial sector.

We have been very careful to present these results, concerning the effects of inflation on distribution, outside any causal model concerning the factors of inflation. These same results, however, suggest some considerations on this matter.

In general, they show that any simple model is quite inadequate for providing a satisfactory interpretation. It appears above all that a simple cost-inflation model has no operational significance in the Italian case. From a rise in the ratio between the sum of *money* earnings obtained by one factor and total *real* product, no valid causal link can justifiably be inferred between increase in earnings and increase in prices. First, any explanation in terms of aggregate shares or ratios ignores the fact that changes in shares can be due, as was said above, to changes in composition in no way connected with price rises or with changes in shares in individual sectors. Secondly, if no attention is paid to the losses suffered by one income category owing to the inflationary process, what should be demonstrated is instead taken for granted, namely that that category is to be considered entirely responsible for the price rise (6).

of all incomes of all sectors at constant purchasing power, the change in shares was the following:

	1953		1962	
	billion lire	%	billion lire	%
Dependent labour incomes, private sectors	3,651	36.7	6,881	39.6
Other incomes, private sectors . . .	4,986	50.2	7,514	43.3
Incomes from buildings	311	3.1	1,025	5.9
Incomes of public employees	998	10.0	1,939	11.2
Total	9,946	100.0	17,359	100.0

(6) The simplest cost-inflation model seems to be the theoretical basis of some parts of the last Report of the Governor of the Bank of Italy, at the 1963 General Meeting (Rome, 1953, especially pp. 31 seq.).

There is no doubt that in 1962 the increase in labour incomes in industry acted as an independent variable, both in affecting prices and in squeezing "other" incomes of the sector. But it is also true that the same dependent labour incomes were net losers from the inflationary process over the period, in spite of the net gains in the last year (1962): and this shows that their contribution to inflation was much less substantial than that of incomes of other sectors. On the other hand, in the tertiary sector both categories of income — of dependent labour and others — were net gainers: nor is there any reason to consider one category rather than the other as primarily responsible for the contribution of the sector to the inflationary process. In the case of incomes from buildings and incomes of public employees there is an immediate connection between their increases and the rises in prices in the two sectors: this connection, however, is a mere identity, since in both sectors one single income category exhausts all or nearly all the value added.

We are thus faced with a remarkable diversity of results for the different sectors: and this shows that attention should be concentrated on what happened in the sectors, rather than on the trends of overall shares. When approaching the problem from the point of view of sectors, it becomes easier and more legitimate to establish causal links, both on the supply side and on the demand side. On the supply side, what matters more than the incidence on prices of the earnings of one factor is the incidence on the general price level of the prices of one class of goods and services. Thus a price increase in the buildings sector, taking the form of an increase in rents, affects the price level directly. The price increase of the tertiary sector implies an increase in the margins which have to be paid as products pass from the producer to the buyer, and hence an increase in the final prices of the products. A rapid creation of money incomes in some sectors also affects the price level on the demand side (though this influence cannot be exactly measured), especially when the elasticity of supply is low. This is the main channel through which the surplus of money income originating in the public sector manifests its inflationary effects (7).

(7) The increase in the earnings of public employees may affect the price rise also on the supply side: this happens if, as is often the case, new taxes are introduced or existing taxes are raised in order to finance the increases in salaries for the public employees. These effects however are extremely difficult to assess.

It might be thought that prices rise more in some sectors because productivity grows less than in the other sectors and less than wages. This explanation, however, is irrelevant for buildings, where no dependent labour is present, and for the public sector, in which there are no prices: as for the latter, it must be noted that the level and the trend of the productivity of public employees cannot be considered as given, since they should be a target variable of primary importance for public action. The same explanation is not sufficient for the tertiary sector: not only can the whole of the price increase not be justified in this way; but also in the tertiary sector the trend of productivity, far from being a datum, externally given, is influenced (especially as far as trade is concerned) by the structural characteristics of the sector, liable to be altered by appropriate action. More than wages rising too fast, in the case of the public sector and the tertiary sector it is a question of productivity increasing too slowly owing to pathological factors — inefficiency, obsolete and too rigid structures, bottlenecks allowing too high earnings, inadequacy of the laws. As for buildings, the price increase (by more than 200 per cent) cannot wholly be accounted for by the removal of the limitations imposed upon rents during and immediately after the war: to a large part it is due to a true increase in urban rent, arising from scarcity.

4. - The picture emerging from the results obtained here has some peculiarly Ricardian features: the increase in prices was largely due to a rise in rents and of sectoral incomes in which are hidden some forms of rent, in the twofold aspect of existence of privileged positions and of eliminable but not eliminated inefficiency; it benefited these same incomes at the expense of agricultural and industrial incomes. One is inclined to think that the effects of this process, as well as its features, possess a Ricardian flavour: the relative compression of "other" incomes in industry certainly implies a lower investment rate; whereas it is not equally certain that the parallel increase of rents and of profits in the tertiary sector is channelled towards financing productive investment. The present scarcity of investible funds in Italy seems to confirm this impression: rents and profits in the tertiary sector have not, in spite of their rapid increase, made up for the fall of the part of industrial profits available for self-financing. It must be thought, moreover, that the rapid increase of those incomes has checked the

possibilities of expansion of agricultural incomes and the development of agriculture: it would have been preferable if the sacrifice borne by the system in terms of rising prices had gone, at least in part, to the advantage of agriculture; or if a less rapidly rising cost of living and hence a lower cost of labour in industry had allowed lower prices of the investment and auxiliary goods employed in agriculture.

Certain structural reforms proposed for the tertiary sector from many quarters and the recent decision of the Government to freeze rents for two years seem to be grounded on opinions and appraisals similar to those presented here and confirmed by our analysis.

As for the increases in the incomes of the public employees in the ten years, it is not so much difficult to justify their entity, which can be explained by the low initial level of wages and salaries in the public service, as to explain the fact that they have been granted without undertaking much needed radical reforms. Only such reforms would have allowed, if not a lower burden on the State budget, at least an increase in the efficiency and yield of expenditure, and eventually in real product: rises in wages and salaries could have been decided in a rational fashion, instead of following the drift which has taken place in the Civil Service.

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LUIGI SPAVENTA