

Income Distribution and Relative Prices in Italy, 1970-2003

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1. Introduction

There appear to be two major explanations for the fall in the wage share in national income in Italy and other European countries since the end of the 1970: a ‘composition effect’, i.e., a shift of resources from manufacturing to services which were characterised by a lower wage share (cf. De Serres, Scarpetta & de la Maisonnette, 2002), and possible changes in the relationship between the relative price of ‘production factors’ and the capital/labour ratio (cf. Blanchard, 1997; Bentolilla and St. Paul, 2003). In particular, considering the latter explanation, given the magnitude of the phenomenon (the share accruing to profits is back to 1950s levels) and the persistence of unemployment (steady at around 10% since the early 1980s), it is argued that the fall in the wage share is not just the result of a reaction of the ‘market forces’ to the ‘wage shock’ of the late 1960s and the oil crises of 1973 and 1978.¹ Rather, the fall is also said to have been determined by ‘labour demand shocks’ during the 1980s and 1990s resulting from labour-saving technical progress or an increase in the use cost of capital, considered as given exogenously since fixed at the international level. Furthermore, there have been references to an increase in profit margins on prime production costs caused not so much by a fall in the ‘degree of competition’ in product markets (thought to be unrealistic because of growing international competition), as by a reduction in the trade unions’ bargaining power and, with it, the ‘monopoly rents’ the workers allegedly managed to appropriate.

Such a lack of consensus on the causes of the fall in the wage share is not surprising and seems to arise both from still unexplained empirical antinomies and from theoretical limits of the models on which empirical estimates are usually based. As regards the empirical aspects, a fall in union bargaining strength or other changes of an institutional nature are sometimes seen as the most plausible factors for the fall in the wage share in countries such as France, Germany and Italy (cf. Bentolilla and St. Paul, 2003). Yet, the recent literature, rarely does provide any analysis or further specification of these factors, nor it explains why the phenomenon, though occurring with different intensity, has been common to most the major industrialized countries (cf. Ellis and Smith, 2007). The same kind of difficulties can be found with respect to the other possible sources of ‘shifts’ in the relationship between relative factors prices and the capital-labour ratio. As regards to technical progress, for example, it has been noticed that it is hard to understand why it should have been labour-saving in Europe, but not in the United States, where the wage share has remained more or less stable (cf. Nordhaus, 1997).² Likewise, as regards the cost use of capital, it has been argued that, thanks to substitution elasticity between capital and labour other than 1, its variations could have influenced the trend of the share accruing to wages (cf. Bagli, Cetto and Sylvain, 2003; Landmann

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¹ These are both ‘supply shocks’ which, because of the unemployment they are said to have generated, should subsequently have determined a recovery of profits and a fall in the share of wages due to a short-period substitution elasticity between labour and capital of less than 1.

² If the share has in fact kept stable in the United States for the private sector as a whole and why it has done so is not analysed here, and would require careful consideration of existing differences in the statistical definition of the aggregates in national accounting, managerial work not being included in the Italian aggregate for employees, while it is included in the US. It should however be noted that, even if one wanted to link the prevalence of labour-saving technology to an increase in the price of labour relative to capital’s use cost, the increase is not found in Europe or the United States in the last two decades. Moreover, should one want to link the prevalence or lack of prevalence of labour-saving technology to the greater or lower intensity of ‘supply shocks’ in the 1970s in the various countries (cf. Phelps, 1997), one would in any case need *ad hoc* hypotheses for the very long delays in the introduction of the innovations.

and Jerger, 1993). But one would still have to explain why the capital/labour ratio should have increased more in Europe than in the United States, even though interest rates in the former were rising and higher than in the latter. Finally, as regards factor substitution elasticity, some perplexity has been caused by the fact that the elasticity of the wage share with respect to variations in the relative quantities of production factors turns out to be relatively small, even for substitution elasticities between labour and capital extensively greater than 1 (cf. Bronfenbrenner, 1960). Thus, for Italy, the magnitude of the elasticity of substitution which would be required to explain the fall in the wage share relative to the increase in the capital/labour ratio seems to be some way from giving a plausible value (cf. Rowthorn, 1998)³.

Turning to more theoretical issues, the uncertainties in the most recent literature on why the wage share fell in the last two decades seems not so much to stem from difficulties in ascertaining the fact and estimating the relative weight of the factors mentioned above (in fact, problems common to any theoretical approach), nor even simply from difficulties in the statistical measurements, as from the *type* of model which are estimated. In fact, the relative weighting of the various factors in determining the falling share of wages has been usually decided on the basis of a relationship according to which, for known and given production techniques or a given rate of Harrod-style neutral technical progress, an increase (in efficiency units) in the capital/labour ratio will be necessarily associated with a fall in the ratio of capital price to wage rate (also expressed in efficiency units), and – for a given substitution elasticity – a given wage share. Thus, whenever the observed values differ from the theoretical ones determined under specific hypotheses for the values of the model's parameters, the difference would indicate that some other factor influenced the share of the product accruing to labour.

Yet, when more than one sector and the interdependence of relative prices are taken into consideration, the limits of this approach, and in particular of its initial theoretical hypotheses, seem to emerge clearly. Even leaving aside the importance of structural changes in the economy or the difficulties in distinguishing variations in per head product due to technical change from those due to changes in the availability of capital per head,⁴ we know that, if the wage falls, cost minimization may actually lead to adopting less labour intensive techniques or to a fall in the relative prices of the consumption goods requiring relatively less labour to be produced (cf. Garegnani, 1970 and Pasinetti, 1966); and this would result in variations of the rate of profit differing from those expected, without this implying the intervention of a particular type of technical progress or changes in market conditions (cf. Spaventa, 1974).⁵

Starting thus out from a classical type of approach rather than the estimates of a simplified model based on theoretical relations of a neo-classical type⁶, in this paper, we shall try to extend on

³ On the low estimated elasticity of substitution see also Acemoglu (2003). For the same reason, it is not too plausible to interpret (cf. Caballero and Hammour, 1998) the fall of the wage share in the 1980s and 1990s *below* what it was in the 1960s in terms of a *long-period* substitution elasticity which with respect to an increase in the capital/labour ratio, would be greater than 1, also due to the low rate of innovation that has seemed to characterise the Italian economy in the last decade (on the relationship between substitution elasticity and innovation, cf. Hicks, 1932).

⁴ This distinction is based (cf. Solow, 1957) on the hypothesis of constant returns to scale and an aggregate production function.

⁵ Note that, in the most recent literature, all caution seems to have been thrown to the winds in using aggregate production functions, even only of the type found in Solow (1957, n. 1). In general, however, it is only in the unrealistic case of balanced growth that one can talk about equality between the profit rate and the 'marginal product of capital', and without being able to draw out the usual neo-classical implications for the theory of distribution (cf. Garegnani, 1984).

⁶ In classical, unlike neoclassical theory, the wage, technical conditions of production and social product are determined prior to and separately from relative prices and the profit rate. This opens the theory up to an analysis of the mutual influences between these variables, as well as the weight that socio-historical factors have in determining them. In this context, the study of changes in distribution over time must be conducted with specific analyses and a method of successive approximations rather than models which attempt to estimate, in necessarily simplified terms, the relationships between production, distribution and relative prices (which obviously does not exclude the usefulness of

some of the results we published in an earlier paper (cf. Levrero and Stirati, 2004) on the historical, social and economic causes of the slowing of growth in real wages in Italy in the last two decades. In particular, we want here to focus on the role of labour cost, productivity and relative prices in determining the trend of profit margins in the business sector as a whole and in different sectors and branches of production. More precisely, after discussing the relevance of sectoral composition effects (Section II) and analysing the trend of distributive shares in the various sectors, we will show how the trend seems to fail to reflect variations in the ratio between capital and added value (Section III), and how, in the last two decades, together with a fall in profitability in the industrial transformation sector, there has been an increase in profitability in agriculture, energy and large part of the service sectors. We will then analyse how much, in the various sectors, real labour costs, productivity and the ratio between cost of living index and the value added deflator have contributed to determining the observed variations in income shares (Section IV). Hence, in Section V, we will concentrate on industry in the narrow sense and show that, in this sector, the fall since the end of 1970s of product prices relative to the cost of living and to the price of intermediate goods from other sectors (in particular, services) seems to stem not only from the different trends in productivity and labour cost in the various sectors, but also from changes of an institutional nature in the exchange regime adopted and the prevalent product market conditions (including the rise in international trade of new manufacturing countries). Finally, in Section VI, we will observe how, if to understand the trend of distribution one must look at the share of profits for the economy as a whole (given, among other things, the high degree of financial integration between firms), the redistribution of income from industry to services has also had a role in shaping the dynamics of real wages in the economy as a whole, given the leading function played by manufacturing in wage bargaining. In fact, the limitation of 'margins' for wage increases in industry has been associated with a drastic adverse change in industrial workers' bargaining power since the end of the 1970s, leading to a growth in real labour costs systematically lower than the growth in productivity.

2. The effects of sectoral composition and incomes of self-employed workers

Before reconstructing how wage shares have fared in the main branches of production, we will take a brief look at two hypotheses often proposed to explain the dynamic of distribution in the main industrial countries in the last two decades. The first is that the fall in the wage share reflects an effect of sectoral composition, namely changes in the weight of the different sectors in overall added value. The second is that changes in the proportion of self-employed workers to overall employment places a question mark (cf. Krueger, 1999) over the validity of wage share estimates whereby those workers are assigned the same wage as employees in the same sector. If the self-employed were to disappear from one year to the next, while overall employment remains unchanged, this method of imputing the labour cost of the self-employed would leave in fact the wage share unchanged, while it would increase if the self-employed were assigned a lower 'figurative income', because, for example they have lower productivity than employees.

As regards the effects of sectoral composition, Figure 1 shows, on the one hand, for 1970-2003, the effective trend of the wage share in added value for industry and the economy's private sector (net of rents for buildings);⁷ and on the other, the trend these wage shares would have shown by attributing the proportion of overall added value produced *on average* in the *individual* sub-sectors

statistical estimates for some variables, for example, the influence of unemployment and productivity on the wage trend). On the other hand, this method of successive approximations is the only one that Marshall himself (1980: 304) thought appropriate in these cases: "(t)he element of time is a chief cause of those difficulties in economic investigations which make it necessary for man with his limited powers to go *step by step*; breaking up a complex question, studying one bit at a time, and at last combining his partial solutions into a more or less complete solution of the whole riddle".

⁷ As Torrini has highlighted (2004), because housing rentals rise, yet are a branch of the economy employing no labour, their inclusion in the real estate property sectors would 'inflate' the sector's profits, altering the results of the decomposition procedure.

in the entire period considered as a constant weight to their wage shares⁸. What we find is that variations in the effective wage share, on the one hand, and in constant weight one, on the other, never differ significantly and that, for the private sector, the corrected figure changes from 72% in 1970 to 76% in 1975 and 66% in 2003. The only exception is industry in 1999-2003 where growth in the corrected wage share is greater than in the effective share, and the shift towards sectors with a lower weight of labour costs in value added therefore seems to have attenuated the fall in profits found in the last period (profits here being considered gross of amortisation, direct taxes and interest payments). But as in the case of the private sector as a whole, the composition effect does not in any case seem relevant *on average*. For 1970-82, 1982-92 and 1992-2002, Table 1 shows the results of de-composition of variation in the wage share in the part due to changes in the composition of added value in industry, and in the part due to wages shares in the individual branches of production. As can be seen, if there was a fall in the wage share in industry in 1992-2002, except, as we mentioned above, after 1999, it was, in large part, not determined by changes in the weight of the various productive activities in added value in industry.

As regards the claim related to the calculation of ‘figurative incomes’ for self-employed workers, the issue is, obviously, relevant for the *levels* of the shares, but not for their *variations*. So, due, for the past, to the weight of low-income self-employed workers (peasants in mountainous areas and other poor areas in the Mezzogiorno) and, now, to the weight of the self-employed in service companies and as carers (a third of the total) and in industrial firms with 1-19 employees (40% of the total), the wage share levels calculated, for example, by assigning the self-employed half the labour costs of employees turn out to be lower than in the usual calculation when they are taken to be on the same footing. But, in the private sector, the ratio between total standard labour units, on the one hand, and the labour units of contract workers on the other has remained substantially unchanged between 1970 and 2002 and, in industry, it has increased by only a little, so that the *trend* of wage shares according to the two hypotheses for calculating so-called ‘figurative incomes’ show no significant differences.⁹

3. The trend of distribution in Italy, 1970-2000

Variations in distributive shares (calculated from now on with the usual attribution to self-employed labour of the average income of employees in the aggregate in question) give an immediate indication of the trend of the gross margin on labour cost per unit of product.¹⁰ Figure 2 shows that the margin generally grows for the first half of the 1970s, but that the increase in industry is less

⁸ For the trend of effective wage shares in the various sectors, see also Table 3.

⁹ In the calculations, which are not included here for lack of space, rather than applying

$$RL/VA = (wL_d/VA)(L_t/L_d)$$

the formula used was

$$RL/VA = (wL_d/VA)(1+0,5L_a/L_d)$$

where RL and VA indicate total labour costs and value added; w the labour cost of a standard labour unit of a contract employee; L_d, L_t , and L_a respectively employees’ standard labour units, total labour and self-employed labour.

¹⁰The monetary price can always be seen in accounting terms as equal to the labour cost per unit of product and to a gross margin on this cost representative of all the other costs and profits, in other words, as equal to

$$P = (1+m)(w/\pi)$$

From which you get

$$(1+m) = VA/wL = 1/Q_t$$

where w is the nominal wage, L the number of workers, VA value added, π the product per worker in real terms, m the gross margin, P the price, Q_t the wage share.

than in the private sector as a whole as early as 1983 and suffers a further and more marked relative reduction starting in the late 1980s.

But analysing the trend of the gross margin for the aggregate and at the sectoral level is in itself not sufficient to say that there has been a variation in the rate of profit and, therefore, in distribution. The observed trends could in fact be the result of nothing more than an increase in the ratio between the value of capital and value added value, both for the aggregate and to a different degree in the individual sectors, with the profit rate unchanged. So it is necessary to take into account the variations in the value of fixed capital, circulating capital and amortisation in relation to added value. These are aggregates for which statistical series are available from 1980 to 2000.¹¹ In order to take account of these variations, we can estimate the *ex post* 'profit rate' and its variations by comparing them with variations in the share accruing to incomes from capital for individual sectors and in aggregate. The results are shown in Table 2, while Figure 3.2 shows the data for a sole variant of the estimate (the gross *ex post* 'profit rate' only on fixed capital) for the whole period for some sectors.

Before looking at the data, it may be wise to enter some caveats. The 'profit rate' we are in a position to calculate is *ex post*, in other words, it reflects the degree of capacity utilization (which may differ from the normal or desirable degree, even over long periods of time),¹² and the effective structure of fixed capital, which generally incorporates obsolete plant and machinery on which quasi-rents are received below the normal profit rate (that is, the profit rate one expects to obtain from the means of production in which new investments are being made and that incorporate the most profitable techniques of production). On another level, and in addition to this, there are the well-known statistical issues involved in measuring the profit rate. In general, in fact, statistics for capital and amortisation depend on educated guesses as to the obsolescence of plant. Moreover, there are no direct estimates of the value of circulating capital, and the difference between production and added value as an estimate for circulating capital, though used in the past in similar studies, is not entirely satisfactory since it also reflects the degree of 'vertical integration' of the productive processes and may thus give rise to distortions.¹³ Finally, the derived accounting estimates refer to a period of a year, and no information is available on the actual rotation period of the circulating capital, which will in general be significantly less than one year and change over time and across sectors.¹⁴

In any case, from Table 2, we can see that the *ex post* profit rate and its variations, expressed as a simple difference, have been estimated in three variants: the first two net of amortisation, one only in relationship to fixed capital, and the second to fixed plus circulating capital (estimated as we noted above); and the third gross of amortisation and only in relationship to fixed capital. All the variations refer to five-year averages at the beginning and end of the period 1980-2000. Now, the following considerations can be made on the basis of the estimates. In *Industry* taken as a whole, the variations in the profit share (modest in this period) turn out to be more than offset by variations

¹¹ For net fixed capital and amortisation, we have the Istat series from 1980 and we can derive an approximation for circulating capital from the national accounts from the difference between production and added value by sector. The data on fixed capital are only available up to 2000 for individual branches and up to 2002 for macro-sectors. To maintain a certain disaggregation when it is found to be useful, we have limited estimates of the *ex post* profit rate to 2000.

¹² For the theoretical premises underpinning this claim, cf., for example, Ciccone (1986) and Garegnani (1992).

¹³ If, over time, there is a prevalence of a tendency towards the division of labour between productive units within the aggregate under consideration, this will tend to generate an increase in the difference between production and added value (cf. Istat, 1970-2001 *Introduzione*), without corresponding changes in the quantities and costs of the intermediate inputs effectively used, this determining a tendency to *underestimate* increases in the 'profit rate'. These distortions can evidently take on different degrees and directions in different sectors.

¹⁴ In the absence of the rotation times of the circulating capital, for our estimate of the trend of the 'profit rate' calculated on fixed and circulating capital (Table 2), we assume arbitrarily that the rotation period is a year, thus certainly making a significant *underestimation* of the *level* of profitability. If there should be reasons to believe that organisational changes are aimed at achieving a greater rotation velocity of circulating capital (for example, with 'just in time' production methods), the distortion will also concern the *variation* in the time of the profit rates.

in amortisation and the ratio of capital to value added so that the 'ex post profit rate' is found to register a moderate fall in all the three variants between the beginning and the end of the period.

Looking at the annual data (Figure 3), you can see that, during the 1980s, a rising trend made its appearance similar to the one for the gross margin, while after 1989 (with an interruption in 1993-95) the erosion of the *ex post* profit rate starts, associated with a widening of the difference from the service sector (for an explanation, see Section V). It is also important to stress that these trends, at least going by the available data, do not depend on changes in the degree of utilisation of productive capacity in the sector¹⁵. Within the industrial sector, it is worth noting the continuous and significant increase in profitability in *energy production*, an increase which, on the basis of annual data (not shown), speeded up after 1993 (cf. note 29), albeit starting from estimated levels lower than in other sectors.

As regards private services (Table 2), unlike industry, there is a trend towards increasing profitability both for the two sectors in aggregate and for some branches, in particular, hotels and retail catering (bars, restaurants etc.), transport and communication, and real estate property and professional activities. There was a slight erosion of the profit rate for commerce, and no clear direction for the activities of financial services (where the tendencies differ according to the variant adopted for the estimate). In both these latter two branches, however, the annual data for the gross 'profit rate' on fixed capital alone (not shown) reveal ample fluctuations, and no clear trend (except strong growth for the financial services beginning in 2000). In both, too, the *levels* of estimated profitability (in all the variants) seem very high. The annual data (not shown) relative to the other branches of the services show that, after the very strong growth of the 1980s, in the 1990s hotels and retail catering showed falling *ex post* profitability with a tendency to converge with industry, while increases continued in transport and communications (from lower levels than in industry) and in real estate property and professional activities.¹⁶

For the 1970s, no complete series for capital and amortisation is available. However, using the estimates in Rosa and Siesto (1985)¹⁷, it is possible to reconstruct some elements *only for the industrial sector*: between the two three-year periods, 1970-73 and 1978-80, the increase in the profit share (+8%) cannot be traced back to increases in the ratio between fixed capital and industrial GDP, which fell (-5%). So there had already been an increase in gross *ex post* profitability in the late 1970s, which was interrupted in the early 1980s (immediately after Italian entry into the European Monetary System and during years when the sector was suffering from a strong recession); registering then a recovery until 1989.

Even though, as we said, data on *ex post* profitability suffer from various limitations, we think they can be used, if not to make estimates or comparisons between 'levels', at least as a

¹⁵ In fact, Bank of Italy data show an average degree of utilisation of productive capacity in industry as a whole as being greater in 1996-2000 (about 97%) than in 1980-84 (about 92%), so that the fall in the *ex post* profit rate mentioned above does not seem to depend on a more marked under-utilisation of capacity in the final period. Similar conclusions can be derived from the ISCO-ISAE data. Even though the estimated *levels* of the degree of utilisation are different between the two sources (the Isco-Isae data for 1986-2000 are based on declarations by firms as to the share of productive capacity used, while the Bank of Italy combines this datum with an index reflecting the ratio between maximum and current production in the cycle), the data lead to similar conclusions: the *trend* on annual basis of the gross *ex post* 'profit rate' on fixed capital alone maintains the same profile, even when the data are corrected for degree of utilisation. In particular, one continues to find the reduction starting in 1995.

¹⁶ Disaggregated data only for professional activities are available from 1992. These show a very high share for incomes from capital, a share which grew between 1992 and 1997 from 35% to 40% (for a comparison, in the same year, in manufacturing, only the chemical industry had a higher profit share). Subsequently, it fell to 30% in 2002, probably also because of the rising numbers of low-income, only formally self-employed workers, such as those with 'collaboration contracts', a form of flexible contract enabling employers to commission regular work from so called collaborators without putting them on the permanent payroll. In this sector, in fact, 'profits' consist of the excess of the incomes of self-employed professionals with respect to the average earnings of employees in the same sector.

¹⁷ The data given by Rosa and Siesto are available only at constant prices, while previously we always considered capital and value added at current prices. Since the period is relatively short, one can hope that using constant price series, that fail to take into account changes in relative prices, does not lead to excessive distortions.

‘circumstantial’ indicator that, together with others, can supply an indication of profitability trends within the different sectors. The conclusion we feel we can reach is that, starting in the late 1970s, at the aggregate level, there has been an increase in the share of profits which does not seem to be associated with a corresponding increase in the ratio of the value to added value – and which therefore corresponds to an increase in *ex post* profitability on capital. With disaggregation, however, it should be noted that, for the period as a whole, the trend of profitability was less favourable in industry (where the share registered a modest increase) relative to some sectors of private services.¹⁸

4. The effect of variations in real labour costs, productivity and relative prices

To understand why the increase, on average, in private sector profitability and its different dynamics in the various sectors were possible, we can now analyse the contribution to the variation in the distributive shares coming from labour costs¹⁹ and productivity, on the one hand, and variations in relative prices on the other, both in aggregate and for the various sectors and branches, starting from the equation:

$$Q_l = [(w/P_w)/\pi]^* (P_w/P_i)$$

where w is labour costs, P_w the cost of living index, π the product per employee, P_i the deflator for the sector referred to, Q_l the wage share.

Table 3 shows the contribution made by the percent variation in the two terms of the product on the right hand side of the equation to the percentage variation in the wage share in three large sub-periods. In the first, 1970-82, for the *whole of the private sector*, real wages in terms of the cost of living grow more than productivity (the ratio grows by 14%). Yet, there is also a movement in the opposite direction, and of a similar magnitude, in the ratio of cost of living and GDP deflator measured at factor costs, that is before indirect taxes and subsidies. This change in the ratio is explained for about a third by the variation of the incidence of net indirect taxes (under the assumption that the average incidence of net indirect taxes - net, that is, of subsidies to firms - on value added is the same as on the basket of goods used for the cost of living index) on market prices, which fell by 4%, while the rest must be traced back to the different composition in the product baskets making up the two aggregates.²⁰

Looking now at the individual sectors or branches, for the industrial sector the trend is similar to the private sector as a whole. But for the other sectors, the important points are, firstly, the marked increase in the ratio of incomes to productivity in various branches of private services and in energy production, depending on a modest dynamic of productivity. For energy production and financial

¹⁸ In fact, the new national accounts series do not make it possible to establish a clear distinction between the business sector and the public sector of the economy, so it is obtained here by approximation, by subtracting from the aggregate for the whole economy, the sector of ‘other services’ which includes the public administration, public social insurance, health and education (the latter being, in Italy provided to a very large extent by the public sector).

¹⁹ We have chosen not to give separate consideration to the trend of earnings (including contributions paid by employees) and labour costs (including the full amount spent on contributions by both employers and employees). The reason is that, here, we are interested above all in analysing the factors which determined the profit share and its trend. Yet our analysis was also applied to earnings and employers contributions taken separately.. What we found was that, in the period as a whole and in 1982-02, the trend in contributions favoured a containment of labour costs. In all sectors, labour costs grew less than earnings, with a difference of 5-10% according to the sector, and of 16% for financial services.

²⁰ In this connection, one can observe, for example, that in industries that have a greater weight in the cost of living index than in the aggregate GDP deflator, such as textiles, clothing, and agriculture, prices fall slightly with respect to the cost of living, and that in transport and real estate and professional activities, the sectoral deflator shows much more moderate growth than the aggregate GDP deflator. It is also worth recalling that, in this phase, indexation of wages to the cost of living index meant that special attention was paid to containing the specific prices and tariffs that enter into the cost of living basket.

services, the ratio even shows a reduction, of 10% and 32% respectively. Secondly, looking at the relationship of the cost of living and the value added deflator, there is a strong increase in the relative price of financial services (*more* than offsetting the increase in the incomes/productivity ratio), while in agriculture, transport and real estate property and professional activities, the ratio remains stable.

In the following decade, 1982-92, we find in the aggregate a reversal of trend in the variation of the relationship between labour costs and productivity, which fell by 5%. The ratio of cost of living to GDP deflator was unchanged, and the wage share fell. Moving to a sectoral analysis, we find a reduction in the earnings/productivity ratio in agriculture, industry and transport, and to a lesser degree in commerce. But among these, in Industry, unlike the other three sectors, the wage share *increases* (albeit moderately) after the increase in the ratio of the cost of living index to the GDP deflator. There is also a group of sectors in which there was little growth in productivity, or productivity even fell,²¹ leading to an increase in the ratio of labour cost to productivity, but in which the increase in price with respect to the cost of living was such as to permit an increase in the profit share: these are energy production, hotels and retail catering, and real estate property and professional activities.²²

In the last ten-year period, 1992-2002, in the private sector as a whole, there is a more marked reduction in the ratio of earnings to productivity, by 15%, and an increase in the cost of living with respect to the private sector deflator, which can be fully explained by an increase in the ratio of market prices to factor cost prices due to an increase in net indirect taxes, by 5%. In this phase, too, in industry, the reduction by 14% in the labour cost/productivity ratio was in large measure offset by the increase in 12% in the cost of living in relationship to the GDP deflator. There was also a very significant reduction in the labour cost/productivity ratio in agriculture (-43%), transport (-30%), energy production (-44%), commerce (-13%) and financial services (-32%). Apart from the stagnation of wages, this was thanks to an improvement in the dynamics of productivity. In all these sectors, you also find an increase in the ratio between the cost of living and the sectoral deflator, but with the exception of commerce, *not* large enough to offset the reduction in earnings with respect to productivity, so that there was a significant reduction in the wage share. In real estate property and professional activities, as in retail catering, the trend towards the stagnation of productivity and a significant increase in the sector's relative price continued.

To sum up this analysis, two main points have emerged. Firstly, the fact that, starting in the 1980s, there was a general trend for real wages in terms of the cost of living to grow less than productivity. This lies at the basis of the tendency, in aggregate, for a redistribution of income in favour of incomes from capital. Secondly, it turns out that, from 1982 on, variations in relative prices seemed to give a systematic advantage, albeit to different degrees, to private service sectors and energy production compared to industry, thus contributing to determining the different trends of distributive shares and the *ex post* profitability of capital in the various sectors and branches. In the 1990s, the picture changed in energy production and in various branches of the services, even if not

²¹ In two branches, real estate property and professional activities, and hotels and retail catering, productivity in 2002 was significantly lower than in 1970 (-37% and -9% respectively), while financial services recent returned to the starting levels after a very strong fall in the 1970s. Certainly, one can wonder about the reliability of the data, or the possible role of internal composition effects. Yet, taken with the employment figures (a big increase in all three branches, above all as self-employment in the first two), they conform to the idea, often suggested in the literature, that these sectors have often acted as a 'sponge' mopping up excess labour supply to a degree not justified by an increase in the volume of services produced and demand for them. To this, there seems to have corresponded a trend in the prices of these services such as to safeguard, or in some cases improve in relative terms, profit incomes or the income differential of the self-employed *viz a viz* the employees.

²² In real estate property and professional activities, you find a trend towards an increase in the profitability of capital (see above), even if there was a reduction in the profit *share*, owing to a fall in the value of capital per unit of value added. The sector of real estate property and professional activities has very particular characteristics since, as we have seen, it includes as 'capital' the *whole* housing stock including owner-occupied houses. The reduction in the ratio of the value of capital to added value, as well as the reduction in productivity at constant prices in the sector should be attributed to a growth in the relative weight of professional activities in the sector's composition.

in all of them, as regards the *growth in productivity*, which was much greater than in the previous period. But relative prices in large part of the private service sector still tended to increase and allow a growth in gross margins and *ex post* profitability greater than in the industrial sector.

5. Relative prices, competition and wages in industry

In the two previous sections, we examined the variations found since the end of the 1970s in relative prices, profit margins and the *ex post* profit rate in various sectors of the economy. We shall now try to understand what might have influenced industrial production costs and what may therefore have been the causes of the less favourable trend for the profitability of capital in the sector. As we shall see, this does not seem to stem from wage pressure, and the flow of income from industry to the services from 1980 on appears to be determined, in addition to different labour productivity dynamics in the various sectors, by changes in the exchange regime adopted and in the prevailing conditions on the product markets.

Looking at Figure 4, we can grasp a direct image of the price variations that, from 1981 on, lay behind the fall in the deflator for industry relative to the cost of living, from 129.3 in 1981 to 95.2 in 2002,²³ and therefore behind one of the determinants, at least from an ‘accounting’ viewpoint, of the *ex post* profitability of capital in the sector. Apart from the role mentioned above of the deflator for net indirect taxes, we can see from the figure that, while the deflators for imports and agriculture fell on average in the last two decades with respect to both the cost of living and the deflator for industry (and therefore played their part in increasing profit margins in industry), prices in the sector of commerce increased as much as the cost of living but more than the deflator for industry, and in general the deflators for the services grew relative to the cost of living as well as the deflator for industry. In particular, as we saw in the previous section, the fall in the deflator for industry with respect to the cost of living was certainly influenced by rising prices for hotels, retail catering, entertainment and culture (in general, tourism and catering), by rising prices in the ‘other service activities’ sector (whereby, health and education costs), by the increase in the prices of professional services, and finally by the increase in the price of housing and the financial services.

This increase in the price of services with respect to manufactures is recognised as a phenomenon common to most of the industrial countries (cf. Baumol, 2000), and it is difficult to establish to what degree it is due to the more restricted possibilities for the standardisation of production in the services (cf. Delaunmay and Gadrey, 1992),²⁴ and to what degree to different labour cost dynamics per unit of product in the various sectors, or to changes in the ‘normal profits’ of firms,²⁵ or again in the conditions of competition in the product markets. Yet three elements seem to suggest that the redistribution of profits from industry to the services determined by changes in relative prices may also have stemmed from conditions in the product markets. Firstly, as Figure 5 shows, if in the 1980s the increase in the relative price of services might have been to some extent the result of the lower growth in productivity with respect to industry, not offset by a similarly low growth in wages (cf. Brunello and Checchi, 2000), in the 1990s, the relative price of services increased even though productivity relative to industry remained substantially stable. Secondly, unlike in the manufacturing sector, profit shares in those sectors and in energy reached levels in 2001 much higher than those they had before the fall they experienced in the 1970s and higher than the average value for the private sector, despite increases in unit labour costs greater than in

²³ The deflators shown in the table are all expressed in terms of the cost of living, but to ensure uniformity with the decomposition we will be effecting in this section, unlike the previous sections, they will refer to gross saleable production deflators at base prices.

²⁴ Because of the lower growth in labour productivity, the relative price of the services would in this case increase due to the simple effect of competition under the hypothesis of a uniform growth rate for the wage in the various sectors.

²⁵ What we mean here is the part of the profit rate that for the classical economists would remunerate the “risk and trouble” involved in investing in the various industries.

industry for the period as a whole²⁶ and with varying dynamics for the capital/value added ratio over the period. Finally, the increase in the relative price of services taken as a whole took place principally, or with greater intensity, when the lira's real exchange rate was appreciating - in other words, when foreign competition for manufacturers became more pressing, something from which the service sector remained in large part protected.²⁷

As a matter of principle, these phenomena could certainly originate both from the pressure of foreign competition (increasing from the end of the 1970s due to the change in exchange rate regime and the emergence of new manufacturers at the world level) and from changes in the 'degree of competition' within the various sectors. Yet, even if the service sectors showed greater variability in prices and enjoyed market conditions much further from free competition than the manufacturing sector (for example, due to high segmentation and regulated access to the professions),²⁸ nothing has been observed for the years in question to suggest changes such as to create *yet higher* entry barriers. If anything, what seems to have contributed to increasing the ratio between cost of living and the price of manufactures in the last two decades is the price policies pursued in the public sector, now characterised by a reduction in price controls and increases in public service tariffs. Apparently working in the same direction were privatisations in energy, telecommunications and monetary and financial services,²⁹ which may have ended situations of formal monopoly, but also produced private oligopolies and tacit agreements such as to guarantee either price increases, or in any case that the increases in productivity found in these sectors during the 1990s would be transferred primarily to profits rather than price reductions.³⁰

As regards foreign competition, which seems to us to have had an important role in the increase in the *relative* price of services, we recall, on the one hand, that the trend of industrial prices relative to services may depend, at least *in the short term*, not only on the dynamics of costs per unit of product in the various sectors, but also on the pressure of international competition and how much an increase in costs will translate into a reduction in profit margins or, if offloaded onto prices, into a loss of market shares.³¹ On the other hand, the increase in the price of services may influence

²⁶ Taking the cost of living as numeraire, if, from 1982 on, the cost of living per unit of product, gross real margins of incomes other than wages and prices all showed a falling trend in industry, in commerce as a whole, prices and margins increased until 1987, even with a fall in costs per unit of product. Only subsequently did prices start to fall, leaving margins almost constant, while for financial services, professional services and charters, you find an increase in prices and margins, which in the end finished by outstripping those in industry, against a relatively small increase in the cost of labour per unit of product.

²⁷ Thus, the relative price of services fell in the 1970s (a phase of continual devaluations) despite an increase in productivity in industry relative to the service sector, and it remained constant from 1992 to 1996, then rising, even with relatively stable productivity.

²⁸ Cf. Cetorelli and Vialli, 2003; Fabiani, Gattulli and Sabbatici, 2004; Gerardin, 2000. For example, only a small part of the market in financial services and insurance (characterised, among other things, by demand with low elasticity due to institutional factors) is taken up by foreign operators, and there are fewer firms in the market than in other countries: cf. European Commission, 1997a and 2000.

²⁹ As is known (cf. Goglio, 2001; Giavazzi, Penati e Tabellini, 1998), after the transformation of ENEL, ENI and IRI into joint stock companies, public enterprises were sold off, bringing in up until 1998 25,000 billion lire, or 8% of Italy's GDP, a sum greater than in all the other industrial countries.

³⁰ With given production methods, privatisation in fact determines an increase in the relative price, whatever the market conditions, due to the emergence of the necessary remuneration of capital. Expectation of a fall in prices in privatised industry thus seems to be linked to expected productivity increases. But there seems to be no one-on-one relationship between the weight of the public sector in the services and the trend or level of prices. Thus, Italy has the highest electricity prices in Europe, higher than in France, where the electricity and gas industries have opened up less to competition, or in Sweden and Finland, where there is less opening to competition than in Italy, yet prices are the lowest in Europe (cf. Gersim, 2004, p. 22).

³¹ Given the *real* wage, a reduction in the relative prices in manufacturing industry will lead to an increase in the relative profitability of the service sector. If such a situation should persist, and competition and free capital mobility prevail, it would lead to a shift in capital away from manufacturing production and towards services, and a resumption of the initial relative prices, but this may require time, for example, because of the high entry barriers characteristic of the service sector. In the long period, the result may be lower levels of activity and/or changes in manufacturing

industrial prices indirectly by producing demands for wage increases (the more so, the more the services are in the workers' cost of living basket), and directly as a cost factor.³²

We can see the importance of all this for the trend of the profitability of capital in industry by de-composing, above all, the influence on wage shares exerted by variations in real labour costs, labour productivity, relative prices and the value of intermediate goods per unit of product from 1970 to 2002. In fact, let us calculate what that share would be if, each of the elements in turn in the equation

$$Q_I = ((P_w/P_x)(w_r L/X))/(1-(P_m/P_x)M/X-(P_a/P_x)A/X)^{33}$$

had maintained the value it had in the initial year considered, as already shown by G. and L. Rampa (1992) and Silva (1992). For the 1980s, we then see that (Figure 4), in the period 1982-2000, the increase in the relative price of intermediate goods seems to have played an important role in reducing the share of profits. In particular, if, from 1982 on, variations in real wages were more than offset by variations in gross saleable production per unit of standard labour used, both the relative price of wage goods and the relative value of raw materials and intermediate goods are unfavourable to the share taken by profits. Between 1982 and 1992, this reflects above all the increase in the relative price of *domestic* inputs, given the improvement in the international terms of trade. From 1992 to 2000, the opposite is found, and the effect of variation in the overall value of intermediate inputs is less significant (even though the *quantity* of intermediate goods used per unit of product continued to increase).³⁴ But, if (see Table 5) the deflator for domestic inputs between 1992 and 2000 increased less than for imported inputs, the service inputs deflator increased slightly more than both the domestic and the output deflator. So, while it is above all in the 1980s that you have a redistribution of income from industry to services, in the 1990s, the same effect was still present, even if less intensely, and primarily from 1996 on. It is in fact the devaluation of 1992 that reduced re-distribution, in contrast with the years 1996-2003, allowing the price of output in industry to increase slightly more than the price of services up until 1996.

For Italy's specific specialisations (food, textiles, furniture, plastics and rubber, industrial equipment), and given that on average 'protected' sectors show lower gains in productivity in Italy than in other European countries, including France and Germany,³⁵ this mechanism of an increase in the relative price of services in the absence of the safety valve of devaluation turned out to be particularly unfavourable for Italian manufacturing.³⁶ This is true in particular in 1979-82 (when

industry's methods of production, or in any case pressure to reduce real wages, or to ensure they grow less than production per worker.

³² In 1988, the cost of service inputs was 18.4% of variable production costs in industry (cf. Barca and Visco, 1992). Again in industry, spending on service inputs in 2000 was 23.7% of what was spent on inputs procured internally.

³³ Q_I be the share of wages in added value, w_r real labour costs, L/X the reciprocal of labour productivity, X gross production, P_w/P_x the price of the basket of wage goods relative to the price of industrial output, P_a/P_x the relative price of internal intermediate goods, P_m/P_x the terms of trade, A the internal intermediate goods and M the imported intermediate goods.

³⁴ This reflects the 'de-verticalisation' of production which is always accompanied by growth in the means of production sector (first with companies that design and build process plant, and now the so-called 'tertiarisation': cf. Baldone, 1988).

³⁵ Cf. Pellegrini, 1994; Prosperetti 1994; European Commission, 1997b. The relative price of services rose in Italy from 1980 on more than in other European countries, and productivity in the service sector compared to industry fell (in particular, from 1985 to 1992) more than elsewhere. In Germany, the relationship between productivities even remained constant from 1975-88 (Moller 2000: 200-1). The picture is less clear in the 1990s, both for the recovery of service sector productivity in Italy (product per employee rose from 100 in 1992 to 107.8 in 1999, growing as much as in Germany and more than in France), and because the price of services rose less in the years in question than in France, even if more than in Germany (cf. OECD, 2003a).

³⁶ Obviously, for the competitive position of Italian companies, what matters it is not so much the magnitude of the variation in the relative price of services as the *absolute* export price of Italian products compared to foreign ones expressed in a common currency. Apart from the exchange rate and the trend in the various countries of money wages and/or profit margins, the prices may be influenced by the different weight of services in manufacturing and the growth

Italy first entered the EMS), between 1988 and 1992 (when, as the country joined the EMS's narrow fluctuation band, the real exchange rate worsened and the reduction in industrial profits was associated with service prices that no longer contributed to a falling inflation rate), and finally from 1998 on with the introduction of the euro and an end to the effects of the devaluation in 1992³⁷, when we find a loss in Italy's competitiveness with respect to Germany and France (the main export markets for Italian goods) and with respect to other industrial countries.³⁸ On the other hand, after the euro's introduction, price convergence in the EU area was more attenuated, especially in the service sector (cf. BCE, 2003),³⁹ and, with Spain and Belgium, Italy continued to have inflation rates higher than France, Germany or the other main European countries, due also to "high and growing profit margins" in many parts of the service sector (cf. OECD, 2003b, p.60).

Now, it does not seem possible to impute these Italian industry's difficulties in the last decade and the fall in the profitability of capital in the industrial sector to wages, which in monetary terms per hour worked rose less than in other European countries (cf. for example BLS, 2002; Nardozi, 2004, p. 101-2).⁴⁰ Rather, the determinant between 1995 and 2002 of the increase, greater than elsewhere, in the cost of labour per unit of product (it grew in Italy, but fell for example in France and Germany) was the fall in the growth rate of labour productivity. While, between 1970 and 1980, productivity in Italian manufacturing grew less than in France but more than in Germany, between 1990 and 2000, it grew less than in either of the two countries (cf. OECD, 2003a). Bit by bit, this eroded Italian industry's competitive advantage, which stemmed from hourly monetary wages in manufacturing about the same as France's and less than Germany's and an hourly productivity among the highest in the world, thus giving substance the phantom of a true industrial decline in the country (cf. Gallino, 2003).

6. Conclusions: relative prices and income distribution in the private sector

The analysis of the trend in distributive shares in the previous sections has shown that, on the one hand, the fall in labour's share effectively seems to reflect a change in distribution - in other words, we have excluded that it could be the result of composition effects or an increase in the capital/output ratio. On the other hand, we have seen that profitability in the tertiary sector seems to have been favoured by a change in relative prices.

This section will give a brief summary of the circumstances that contributed to determining an income re-distribution at the aggregate level between wages and profits. In particular, we want to give further consideration to the factors that contributed to the moderate real wages dynamic from the end of the 1970s until today (cf. Levrero and Stirati, 2004) since this is what allowed the change in distributive shares in the private sector as a whole, and because the varying pressures from external limitations in the various sectors seem to have been *one* of the circumstances that contributed to the modest growth in Italian wages and their inability to keep up with the growth in productivity from the late 1970s on, in industry as well as in the private sector as a whole.

differentials for productivity in the various sectors. Together with the increase in housing rents, these factors seem to have worked unfavourably for Italy.

³⁷ Up until 1995, the devaluation guaranteed favourable real exchange rates, used by firms in large part to increase profit margins (cf. Banca d'Italia, 1995).

³⁸ Cf. ICE, 2003. In 2002, exports to the European Union accounted for 53.2% of the total of which 12.2% went to France and 13.7% to Germany. While the fall of Italian exports in world trade also stemmed from the emergence of new exporter countries, in the last decade, Italy has also lost ground with respect to France and Germany, even if not in the average of the period 1970-1999: cf. Valli, 2002, p.121.

³⁹ The difference between the growth rate of the prices of goods and the prices of services in fact fell in Italy between 1996 and 2000 due to a deceleration in the rate at which service prices were rising, but increased between 2000 and 2003, when the prices of goods stagnated, while service prices grew rapidly.

⁴⁰ The same can be said for real hourly wages which rose less than in other countries and below their long-term trend. On long-term trends in wages and productivity cf. Maddison (1995).

In the private sector in 1977-80, in Italy as in other countries, we see a reduction, compared to the phase starting in 1969, in the growth rate of real wages, both pre and post-tax. From this moment, they began systematically to grow less than productivity. The change in the rate at which wages varied in those years cannot be traced back fully to variations in the unemployment rate or in the rate of employment growth, the two most significant variables in determining the average trend in 1970-2000. In the turning-point of wage dynamics in 1977-80, a significant role seems to have been taken by restructuring and job reduction *in large firms* that had begun to take place in the mid-1970s, as well as changes in the political, institutional and macro-economic framework, which led to policies of “consensus stabilisation” and a first revision of the wage indexation mechanism towards reducing the protection of purchasing power (for a more extended analysis cf. Levrero & Stirati, 2004, sect. 5, and 2006, sect. 2).

Membership of the EMS in 1979 contributed further to determining a strong pressure on the containment in nominal wage growth and was one of the factors contributing to the fall in exports, industrial production and investments in the years immediately afterwards, with heavy consequences on employment. At the same time, an increase in international and domestic interest rates contributed to creating pressure towards an income redistribution unfavourable to wages. In the 1980s, you thus find a progressive decline in rates of increase in real wages associated with an increase in the unemployment rate, negative rates of change in industrial employment and a division and weakening of the trade union movement, which favoured a further limitation to the degree of wage indexation starting in 1984.

In a phase characterized by the entry into the EMS’s narrow exchange rate fluctuation band and growing preoccupations about the international competitiveness of Italian exports, the transitory moderate growth in industrial employment and the recovery of monetary wages between 1988 and 1990 led to the abolition of automatic wage indexation and a revision of the wage bargaining mechanisms set up in 1992 and 1993. This brought about the end of an automatic linkage of wages to actual inflation and delegated the distribution of productivity gains between profits and wages to bargaining at firm (rather than sectoral) level. These changes came at a time when labour as a whole was weak and, in that context, they led to the reduction of real wages after the 1992 devaluation and their stagnation, on average, for the whole of the 1990s.

Now, the analysis in this paper suggests that the trend of real wages in the private sector from 1979 on may also have stemmed from a growing relative disadvantage of the sector exposed to international competition in product markets associated to changes in the exchange rate regime, which took place with different degrees of intensity and rigidity in the various periods. In the whole period considered, manufacturing has been the leading sector in wage bargaining,⁴¹ and the situation described in the previous sections contributed to harshening distributive conflict precisely in this area of production. Caught, as it was, between costs rising more than in competing countries and the restraint imposed on price increases deriving from the fixed exchange rate and the Italian position in international product markets, manufacturing experienced a deterioration in its *relative* terms of profitability. Unions in this sector, and hence by extension to the whole of the business sector, thus found growing difficulties in obtaining monetary wage increases capable of defending purchasing power from price increases in sectors not exposed to international competition or in achieving a significant re-distribution to workers of increases in productivity. On the other hand, the increase in overall profits generated in this way favoured other sectors more than manufacturing through movements in relative prices.

From some points of view, the situation described here may present some similarities to the one analysed by Ricardo when he sees an increase in the production costs of agricultural wage goods as

⁴¹ This leading role is shown, on the one hand, in the sensitivity of contract wages in manufacturing to specific conditions in the sector (in particular, the trend of employment in the sector). This is not found in private services in general, nor in commerce in particular, the latter being the sector with by far the largest workforce within the service sector. On the other hand, it also finds expression in the very strong correlation between rates of variation of remuneration in the two sectors (Levrero & Stirati 2004, p. 72; see also Brunello, 1996).

a cause, with a given real wage, of the reduction in the rate of profit in the industrial sector in favour of rents. Yet, while production costs and relative prices of the wage goods continue to play an important role in determining income distribution and, consequently, effective demand and the national product⁴², unlike in the situation analysed by Ricardo, and in contrast with a frequent usage in the current literature, we do not feel it is appropriate to speak of ‘rents’ for the sectors not exposed to international competition in product markets. Except for the real estate sector, it seems more appropriate to speak of ‘extra-profits’ deriving from the inter-sectoral redistribution of the overall profits generated by the compression of prices in the sectors most exposed to international competition – and such that it could then be made more persistent by possible obstacles to competition and entry barriers for new firms in the non exposed sectors. If, in fact, one makes the hypothesis that, with a given real wage, in order not to lose market share, the exposed sector may be forced to reduce its prices (or their ‘inertial’ growth rate), and taking into account sectoral inter-dependencies, this will necessarily determine, at least in the short term, an increase in the profit rate in the unexposed sector, even independently of the prevailing market forms in the latter. In Italy, ‘redistribution’ of profits between sectors also seems to have originated from price policies and privatisation in the public utilities. While it is generally thought that these lead to a reduction in prices by increasing productivity in the privatised concerns, It is generally neglected that an opposite effect can derive from the fact that, in privatised firms, there must emerge a remuneration of capital (interest and profit) that previously *could* have been absent. This will be particularly important when the privatised activity requires a high *value of capital per unit of product*. For a *given* real wage and given methods of production, this would mean a reduction of the profit rate in the economy as a whole (Cesaratto, 2003)⁴³ and, hence, a trend towards a harshening of the conflict over distribution.

⁴² Actually, once more with some analogies with Ricardo's analysis, the distributive situation described here could have significant implications for growth, albeit for different reasons (Ricardo's analysis of accumulation depends in an essential way on his acceptance of Say's Law, which is unacceptable today). This is so because of the negative effects on consumer demand due to the fact that real wages are unable to rise in line with productivity, and because, *if* the trend of *ex post* profitability reflects an analogous trend for the rate of profit expected on investments, this being unfavourable *in relative terms* for manufacturing, that would tend to shift investments to more profitable activities, in Italy or abroad.

⁴³ Let us consider, for example, the usual price equations, taking as numeraire the price of industry as = 1. Consider an initial situation in which the services industry is public, with for simplicity $r=0$, and that subsequently it is privatised. With the methods of production unchanged and the real wage given in terms of the product of industry, by comparing the two prices in the equation relative to the service sector, we will have

$$\begin{array}{ll} \text{Public services industry} & \alpha p_s = (w l_s + a_{i_s}) / (1 - a_{s_s}) \\ \text{Private services industry} & \beta p_s = [w l_s + a_{i_s}(1+r)] / [1 - a_{s_s}(1+r)] \end{array}$$

and the increase in price after privatisation (in other words, that $\beta p_s > \alpha p_s$) is evident.

7. APPENDIX 1: FIGURES 1-5 AND TABLES 1-5

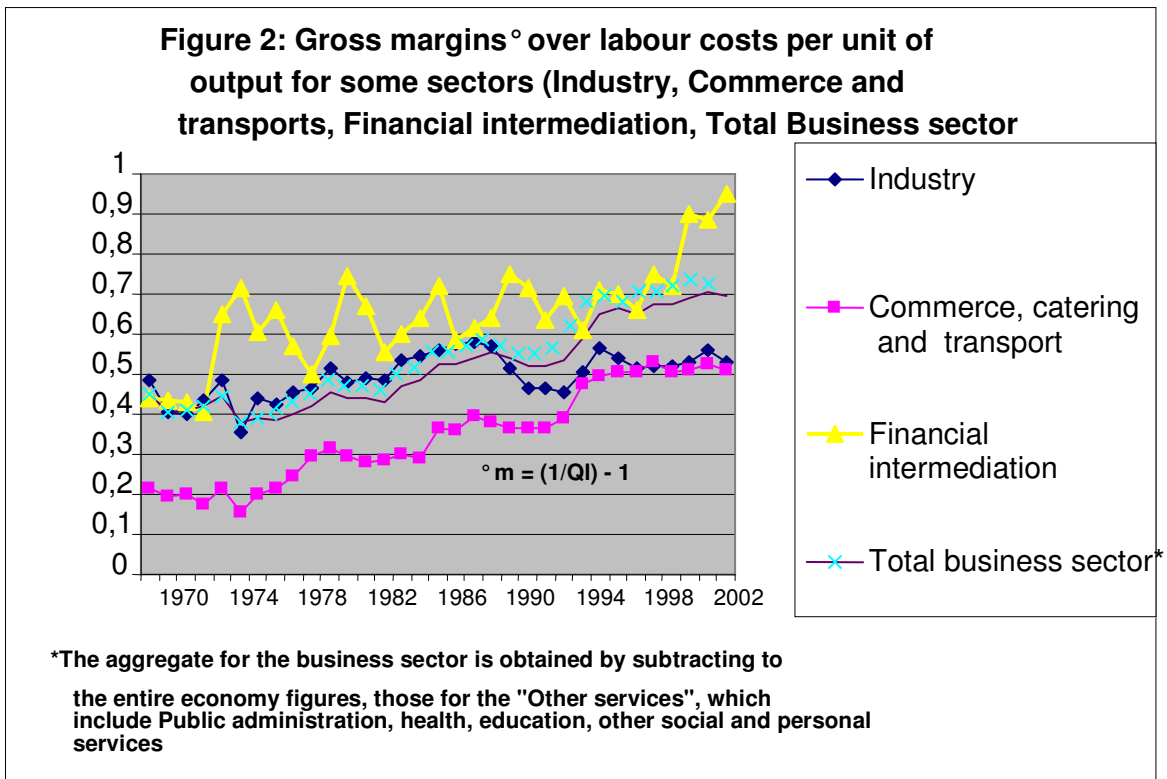
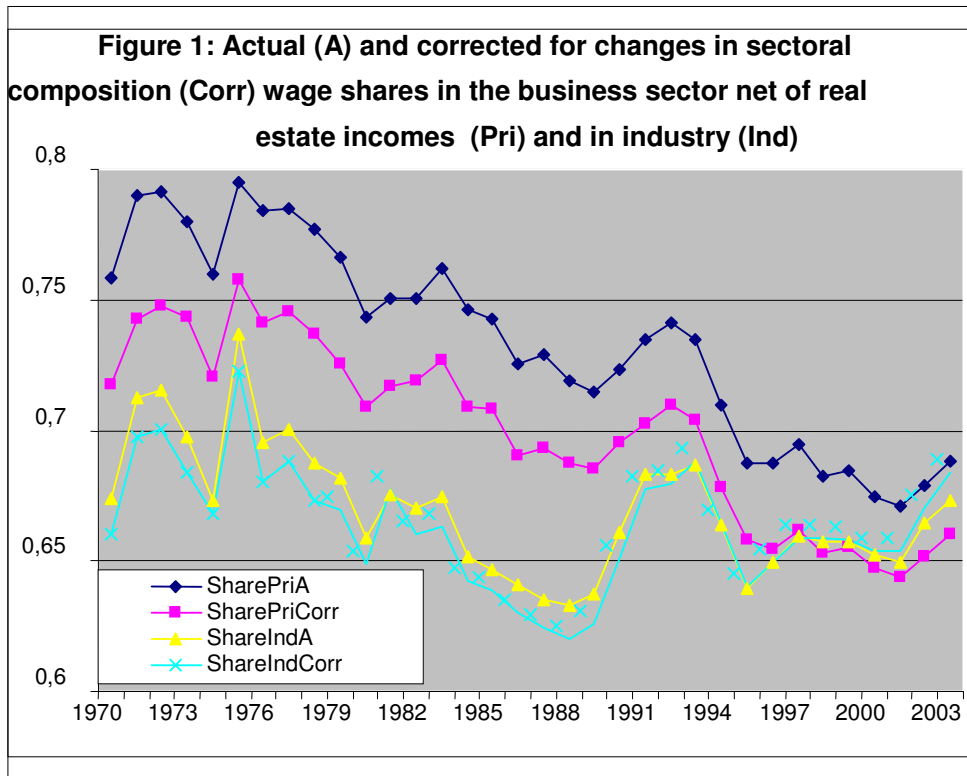


Figure 3: gross *ex post* profit rate over fixed capital for some sectors (Industry, Commerce and Transports, Financial intermediation, Total Business sector)

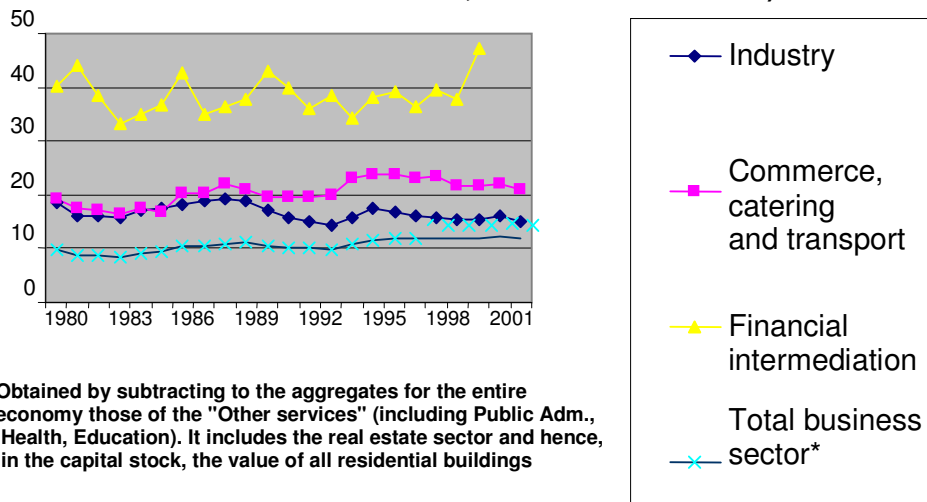
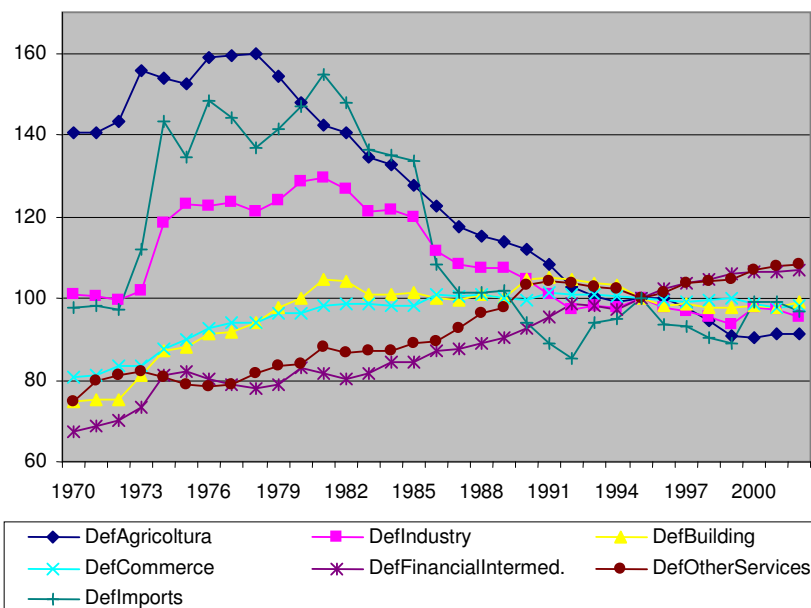


Figure 4: Deflators of imports and major economic sectors (Agriculture, commerce, industry, financial intermediation, building, other services) relative to the cost of living index: 1970-2002



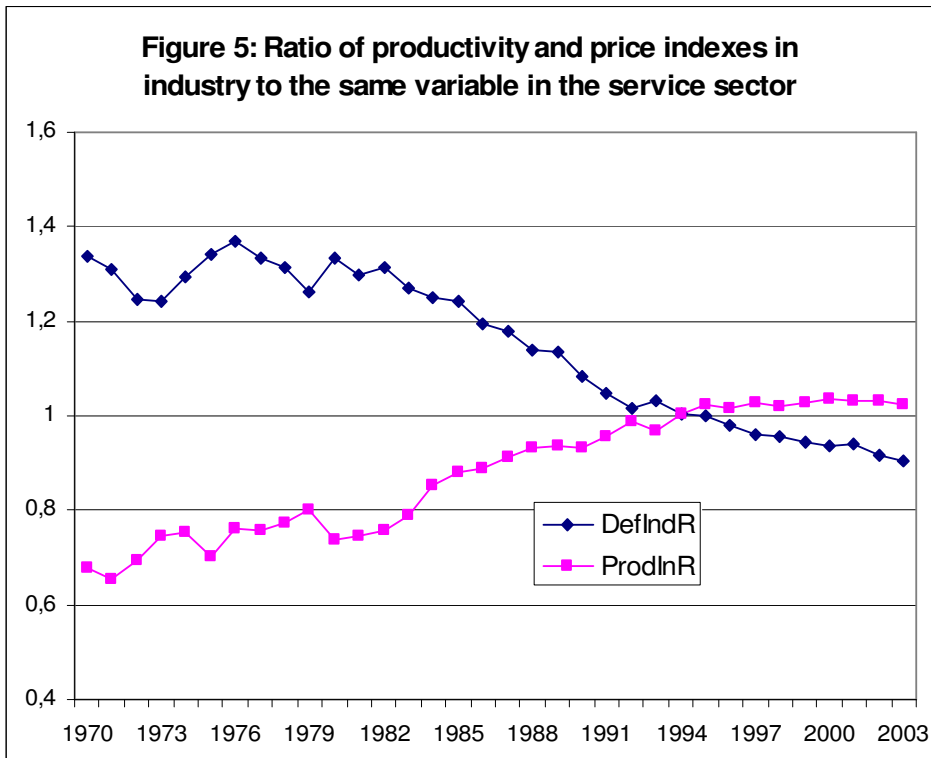


TABLE 1

DE-COMPOSITION OF THE CHANGES IN THE WAGE SHARES IN THE BUSINESS SECTOR AND IN INDUSTRY*

	Sectoral composition effect	Effect of changes in income shares in individual sectors	Change in the share
<i>Business sector</i>			
1970-1982	0,244	1,299	1,543
1982-1992	-0,339	-0,995	-1,334
1992-2002	-0,008	-5,478	-5,486
<i>Industry</i>			
1970-1982	-0,211	0,166	-0,045
1982-1992	-0,816	2,077	1,261
1992-2002	-0,354	-1,263	-1,617

*For both Business sector net of real estate incomes and industry the sub-sectors are those in National accounts (the macro-sectors for the first, the various branches for the second). Starting from the identity: $\Delta[\Sigma w_i q_i] = \Sigma w_{it} q_{it} - \Sigma w_{io} q_{io}$ we apply: $\Delta Q_W = \Delta[\Sigma w_i q_i] = \Sigma \{[(w_{it} + w_{io})/2] \Delta q_i\} + \Sigma \{[(q_{it} + q_{io})/2] \Delta w_i\}$, with w_i e q_i indicating the wage share in industry i and the weight of output of industry i in total value added respectively. Subscripts o and t indicate the initial and final year of the period considered.

SOURCE: ISTAT, NATIONAL ACCOUNTS, 1970-2002.

TABLE 2	CHANGES IN ABSOLUTE TERMS* OF THE PROFIT SHARE AND OF THE EX POST RATE OF PROFIT*					
	Difference Qk	Difference Qk	Difference Qk	R(I) ° 2000	R(II)# 2000	R(III)** 2000
	2002-1970	2002-1980	2000-1980			
Agriculture	12,1	36,6	33,1	3,0	2,7	9,2
Industry	4,2	1,4	1,1	7,4	3,7	15,9
Production and distribution of Energy	29,4	37,3	33,6	5,0	4,3	11,0
Construction	-12,4	-9,3	-8,5	22,1	8,9	33,0
Commerce, Catering, Transport and communication	17,4	11,3	11,0	14,3	9,3	22,7
Commerce	5,9	5,2	5,9	30,9	17,7	38,8
Catering	9,7	7,4	8,4	11,9	6,8	18,1
Transport and communications	29,4	16,8	14,9	6,1	4,5	15,2
Financial intermediation, Real estate property, professional activities	-5,5	2,5	2,8	6,5	6,0	8,7
Financial intermediation	13,7	6,9	4,0	35,5	20,3	39,9
Real Estate, Professional activities	-15,8	-4,7	-2,5	5,8	5,6	8,0
Other Services	10,3	9,9	9,3	11,8	8,9	11,9
Total	8,3	8,1	7,5	6,1	5,1	10,3

* Changes in the shares are absolute variations between their five-year average values at the beginning and end of the period

The values of R are estimated by taking the five year average values of the variables involved in the calculation

° ex post profit rate net of amortization and calculated over fixed capital only: $R(I) = (Qk - AMM/Y) / (Kf/Y)$

ex post profit rate net of amortization over fixed capital and the value of intermediate inputs: $R(II) = (Qk - AMM/Y) / [(Kf + Kc)/Y]$

** ex post profit rate gross of amortization over fixed capital: $R(III) = Qk / (Kf/Y)$

TABLE 3				
DE-COMPOSITION OF THE %CHANGE IN THE WAGE SHARE:				
Var% QI=var% (w/π)+var%(Pw/Pi)+[var%(w/π)*var%(Pw/Pi)]*				
				1982-1970
	var%(w/π)	var% Pw/Pi	Residual**	var % QI
Agriculture	41,0	0,8	0,3	42,2
Industry	17,1	-15,0	-2,6	-0,5
Production and distribution of Energy	43,4	-15,4	-6,7	21,4
Construction	31,3	-14,8	-4,6	11,9
Commerce, Catering, Transport and communication	10,8	-14,3	-1,5	-5,1
Commerce	16,8	-16,9	-2,8	-2,9
Catering	29,2	-16,5	-4,8	8,0
Transport and communications	-6,3	-3,7	0,2	-9,8
Financial intermediation, Real estate property, professional activities	48,1	-15,0	-7,2	25,9
Financial intermediation	39,3	-38,1	-15,0	-13,8
Real Estate, Professional activities	75,6	-2,2	-1,7	71,6
Other Services	36,2	-20,2	-7,3	8,7
Total	18,1	-13,5	-2,4	2,2
Total business sector	14,4	-12,1	-1,7	0,6
%var: value added at market prices /value added at factor costs				
				1992-1982
	var%(w/π)	var% Pw/Pi	Residual**	var % QI
Agriculture	-22,7	25,4	-5,8	-3,1
Industry	-9,0	12,0	-1,1	1,9
Production and distribution of Energy	20,6	-43,9	-9,0	-32,4
Construction	8,2	-3,9	-0,3	4,0
Commerce, Catering, Transport and communication	-5,5	-0,6	0,0	-6,1
Commerce	-1,6	-0,4	0,0	-1,9
Catering	15,8	-21,5	-3,4	-9,1
Transport and communications	-17,0	13,1	-2,2	-6,1
Financial intermediation, Real estate property, professional activities	28,1	-21,3	-6,0	0,9
Financial intermediation	7,9	-5,2	-0,4	2,2
Real Estate, Professional activities	49,0	-28,2	-13,8	7,1
Other Services	23,3	-21,4	-5,0	-3,0
Total	0,9	-4,8	0,0	-3,9
Total business sector	-4,8	-0,4	0,0	-5,2
%var: value added at market prices /value added at factor costs				
				3,0

			2002-1992	
	var%(w/π)	var% Pw/Pi	Residual**	var % QI
(TABLE 3 continued)				
Agriculture	-43,6	15,2	-6,6	-35,0
Industry	-14,3	11,6	-1,7	-4,3
Production and distribution of Energy	-44,6	10,4	-4,6	-38,9
Construction	-3,9	9,6	-0,4	5,4
Commerce, Catering, Transport and communication	-17,4	9,2	-1,6	-9,8
Commerce	-13,2	10,3	-1,4	-4,3
Catering,	8,2	-7,4	-0,6	0,1
Transport and communications	-30,5	15,5	-4,7	-19,7
Financial intermediation, Real estate property, professional activities	1,5	-5,8	-0,1	-4,4
Financial intermediation	-31,6	22,4	-7,1	-16,2
Real Estate, Professional activities	32,4	-13,8	-4,5	14,2
Other Services	-1,6	-0,7	0,0	-2,3
Total	-11,9	4,1	-0,5	-8,2
Total business sector	-14,7	5,3	-0,8	-10,2
%var: value added at market prices /value added at factor costs		5,4		
*Legenda: w=real labour cost in terms of the cost of living index;				
π =Value added at constant prices per standard labour unit;				
Pw=cost of living index;				
Pi= value added deflator				
** "residual" is the third term of the de-composition given by: var%(w/π)*var%(Pw/Pi)				

TABLE 4

CONTRIBUTION OF RELATIVE PRICES, PRODUCTIVITY, LABOUR COSTS AND INTERMEDIATE GOODS PER UNIT OF OUTPUT TO THE CHANGES IN THE WAGE SHARE IN INDUSTRY: 1972-2000*

	Pw/Px	W _r	L/X	Pi/Px	I/X
1972-82	127,12	76,39	128,45	93,22	90,54
1982-92	77,0	79,46	149,45	80,91	63,98
1992-00	100,23	99,06	126,41	93,34	92,23

Legenda:

Pw/Px = Cost of living index on price deflator of gross production in Industry

W_r = Real labour costs in terms of the cost of living index

L/X = Labour measured in standard units per unit of gross production

Pi/Px = Intermediate inputs deflator on the gross production deflator

I/X = Volume of intermediate inputs per unit of gross production in Industry.

* For each period the table shows the value that the wage share would have assumed relatively to the actual share (taken to be 100) in the final year if in the period the indicated variable had remained unchanged while all the other variables followed their actual path. The more the valued so obtained is far from 100, the more the variable indicated has contributed to the actual change in the wage share, positively if the estimated value is less than 100, negatively in the opposite case (for the variable L/X note that, productivity had not increased, the wage share would have been higher, other things equal)

SOURCE: ISTAT, NATIONAL ACCOUNTS, 1970-2002

TABLE 5

RATES OF CHANGE (%) OF INPUT PRICES (Pi), OUTPUT PRICES (Px) AND PRODUCTIVITY (X/L) IN MANUFACTURING INDUSTRY 1977-2002

	1977-80	1981-83	1984-88	1989-90	1992-96	1996-2000	1996-2003
Pi foreign	15,1	12,4	3,6	1,3	6,3	0,7	1,5
Pi domestic	15,0	17,6	4,8	7,7	4,0	1,7	1,8
Pi services	12,2	18,5	6,8	7,4	4,1	1,7	2,0
Px	14,6	13,1	5,2	4,0	4,2	1,1	1,3
X/L	4,8	2,7	5,7	1,8	2,5	1,1	0,8

SOURCES: ISTAT; BARCA & VISCO (1992)

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