LABOUR PRODUCTIVITY AND GROWTH: THE ROLE OF THE BARGAINING MODEL

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Abstract

For many years before the present international crisis, the Italian economy has been having difficulties in growing. A comparative examination of long-term productivity performances, shows that Italy's international position has been undergoing a true downfall, unique among European countries. The paper faces the Italian productivity stagnation problem building on the results of Blanchard-Giavazzi (2003) on the macro interaction between structural reforms in goods and labour markets, and emphasises the shortcomings of a too weak liberalisation of the goods market. Turning to the labour market, the paper discusses in detail the reform of a particular institution, the bargaining model, enacted in Italy through the July 1993 Protocol, by means of a model based on the so-called Bowley law as well as on the work of Tarantelli (1995). The model shows that the new institution is marked by a structural bias in favour of the capital share in income when the economy grows. The bias can be redressed only through a stop or a drop in labour productivity. The data of the 1993-2008 period show how the wage moderation and factor distribution bias of the 1993-2000 period have actually been followed by a long period of productivity stagnation. The stagnation has allowed for the wage share to slowly recover almost all of its 1994 level. A strong long-term relationship between the wage share in income and the ratio of investments to profits shows that, as a result of the "Ricardo effect" (Hayek, 1942; Sylos Labini, 2004), the incentives for engaging into labour productivity growth have failed also for entrepreneurs. The paper then analyses the formal condition for correcting the distribution bias of the bargaining model and discusses it with reference to the reform recently launched in Italy through the Accordo Quadro of 22 January 2009, highlighting the crucial areas for redressing the bargaining model and resuming growth.

JEL codes: J30, J51, J58, O11, O15
Keywords: labour market institutions, central and local bargaining, social pacts, wages (macro), factor income distribution, productivity, growth.

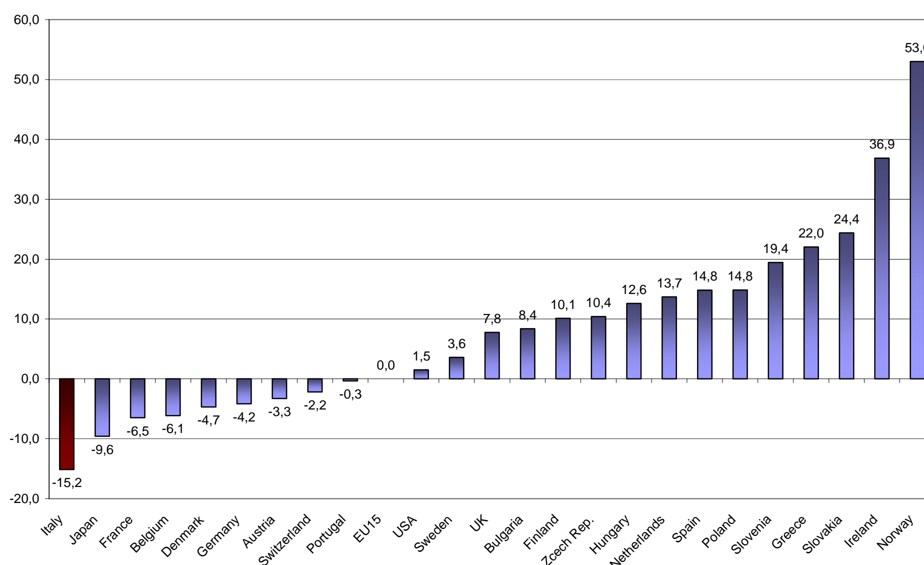
1. The problem: slow growth, productivity, income

For many years before the international financial crisis, the Italian economy has been experiencing difficulties in growing. If we look at GDP trends, after 1995 the Italian economy has registered an annual average growth rate (1.4%) much lower than those of EU15 (2.2 percent), France (2.1%), United Kingdom (2.7%), United States (2.9%), Spain and Greece (3.6 and 3.7% respectively). After 2000, the Italian rate of growth has further slowed down until the negative values of the present crisis. If Italy has grown at the same speed or even faster than some countries (Germany, Switzerland, Japan), this is due to a higher increase in employment.

Over time, persisting differences, albeit small, cause dramatic effects. Italians, who in 1995 enjoyed a per capita income above the European average, higher than the Britons

and close to those of traditionally prosperous countries such as France or Sweden, experienced a sizeable impoverishment over the following decade. In 2007 they were nine points under the European average and 15 points under the United Kingdom (Figure 1). The long-term bad performance of the Italian economy (a downfall in its international position of -15.2 percentage points) appears even more striking when compared to the far lesser reductions of Germany, France and Portugal, as well as to the marked improvements of the United Kingdom, Spain, and Greece.

Figure 1. Relative per-capita GDP – Differences between 2007 and 1995 *(Differences between yearly indices; EU15 average=100)*



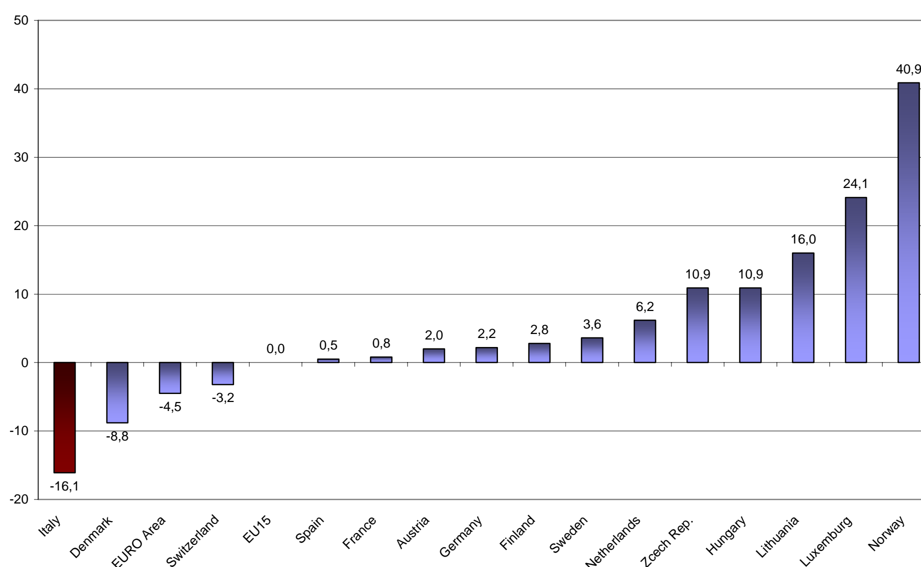
Source: Eurostat.

As in the same period employment has greatly increased (15.6%, i.e. more than three million), the reason behind the relative decline of the Italian economy can only be traced to the low increase in productivity, suggesting the existence of a harsh, undesirable employment-productivity tradeoff. The virtuous circle behind the previous Italian success has been broken. Between the end of World War II and mid-1970s, productivity grew in Italy at a slightly bolder pace than the European average: this allowed the country to slowly but constantly gain some ground, progressively improving living standards up to the levels of the great European countries. However, since then this trend has stopped: after the 1970s Italy has no longer improved its position, and afterwards, since the 1990s, it has suffered a vast as unique downfall with respect to other European economies.

Let us examine the productivity performance. In terms of product per employed person, in 1995 Italians scored more than 14 percentage points above the EU's average. Today, such an advantage has completely vanished. What allows Italy to remain linked to the European average is the length of the working hours which, given the comparatively limited diffusion of part-time jobs, are on average longer (Istat, 2006). In other words, the value of what the work of one Italian produces in a year still results not inferior to the European Union's average only because Italians are employed more than others in full-time jobs.

However, if we consider the evolution of hourly productivity (which obviously, is a better indicator as it measures work's productive power, whatever the duration of the working hours), even this meagre consolation fails. In 1995, the level of average hourly productivity of the Italian economy exceeded by five points the European average; in 2007, after a 16-point drop (figure 2), it did not exceed 89%. The seriousness of the fail down of the Italian economy's international position stands out for its singularity. While Italy worsened, the other big European countries maintained or even improved their relative positions.

Figure 2. Relative GDP per hour worked – Differences between 2007 and 1995 *(Differences between yearly indices; EU15=100)*



Source: Eurostat.

The disappointing performance of Italy is to be understood in the light of the exogenous shocks induced by three major challenges, common to the economies of the euro: i) the spreading of new technologies, ii) the appearance of new, stiff competitors on the global market, iii) the adoption of the euro and the end of the possibility to gain competitiveness through national currency devaluations. All three challenges have required the European economies – and even more the Italian one, linked to the export of traditional goods and historically characterised by high inflation rates – to launch structural reforms, intelligent and timely. But in Italy the reforms were implemented only partially and with great difficulty, especially in terms of consent[1]. The measures on

[1] The difficulty of the required measures should be understood in light of the great transformations that have hit the Italian economy and labour market. The agricultural exodus slowly and progressively ended, and so did the beneficial effects of the structural transformation process deriving from the substitution of low-productivity agricultural jobs with other, more productive jobs in the manufacturing and services industries (Istat, 2008). Another structural change is the so-called "tertiarisation", or absolute and relative increase of employment and value in the service sector (generally characterised by lower or stagnant productivity) to the detriment of the manufacturing sector (with higher and more dynamic productivity). The latter, however, has been often "crowded out" or relocated in other countries with much lower costs (by the so-called deindustrialisation process). In the labour market, the structural transformation of the production system has been interwoven with the sharp increase in the supply of immigrant workers and a

which it has been found an agreement were not deep enough nor coordinated by an economic policy strategy capable of giving way to a new phase of economic development[2]. Why has the Italian economy delayed its adjustment to the new technological, monetary and global challenges more than any other of its European competitors?

This paper faces the question, analysing the relationship between labour market and product market reforms, focusing on the link between functional income distribution and economic growth through a study of the macroeconomic effects of the bargaining model introduced in Italy in 1993 (the so-called Protocol '93). Paragraph 2, building on the results of Blanchard-Giavazzi (2003), highlights the problems of macro interaction between the structural reforms in the product and in the labour markets, emphasising the shortcomings of a too weak liberalisation of the product market, like the Italian one. The next paragraph turns to the labour market, examining in detail the reform of the bargaining model enacted in Italy through the July 1993 Protocol. The operating mechanism of the Protocol is examined by means of a model based on the so-called Bowley law, as well as on the work of Tarantelli (1995). The model clarifies the link between labour productivity and factor income distribution, showing the existence of a structural bias in favour of the capital share in income when the economy grows – a bias that can be redressed only through a stop or a drop in labour productivity. In the fourth paragraph, the model is tested against the data of the 1993-2008 period, showing how the wage moderation and factor distribution bias of 1993-1995 and 1996-2000 have actually been followed by a period of productivity stagnation (2001-2008), that has allowed for the wage share to slowly recover almost all its 1994 level. The following paragraph shows how the incentives for engaging into labour productivity growth have failed also for entrepreneurs, showing a strong long-term relationship between the wage share in income and the ratio of investments to profits. As within the Protocol '93 framework the conveniences of both social partners push the economy into a stagnation path, the paper analyses the formal condition for correcting the distribution bias of that bargaining model. Finally, the concluding paragraph discusses the main results of the paper with reference to the reform recently launched in Italy by the social partners and by the Government (*Accordo Quadro* of January 22, 2009), highlighting the areas of the new pact that shall prove crucial for the redressing of the bargaining model and the resumption of growth.

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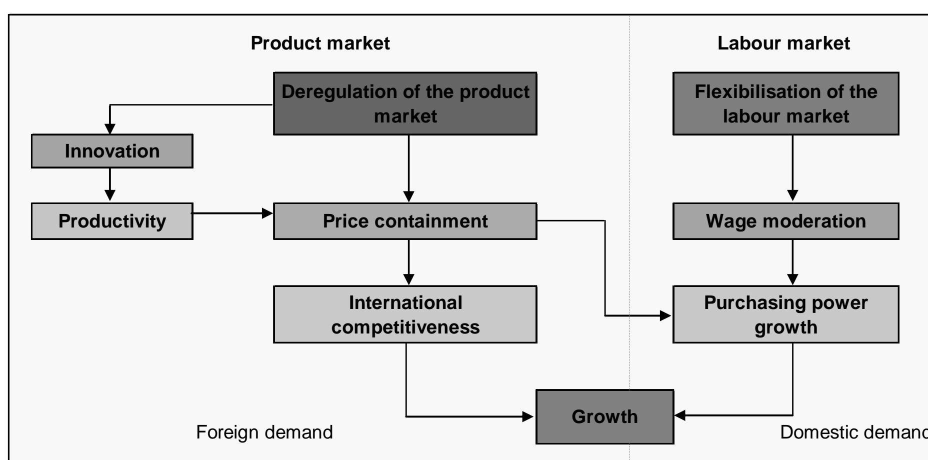
reform of labour employment arrangements that has created many flexible and temporary positions, often in low-skilled occupations, little paid and with low productivity. Flexible or even precarious employment mainly affects the young, with contained wages and often under-valorised human capital (among others, Contini-Trivellato, 2006). Other major changes involve: i) the end of the competitive devaluation era; ii) the continuing heavy burden of public debt inherited from the 80s; iii) the privatisation of state-owned companies and the consequent ending of their previous driving role in strategic investments in technology and innovation; iv) a long season of "bad tycoons" and raiders in the private sector (see, for example, Mucchetti, 2003; Gallino, 2005; Dragoni-Meletti, 2008), more committed to acquiring, breaking up and reselling companies with big capital gains rather than to innovating and re-organising them in order to keep up with the global market.

[2] See, among others, Gallino (2003, 2006), Sylos Labini (2004), Boeri *et al.* (2005), Saltari-Travaglini (2006), Daveri (2006).

2. Interactions between the goods and the labour market reforms

As we have noted, the economies of the euro have to reorganise to face the challenges of new technologies, new global competitors and the single currency, and a common strategy to ensure growth is to make more competitive the product market as well as the labour market, the regulation of money supply being exogenous. A paper by Blanchard-Giavazzi (2003), using a general equilibrium model with two markets, illustrates the sequence of the fundamental elements of this strategy (Figure 3). The model is recalled here for the clarity and simplicity of the logical links that support its operation. The basic idea of Blanchard-Giavazzi is to push the euro economies, through an institutional shock, to find an equilibrium position where markup-generated rents are lower because of a prevailing market regime nearer to perfect competition.

Figure 3. Structural Adjustment: The Blanchard-Giavazzi model *(Product market deregulation, labour market flexibilisation and growth)*



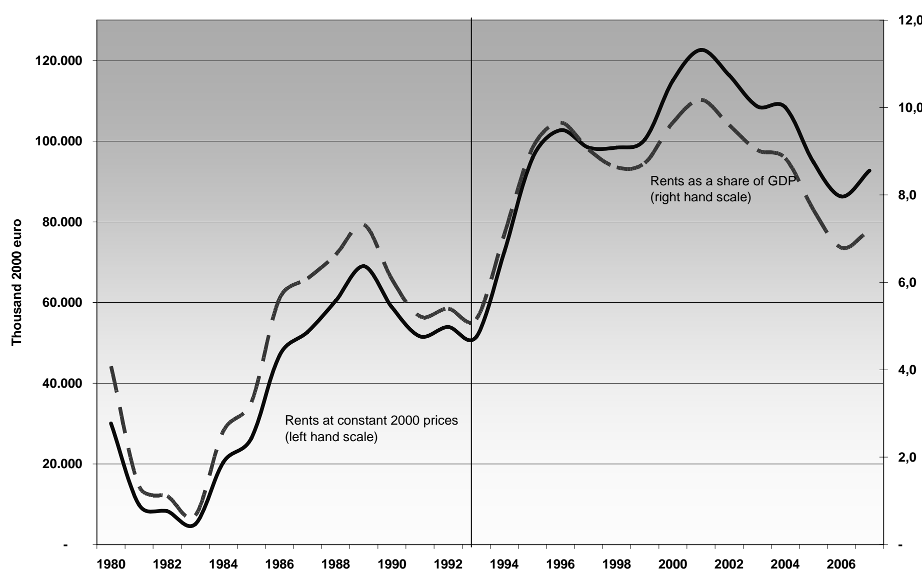
Source: mainly based on Blanchard-Giavazzi, 2003.

First, the liberalization of the product market should increase the competitive pressure on employers so to contain prices, stimulate innovation and foster productivity growth. Price moderation, innovation and productivity, in turn, allow the economy to maintain its competitive position, at least with respect to its close competitors (e.g. the partners in the euro area). In parallel, a reform of the labour market is needed, in order to moderate the growth of wages and labour costs. But moderation should not be driven to the point of becoming counterproductive: the simultaneous pressure on prices must ensure the resilience of the purchasing power of wages and, in this way, the domestic demand. Any regulation asymmetry affects negatively economic growth: if the labour market is too deregulated compared to that of the product, wages lose their purchasing power and domestic consumption stagnates; if it is too deregulated the product market with respect to that of labour, wages are too high, unprofitable firms are encouraged to move elsewhere or go bankrupt, and unemployment grows. Only the development of the purchasing power of wages in parallel with competitive price growth both in the domestic and international markets provides a virtuous balance between the two markets, allowing the economy to grow steadily, driven both by external demand and by domestic demand.

Instead, for a country that, like Italy, has implemented a significant reform of the labour market without having adequately reorganised the product market and, therefore, without adequate competitive pressure on prices and margins, the consequences are economically perverse: on the one hand the decline in the share of labour in income (relative impoverishment of employees and their families), on the other high prices – with the double negative consequence of a loss of international competitiveness (in the presence of significant profits) and a slowdown in consumption. In a context of increased international competition, high prices lead to a brake on the export side of growth, while the slowdown in consumption hampers the growth of the domestic market.

The focus of the Blanchard-Giavazzi model consists in the relationship between price growth and wage growth, which identifies the relationship between the product and the labour markets. For domestic demand, this crucial relationship defines the real wage, while for foreign demand it defines the competitiveness of exports. Therefore, the balance between the product market and the labour market determines the competitiveness of the economy, the level of income and, hence, the conditions for growth.

Figure 4. Markup rents in the Italian economy – 1980-2007 *(Constant 2000 prices and percentage proportion to GDP)*

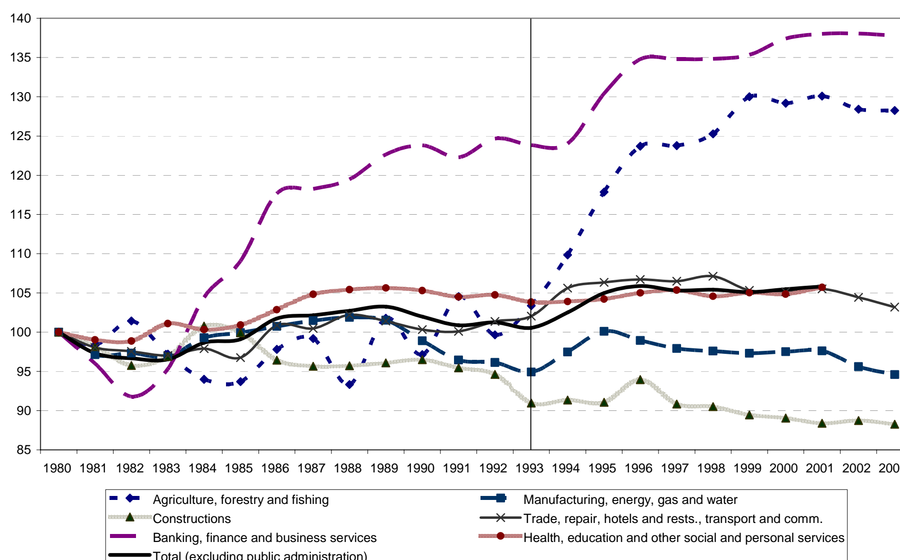


Source: Author's calculation on Istat, National accounts

For the analysis of the Italian case, the most important conclusion that can be drawn from the Blanchard-Giavazzi model is that the long season of state-owned companies' privatisation without liberalisation, started back in the '80s, prevented the formation of the favourable conditions to keep up with the euro, EU enlargement, and the increasing market globalisation. This failure is testified by the accumulation of markup rents in the sheltered sectors, whose value at constant 2000 prices has almost tripled from

approximately 38 billion euro in 1980-1993 to about 100 billion per year between 1993 and 2007[3] (Figure 4).

Figure 5. Markup rents in Italy by economic activity – Years 1980-2003 *(Proportions to sector value added, indices 1980=100; total excluding public administration, defence and social insurance)*

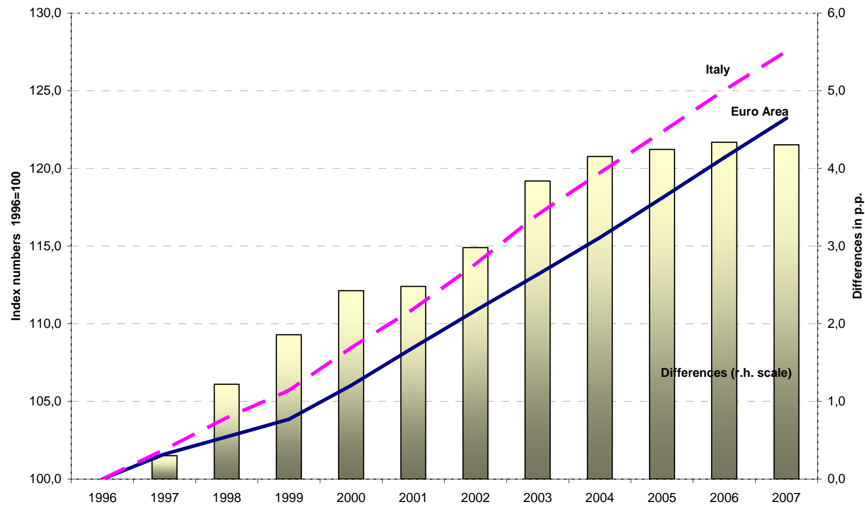


Source: Tronti, 2006.

Rents accumulate in banking, finance and business services, in agriculture where, not surprisingly, the long "employment exodus" started in the '30s is coming to an end, in the production of electricity, gas and water, in social and personal services (Figure 5). Smaller rent increases, yet still superior to the average, are reaped by non-energetic minerals mining and the transportation and communication industries. On the contrary, the profitability of manufacturing, constructions and fishery is falling. The most serious decline affects some of the major manufacturing industries exposed to international competition: energetic-mineral extraction, food, beverages and tobacco, non-metallic mineral goods, electric and electronic equipments.

[3] For the detailed calculation method, based on both the results and the procedure proposed by Griffith-Harisson (2004), see Tronti (2006).

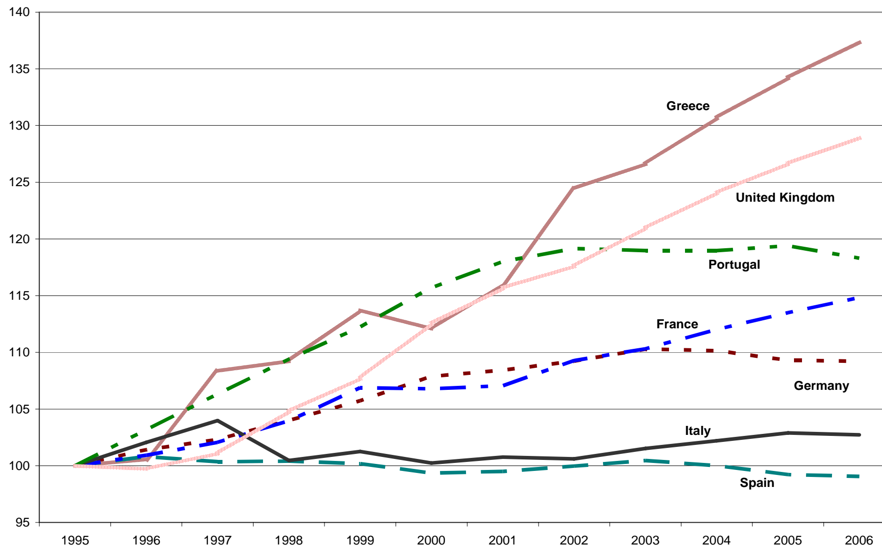
Figure 6. Consumer Prices in Italy And in Euro Area Countries – Years 1996-2007



Source: Eurostat.

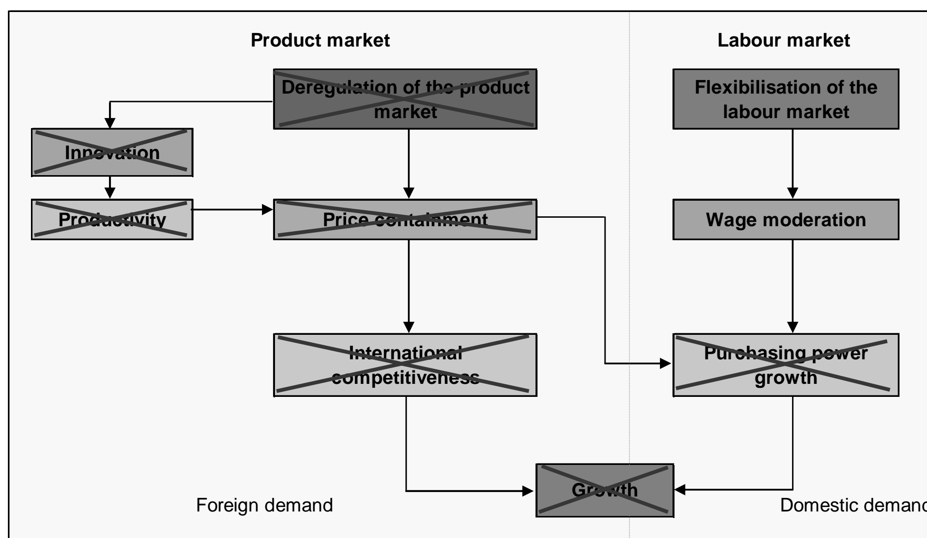
The ineffective Italian privatisation policy of the '90s, further to not keeping the sheltered sectors from taking advantage of their market position and wage moderation at the expense of the economy's competitiveness, actually encouraged them to do so. The newly-privatised companies, in fact, changed their mission from their traditional social role to a private profit-maximising objective function. This process may have contributed to the short-term containment of public deficits to the benefits of the Treasury, owner of the golden share of some of these companies. However, this short-sighted policy certainly did not improve the economic situation and perspectives of any families or any companies engaged in international competition.

Figure 7. Real compensation per employee – Years 1995-2006



Source: Eurostat.

Figure 8. Structural Adjustment: The Blanchard-Giavazzi model *(Flexibilisation of the labour market without previous deregulation of the product market)*



Source: mainly based on Blanchard-Giavazzi, 2003.

So, the enforcement of a strong labour market reform in a macroeconomic setting biased by a poorly competitive product market facilitated that, in the income distribution prisoner's dilemma, prices and margins unload onto wages the burden of competitiveness. This lead to a long period of purchasing power compression, accompanied by a progress of both domestic and export prices higher than those of competitors, with the consequence of a worsening trade balance and of a sluggish economic growth. In a nutshell, as a result, of a stronger inflation (Figure 6) and a wage growth considerably weaker than the average of competitor countries (Figure 7), an uneven relationship between the product and the labour markets induced into the Italian economy a structural bias towards stagnation (Figure 8).

These disappointing performances, however, so far have not impressed the Italian public, as long as the economy, albeit in a context of "zero growth", continued to ensure growing employment (particularly in the more precarious and volatile segments) and resilient business margins as well. This result, seemingly paradoxical, has been possible thanks to the broad redistribution of income from wages to other incomes (compare the figures 4 and 7). However, the apparent state of health of businesses allowed by redistribution was unsustainable even before the international financial crisis. The crisis has therefore hit an economy already severely weakened in comparison with European competitors, further emphasizing the urgency of structural adjustment.

3. The labour market reform: the wage-fixing mechanism and its consequences

3.1. The wage policy proposal of Ezio Tarantelli

Causes and consequences of the macro-economic malfunctioning of the Italian labour market reform are easier to understand if one bears in mind Italy's historical experience in wage trend regulation. To do so, one can assume as starting point the income policy experiments of the 1980s, aimed at taming an inflation rate that had exceeded 20 percentage points a year, through the fixing of an annual inflation target "concerted"

between the Government, the central banker, and social partners. On the consensus target the Government had to regulate controlled and administered prices, the entrepreneurs the market prices of goods and services, the trade unions the evolution of the so-called "sliding scale" (the mechanism that automatically adjusted the wage scales to inflation), and the Bank of Italy the amount of money supply.

These experiments can be synthesised by the main points of Ezio Tarantelli's proposal (Tarantelli, 1995). He was indeed their most active and tenacious advocate, up to the sacrifice of his own life[4].

1. Tarantelli's "concerted" income policy considered price stability as a *public good*, not producible by one single agent but the result of a cooperative behaviour (possibly, explicitly concerted) between the relevant actors of industrial relations (Government and the social partners) and the central banker.
2. Tarantelli's proposal looked at the stability of the labour and capital shares in functional income distribution (the so-called "Bowley law") as the *golden rule* of income policy. This because, other conditions being equal (and in a situation of full employment), it ensures maximum wage growth (and maximum domestic demand growth) compatible with the absence of pressures on the profit rate and domestic prices. As we will see, this hypothesis implies the real wage rate to grow at the same pace of labour productivity; this not so much as an implicit (and unsustainable) moral judgment on the "merit" for productivity gains, but for macroeconomic considerations upon economic growth and equilibrium in consumption.
3. The third aspect, in which Tarantelli gave his most important contribution to the macroeconomic analysis of the dynamic relationships between wages and prices, is the so-called *forward-looking wage policy*. The only way to break the perverse prices-wages-prices spiral is to interrupt the continuing of past inflation into present day (a link then assured in Italy by the "sliding scale" and, in many other advanced countries, by other similar automatic wage-adjustment mechanisms to past inflation). The idea is to plan in advance wage increase targets in line with the expected inflation rate[5], instead of recovering now the purchasing power lost in the past.
4. Finally, the wage trend targeting mechanism proposed by Tarantelli provides for the curbing of inflation by slowing down the sliding scale and lining it with the growth target of the basic wages, this being "concerted" and thus coherent with the behaviours of the other partners of the income policy game (Government, the central banker and entrepreneurs), in a regime of reciprocal surveillance. Concertation is proposed as alternative to the monetarist prescription of a stringent restriction in money supply by the central bank, because it is Pareto preferable: it indeed does not entail the negative social consequences (bankruptcies, unemployment) that usually come with a freezing of economic activity from the side of money supply.

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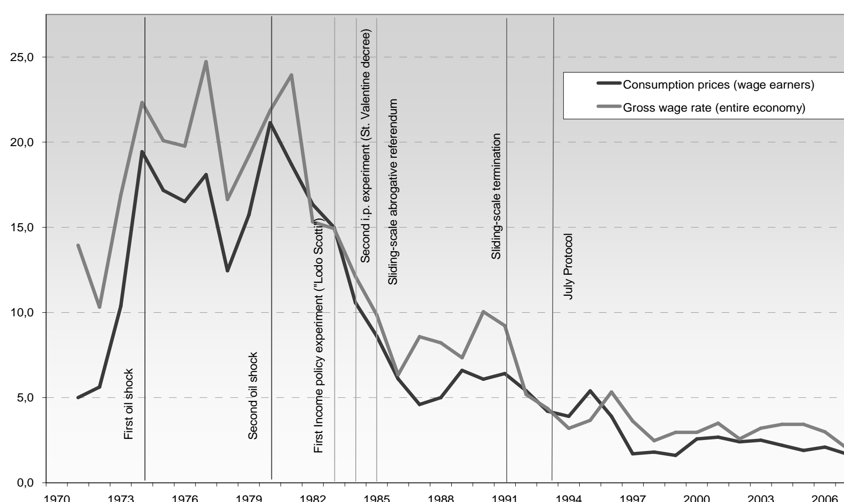
[4] Ezio Tarantelli (1940-1985) was an economist in the Economic Research Department of the Bank of Italy, and later professor of Economics at Rome "La Sapienza" University. Strongly engaged in the struggle against inflation through social pacts, he was killed by the Red Brigades a short time before the referendum by which the popular vote confirmed his policy prescriptions on the curbing of inflation via the control of the cost-of-living allowance (the "sliding scale" or "*scala mobile*"), as implemented by the so called St. Valentine's decree of February 14, 2004.

[5] Guaranteeing to wages, through special safeguarding clauses, the coverage from risk of a difference between expected and actual inflation.

Figure 9. Inflation and wages in Italy: 1982-84 agreements, referendum on the sliding scale and the 1993 July Protocol *(Yearly rates of percentage change)*



Source: Istat, Consumption prices and National Accounts.

Figure 9 presents the parallel trends of inflation and gross wage rate from 1970 to 2007; and shows the different historical phases of the reform of the wage bargaining model[6]. One can see the explosive effects on prices and salaries of the two oil shocks of 1973-74 and 1979-80. These were followed by a cooling down period, in which the concerted income policy experiments played an important role following Tarantelli's initiative in 1983-84 (the "*lodo Scotti*" and then the "*decreto di San Valentino*"), and the subsequent referendum to reintroduce the sliding scale points "frozen" by the St. Valentine decree. Despite strong social tension, the referendum, held briefly after the assassination of Tarantelli, clearly saw the confirmation of the predetermination principle.

In 1986, the sliding scale was partially (and inefficiently) reformed and, in 1991, the industrial employers' organisation (Confindustria) declared terminated the bilateral agreement on the sliding scale. Through the trilateral agreement of July 1992, the scale was definitively abolished in exchange for the Government recognition that safeguarding the wages' purchasing power was a fundamental objective of economic policy. Hence, a new wage bargaining model was launched through the ensuing social pact, ratified by the July 1993 Protocol.

3.2. The mechanism of the July 1993 Protocol and functional income distribution

The Protocol provided for two separate, non-overlapping levels of wage bargaining. The national industry-wide collective bargaining (*first level*), which involved a normative four-year period and two economic two-year periods, must essentially preserve the basic wage purchasing power. Any increase in the national wage minimums, set every two years, must be coherent with the target inflation rate. Should there be a difference between this and actual inflation, it was possible to recover it during the second economic two-year period (safeguarding mechanism). Through four-year agreements, local bargaining (*second level*), either at an enterprise or at a territorial scale, must

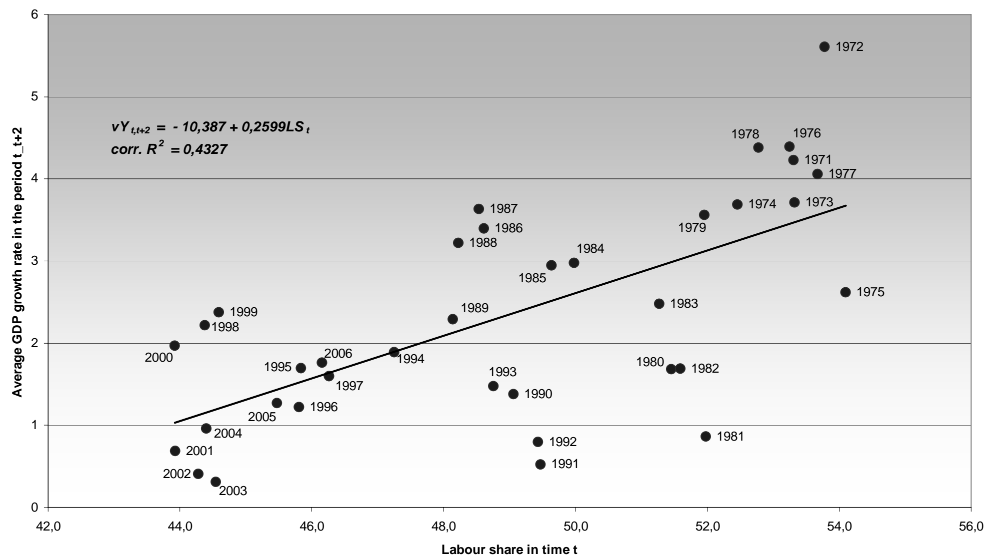
[6] Despite the attempts to apply a forward-looking wage policy, the graph clearly shows, between 1980 and 1996, the presence of shock transmission effects from prices to wages of the subsequent year.

regulate the growth of the wage purchasing power according to the actual results of locally bargained productivity, profitability or quality targets.

The main hypothesis of this paper is that the contractual mechanism of the Protocol makes unlikely the invariance of factor income distribution – which instead was a fundamental pillar in Tarantelli's income policy design (afore-mentioned point 2) – and on the contrary, under normal economic conditions, it favours the automatic increase in the capital share. Such feature of the bargaining model makes weaker or null the need for trade unions and Government to negotiate with employers a counterpart for such income shift, in terms of investments, labour empowerment, workplace re-engineering etc.

Linked to the first is then a second hypothesis. The main objectives of the Protocol drafters were: i) controlling inflation imported through the lira 30% devaluation of 1992-93 (the last competitive devaluation of the Italian currency before being abandoned for the euro); ii) favouring the recovery of employment in the midst of a dramatic employment crisis; iii) favouring economic growth through local bargaining diffusion and wage flexibility, both aimed at spurring productivity growth. Now, if one can easily acknowledge that both inflation has actually been controlled and employment has strongly increased, particularly after the liberalisation of flexible working arrangements (1997 and 2003), one has to admit as well that the third objective has been totally missed. In fact, local wage bargaining has failed to reach a large proportion of workers, wages have only modestly increased their flexible component, and neither productivity nor economic growth have been boosted. Income has shifted from labour to capital but, under the structural conditions of the Italian economy we have discussed in paragraph 2, an increase in the capital share has not involved any acceleration, but rather a slowdown in growth. This stylised fact is intuitively confirmed by the evidence shown in figure 10.

Figure 10. Italy. Relationship between level of the labour share in income in year t and the average GDP growth in the three-year period t-t+2 – Years 1971-2006
(Annual average growth rates and percentage points; raw labour share)



Source: Istat, National Accounts.

The figure indeed shows a statistically important positive long-term relationship – whose entity is well above expectations – between the level of the labour share in income in year *t* and the average growth rate in the three-year period *t_t+2*. Based on this relationship, the share of labour in income should grow more than six percentage points to bring the yearly growth of the Italian economy to a 3 percent rate.

In order to provide a theoretical explanation of these hypotheses, it is useful to analyse in detail the mechanism laid down in Protocol '93 by means of a formal model.

With w being the wage rate, N_D dependent employment, Q total real income and p prices, the labour share in income (S_L), can be defined as follows:

$$S_L = w \cdot N_D \cdot Q^{-1} \cdot p^{-1}, \qquad (1)$$

From (1), by multiplying and dividing per total employment N_T, and substituting the labour productivity π to income per employed person, we obtain:

$$S_L = w \cdot n_D \cdot \pi^{-1} \cdot p^{-1}, \qquad (1.1)$$

Where n_D indicates the proportion of dependent employment in total employment.

Formula (1.1) allows easily to obtain the known wage growth condition that assures the invariance of the labour share:

$$\dot{S}_L \approx 0 \Leftrightarrow \dot{w} \approx \dot{p} + \dot{\pi} - \dot{n}_D. \qquad (2)$$

Formula (2)[7], where the superscript dots indicate changes in the discrete, clarifies that the Bowley law holds only when the wage rate growth equals the sum of the changes in prices and labour productivity, net of the change in the share of wage earners in total employment. In the Protocol '93 design, however, the wage rate can comply to the Bowley law only in case the second-level wage growth meets some rather strict constraints. Let us see why.

With w_1 being the first level wage rate and w_2 the second level wage rate, the total wage rate growth will be:

$$\dot{w} = \alpha \dot{w}_1 + (1-\alpha)\dot{w}_2 \qquad \text{with} \quad \alpha \in [0,1], \qquad (3)$$

where α is the incidence of first level wage on total wage.

Under the hypothesis that this wage component moves strictly with inflation ($\dot{p}$), per effect of the target inflation rate and the periodical recoveries of the gaps between this and actual inflation, we can obtain the growth of w_2 that meets the invariance of functional income distribution ($\dot{w}_2^*$):

[7] The right side of the wage growth equation does not report the interaction term of the three variables, of a generally negligible entity.

$$\dot{S}_L = 0 \Leftrightarrow \dot{w}_1 = \dot{p} \text{ and } \dot{w}_2^* = \frac{\dot{w} - \alpha\dot{w}_1}{1-\alpha} \approx \dot{p} + \beta^*\dot{\pi} \qquad \text{with } \beta^* = \frac{1}{1-\alpha} > 1 . \qquad (4)$$

Equation (4)[8] indicates that the local wage rate must keep up with inflation and increase its own purchasing power according to the growth rate of labour productivity multiplied by the factor β^*. This factor is higher than one, and the lower the incidence of second-level wage, the greater it will be. In the Italian economy, the difference between total wage and first-level wage leads us to estimate that β^* has a high average value, close to 7 – a high value due to the poor diffusion and relative weakness of second-level bargaining.

Hence, as Protocol '93 establishes that the basic wages set by national industry-wide collective agreements are to remain forever anchored to their 1993 purchasing power, should the economy maintain unchanged the factor income distribution, local bargaining must play a quite important economic role. According to (4), this role includes maintaining the second-level wage purchasing power and regulating the growth of the entire real wages (first- and second-level) as to equalise the growth of labour productivity. In order to grant that the whole real wage adjusts to productivity gains, the second-level wage should grow considerably faster than productivity itself (about 7 times faster), and maintain its purchasing power even when labour productivity be stagnant.

Moreover, another consequence of the model, should it grant the distribution invariance, would be that the proportion of the local and flexible component on total wage must basically grow over time, until becoming the main wage item. The only situation in which this could be reduced is, in fact, when labour productivity drops: $\dot{\pi} < 0 \Leftrightarrow \dot{w}_2^* < \dot{p} \Leftrightarrow \dot{w}_2^* < \dot{w}_1^* = \dot{p}$.

In sum, the formal analysis of the Protocol '93 bargaining model shows that the design of making wages more flexible and building a stronger tie between wages and productivity growth at the local level rests on the preservation of functional income distribution. In other terms, Protocol '93 could have obtained its third goal only by assuring the stability of the distributive shares through a dramatic increase in local bargaining. Unfortunately, as the Protocol does not establish that the second-level wage must cover all workers, neither that it must be protected from inflation, nor that it must grow up to ensuring that real wages equal the labour productivity growth rate, it is immediately apparent that that condition is not very probable[9]. As a matter of fact, after 15 years of application, second-level wage bargaining still covers less than 30 per cent of wage workers[10].

[8] The formula does not consider the variance of the dependent employment incidence on the total, which in the short run can be assumed as constant.

[9] As it's widely known, the Italian economic system is characterised by a large number of small and very small enterprises, difficult to cover with collective local wage agreements. Medium-sized and large enterprises too present considerable differences in terms of unionisation and presence of local bargaining per industry and territory.

[10] If we want to get an idea on how far could local bargaining go even in the most favourable conditions, we have to acknowledge that in the Anglo-Saxon countries, where the local one is the prevalent or even the unique bargaining level, the proportion of workers covered by collective bargaining never exceeds 45 per cent.

So, in order to analyse the actual relationships between the labour productivity trend and functional income distribution according to Protocol '93, we can introduce the parameter γ, that synthesises both the coverage of local wage bargaining, and the extent to which it contracts a wage growth close to the level that assures invariance of the factor income distribution:

$$\gamma = \frac{\beta}{\beta^{*}}. \tag{5}$$

The parameter γ reaches the unit when all employees have a second-level contract and the wage increases fixed by the local agreements satisfy the invariance according to equation (4).

Based on the growth of labour productivity and on the value of γ, we can thus obtain how the mechanism designed by Protocol '93 and its concrete application combine in determining the movements of functional income distribution:

$$\begin{cases} \dot{\pi} > 0 & \begin{cases} \text{and} \quad \gamma < 1 & \Rightarrow \dot{S}_L < 0 \\ \text{and} \quad \gamma = 1 & \Rightarrow \dot{S}_L = 0 \end{cases} \\ \dot{\pi} \approx 0 & \text{and} \quad \gamma > 1 \qquad \Rightarrow \dot{S}_L > 0 \end{cases} \tag{6}$$

The content of the relations indicated by (6) is synthesised in Table 1. Under normal functioning of the economy, labour productivity follows a positive trend. However, the structurally insufficient coverage of local wage bargaining makes the invariance of factor distribution unlikely, and the share of capital gets increased. The only situation in which relative factor shares could remain constant is when labour productivity grows and, at the same time, parameter γ equals 1: a not very probable situation.

Table 1 – How Protocol '93 works: Combined effect of the two bargaining levels on the share of labour in income

Possible cases	National bargaining (1st level)	Labour productivity	Local bargaining (2nd level)	Share of labour in the income
Case 1: Normal	Maintains the purchasing power of basic wages	Grows	Not available to all workers and/or does not ensure growth in the real wages in line with productivity gains	⇒ Reduces
Case 2: Not very probable	Maintains the purchasing power of basic wages	Grows	Available to all workers and ensures growth in the real wages in line with productivity gains	⇒ Remains stable
Case 3: Unlikely	Maintains the purchasing power of basic wages	Stops or decreases	Stops or distributes to wages increases higher than productivity gains	⇒ Grows

However, the real economically perverse result is that the bargaining model can re-balance the bias in favour of capital only when labour productivity stops or drops. In particular, the cases in which the labour share will rise are three: a) when productivity growth is slightly positive and $\gamma > 1$; b) when productivity growth is null and $\dot{w}_2 > \dot{p}$; and, c), when productivity shrinks and β is negative, so that its product with $\dot{\pi}$ is positive, and again $\dot{w}_2 > \dot{p}$.

To sum up, under normal functioning of the economy, the Protocol tends to reduce the labour share. At the same time, however, it may grant the re-establishment of factor share relativities to a serious economic malfunctioning: a stop or a drop in labour productivity – something that, in the 23 years between 1970 and 1993, occurred only thrice[11]. The formal analysis of Protocol '93 indicates therefore we are in front of a game in which the income distribution conflict between the two social partners transfers itself to productivity growth. It may be not a zero-sum game, but it surely is one that should push the economy to stagnation. Let us now see if empirical evidence confirms these analytical results.

4. Productivity, local bargaining, and the labour share according to Protocol '93

If we look at real world data for the period of application of the Protocol (1993-2008), we can divide it into three sub-periods, based on labour productivity cycles. The first phase (1993-1995) includes the launching of the new wage-fixing model and its first application. In connection with the most serious employment crisis after World War II, labour productivity increases by 2.9% per year (Table 2).

Table 2. Labour productivity, nominal and real wages, and functional income distribution. Total economy – Selected sub-periods in 1993-2008 *(Average sub-period percentage rates of change; absolute coefficient values)*

Periods	1993-1995	1996-2000	2001-2008	1993-2008
Employment	-1.4	0.8	0.8	0.4
Labour productivity	2.9	1.0	0.1	0.9
Basic nominal wage (*1st level*)	2.6	2.9	2.9	2.8
Local nominal wage (*2nd level*)	15.3	7.8	4.6	7.5
Total nominal wage	3.7	3.5	3.1	3.3
Output prices	3.9	2.7	2.7	2.9
Real total wages *(output prices)*	-0.1	0.8	0.4	0.4
Wages' income share	-2.9	-0.1	0.8	-0.2
Wage earners' proportion in total employment	0.1	0.1	0.4	0.3
Output growth	1.5	1.8	0.9	1.3
α	*0.90*	*0.88*	*0.85*	*0.87*
β	*3.76*	*5.10*	*19.87*	*5.04*
γ	*0.38*	*0.60*	*2.94*	*0.65*

Source: Istat (Contractual wages, National accounts, Consumption prices).

[11] In 1975 (-1.3%), in 1982 (-0.3%) and in 1992 (-0.1%).

From the point of view of wage bargaining, the sub-period is characterised by collective agreements being suspended in public administration. National basic wages stay behind inflation and the γ coefficient has an average value of 0.38, so that the wages' income share falls by 2.9% per year. Notwithstanding the consistent employment loss, output growth is pushed by labour productivity to reach an average yearly rate of 1.5%. This sub-period can be looked at as an example of the first case in Table 1, when productivity grows and functional distribution is subject to a relevant shift in favour of capital.

The second phase (1996-2000) sees the full implementation of the Protocol and a certain development of local collective wage agreements. The coefficient α, that indicates the share of first-level wages in total wages, gets reduced from 90 to 88%. Labour is cheaper and employment returns to grow at a yearly rate of 0.8%, while labour productivity slows down to 1% per year. New wage agreements are made in the public sector and, in the attempt to recoup the purchasing power previously lost, first-level wages pass over the inflation rate by 0.2 percentage points per year. Total wages now increase their purchasing power, but still grow slower than what needed to ensure the stability of income factor distribution, so that the wages' share continues to reduce, even if by a much slower pace (-0.1% per year). Output growth accelerates to 1.8% per year, benefiting from both employment and productivity gains. This sub-period is the closest to the second case of Table 1, as the average value of γ (0.6) is nearer to 1 than in any other sub-period.

The last, longer phase (2001-2008) is marked by the stagnation of labour productivity (only 0.1% per year); and the average value hides three actual falls of labour productivity in 2002 (-0.7%), 2003 (-0.9%), and 2008 (-0.8%). The Government withers the role of the programmed inflation rate as an economic policy target common to all the actors of the industrial relations' system, and transforms it into a ceiling imposed upon wages' growth. However, in the face of an inflation rate in line with the previous sub-period, first-level wages discard the too low target inflation rate, and again pass over this and the actual inflation rate as well. Despite this, the first-level share in total wages (α) goes on declining (from 88 to 85%) as second-level bargaining, regardless the productivity stagnation, attributes to wages almost 0.7 points per year more than what required to keep factor distribution unchanged. This result is allowed for by the Government progressively reducing the tax wedge on wages: wage increases are offset by cuts in non-wage labour costs. The productivity halt pushes up the β multiplier to 19.87, and γ jumps up to a figure just below 3. Consequently, the wages' share in income recovers a relevant part of the ground lost in the preceding phases, increasing by 0.8% per year up to a 2008 level just slightly lower than the 1994 one. Labour, however, is still cheap enough for employers to persist in expanding the workforce, and the GDP weak growth is mainly driven by employment. We are, therefore, in the situation depicted by case 3 in Table 1: the labour productivity stagnation, combined with the downward rigidity of real basic wages and a resilience of local wages, causes the rebalancing of factor income distribution.

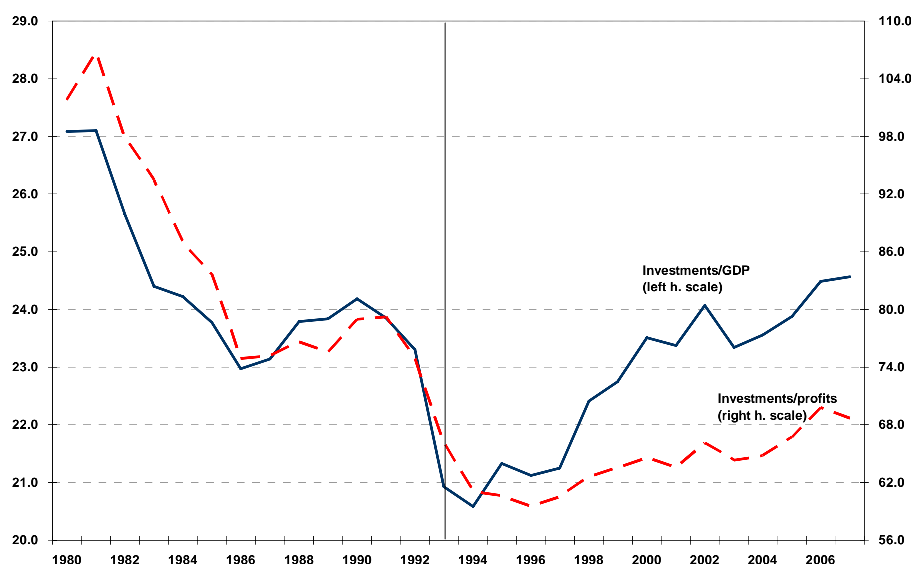
In the end, the results of a 15 years application support the conclusion that, despite its merits in the areas of curbing inflation and expanding employment, as the Protocol is not an adequate tool to keep functional income distribution unchanged under normal economic conditions, it has failed to obtain its other non-minor objectives. It has neither helped much local bargaining diffusion nor wage flexibility and, more than anything, it

has not spurred productivity and growth but, on the contrary, in the asymmetric imbalance between the product and the labour market reforms, it has hampered it, pushing the economy into a stagnation path.

5. The effects of the income shift on investment and growth

The analysis of the functioning of Protocol ‘93 and of its effects on income distribution confirms the situation described in paragraph 2. Italy is affected by a structural imbalance between the product and the labour markets: the reform of the latter brought about by Protocol ’93 (together with the diffusion of flexible work arrangements among the new labour market entrants and with the abatement of the tax wedge on wages) has effectively moderated wage growth; but it has not been accompanied by a parallel reform of the product market, so to put prices and margins under competitive pressure. The result has been an unequal functional income distribution, also helped by relatively high prices, and even if this situation has allowed for increasing employment and profits, after a few years it has resulted in productivity stagnation and sluggish growth – a situation that allows for the recovery of the wages’ share in income.

Figure 11. Gross fixed investments. Relevant ratios – 1980-2007 *(Percentage points)*



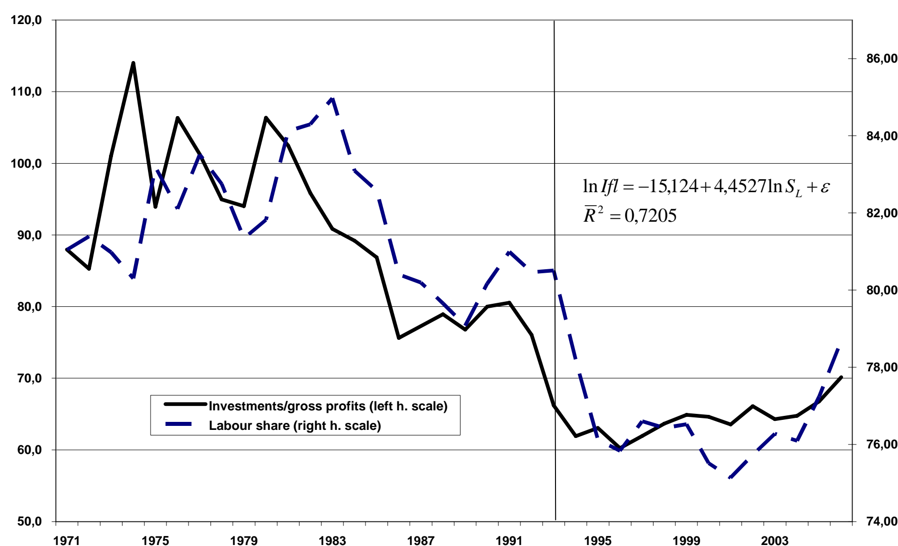
Source: Istat, National accounts.

In order to get a deeper understanding of this picture, we can see what has happened to the economic incentives that compensate employers for productivity growth. A look at the employer’s side of the productivity story shows the dramatic changes in business conveniences. Higher profitability after 1993 has not implied a proportional increase in investments: after the fall from 31 to about 21 per cent of GDP between the ‘80s and the first years of the ’90s, investments recovered from 1995 onward, and passed 24 per cent in 2006 (Figure 11). This recovery, however, is quite weak in respect of employers’ economic possibilities: if in 1991 investments amounted to 81 per cent of gross profits, in 2007, regardless capital market developments, privatisations, collective bargaining and labour market reforms, they were still at 69 per cent, a level 11 points lower.

The reason for this change is simply that the price of labour relative to investments decreased so much that entrepreneurs, following to the so-called "Ricardo effect" (Hayek, 1942; Sylos Labini, 1984, 2004), preferred to employ more people than modernise their technical equipments and organisations. The Italian economy data support the Ricardo effect by indicating the presence of a long-term, strong positive relationship between the labour share and the ratio of investment to profits (Figure 12). A diminution in the labour share in income leads to an increase in the profit rate and to a parallel fall in the ratio of investments to profits. This very general relationship may have been strengthened by the liberalisation of capital movements throughout the global market.

As an effect of Protocol '93 and the imbalance between the product and the labour market reforms, domestic investments were not only inferior to potential, but they were more 'expansionary', creating more jobs and less productivity than in the '80s. Employers were busy increasing employment through the new flexible working arrangements, and to engage also on the productivity front was less necessary, as interesting returns were available even to low-productivity activities.

Figure 12 – Relationship between the labour share and the ratio of investments to profits. Italy 1971-2006 *(Percentage values)*



Source: Istat, National accounts.

So, it is not surprising that the economy gradually slowed down and then stopped altogether. The productivity gains that generate economic growth are due to expensive and challenging technological and organisational innovations, carried out at the workplace level. However, neither employees nor employers were sufficiently rewarded for committing to making them. The incentive system built by Protocol '93 and its imbalance with the product market regulation is economically perverse as it discourages growth, and it must be corrected in order to help productivity and economy to grow again. One way of doing this is to acknowledge that both social partners should be rewarded for increasing productivity, and this can be obtained only if the income distribution to factors is relatively stable. Once this standpoint is accepted, the second

step is to recognise that local wage bargaining will never cover all wage workers, and, consequently, national bargaining cannot leave totally to it the task of increasing the wages' purchasing power.

In order to see how national wages should reinforce local wages in ensuring the growth of purchasing power, we can go back to our model of Protocol '93 and start from a very general real wage growth definition[12]:

$$\dot{w}-\dot{p}=\alpha(\dot{w}_1-\dot{p})+(1-\alpha)(\dot{w}_2-\dot{p}) \quad (7)$$

As real second-level wage will vary in some proportion to the rate of productivity growth, according to the diffusion and intensity of local wage bargaining ($\dot{w}_2-\dot{p}=\beta\dot{\pi}$), the growth of total real wage will be:

$$\dot{w}-\dot{p}=\alpha(\dot{w}_1-\dot{p})+(1-\alpha)\beta\dot{\pi} \quad (8)$$

By substituting (8) in (2) expressed in real terms, and keeping the labour share constant, we have:

$$\alpha(\dot{w}_1-\dot{p})+(1-\alpha)\beta\dot{\pi}=\dot{\pi}-\dot{n}_D \quad (9)$$

So that we can solve equation (9) for the growth of first-level wage that keeps the labour share unchanged ($\dot{w}_1^*$):

$$\dot{w}_1^*=\dot{p}+\delta\dot{\pi}-\frac{1}{\alpha}\dot{n}_D, \qquad \text{where} \quad \delta=\frac{1+(\alpha-1)\beta}{\alpha} \quad \text{and} \quad \delta\leq 1 \quad (10)$$

Equation (10) shows that, in order to preserve the income distribution to factors, first-level wage should grow not only with prices, but also with respect to productivity. The coefficient δ, that links national wages to productivity, is equal to 1 only when first-level wages coincide with total wages, and varies inversely with how much productivity is paid at the second level (β), and directly with the first-level share in total wage (α). According to the data presented in Table 2 above, the average value of δ for the period 1993-2008 is 0.4. Furthermore, as in (10) the change of the share of wage labour in total employment ($\dot{n}_D$) is divided by α, and this is less than 1, the value of this change is no more negligible and should be considered when negotiating national wages.

To sum up these results, the Italian bargaining model introduced by Protocol '93 has reduced for both social partners the incentives to engage in increasing productivity, and should therefore be corrected by allowing factor shares to remain fairly constant over time. In order to obtain this result, also first-level, national wages should reward productivity gains. The coefficient linking first-level wages to productivity growth should be less than 1, and vary inversely to the value of the productivity multiplier of second-level wages.

[12] I have developed the following result in collaboration with Giuseppe Ciccarone of Rome "La Sapienza" University, who was looking too for the best way to link first-level wages to productivity growth.

6. Conclusions: Completing the structural adjustment and correcting the bargaining model

The Italian economy is still in the middle of a structural adjustment ford. From 1995 to 2008 employment has grown by more than 3 million (almost 16 per cent), and the workforce has progressively included segments of female, elderly, young and migrant labour excluded before. This significant enlargement, mainly concentrated in the market-oriented services, has been paralleled by a sharp international repositioning in the area of productivity, income and growth – a signal of unsolved structural problems. Such a harsh employment-productivity tradeoff did not confront any other European economy of similar employment growth. Why?

In order to face the challenges posed by new technologies, new global competitors and the unique European currency, Italy has launched reforms to privatise state-owned companies and to introduce as well a new wage bargaining model and new flexible labour contracts. The product market reform, however, has been incomplete, as privatisations have not been followed by effective liberalisation measures, so that the wage moderation actually obtained by labour market reforms has had counterproductive effects on a poorly competitive product market. Italy has been characterised for many years (and still is) by wages lower and prices higher than its competitors; and this situation has progressively led to economic stagnation. Wage moderation not accompanied by low prices has neither ensured the maintenance of domestic demand, nor the international competitiveness of Italian products. Privatisations without the necessary measures to spur business competitiveness, combining with a deep reform of the labour market, have allowed for a constant, long-term growth of employment and for an anyhow high level of business profitability and mark-up rents, at the cost, however, of low growth and heavy losses in the export markets' share. Increased mark-up rents have lowered economic growth and with it the Italian income international position, in a near to zero-sum, redistributive game.

In the long run, however, the downward rigidity of real wages, assured by the bargaining model of Protocol '93 even in the presence of null or negative productivity growth, has slowly but constantly restored the labour share in income, bringing it back almost to its 1994 level. And the international financial crisis has lately broken the high employment-high profits spell, inducing considerable employment losses and business shutdowns. Now employers acknowledge they have to reorganise, and now is the moment for Italy to launch an effective reform of the product market and, then, to correct the wage bargaining model, otherwise it will come out of the crisis in an even worse structural condition than it was when it entered it.

On the bargaining model side, as a matter of fact, at the beginning of 2009 the social partners and the Government have underwritten a new reform. The new pact (*Accordo quadro sulla riforma degli assetti negoziali*, January 22, 2009) recognises the fact that social partners have *de facto* broken the inflation target discipline of Protocol '93, and therefore abandons the programmed inflation rate as reference indicator for national, first-level wage bargaining. In its role the new pact introduces a simple forecast of the European harmonised index of consumer prices (HICP), net of imported energy products, with a safeguarding rule for forecasting errors, that may adjust national minimums every three years. National, first-level collective agreements are to last three

instead of two years, thereby reducing the bargaining burden. New rules are devoted and strong emphasis is put on the need to develop the second bargaining level, even if in this area the target cannot be very ambitious, and the economic incentives are rather weak. Finally, a new wage item is introduced (*Elemento Economico di Garanzia*, or Guarantee Economic Element), whose amount is to be determined by national collective agreements, to cover with additional income workers that have no access to second-level bargaining and do not receive any economic benefit further to first-level wage.

The paper shows that this last could be the key measure to restore for both social partners the convenience to engage in fostering productivity, provided the benefit is linked to productivity growth, is directly proportional to the first-level share in total wage, inversely proportional to the productivity multiplier of second-level wages, and corrected according to the movements of wage earners' share in total employment. As the pact is totally vague on its amount and on the way to calculate it, the actual role of this benefit – that should anyhow exert its beneficial influence only over the medium run – will depend entirely on the decisions of first-level negotiators. It is however easy to see that this "guarantee wage" is the only substantial novelty with respect to Protocol '93, in that it can give to social partners the possibility to actually negotiate the movements of factor income distribution.

A more general result of the paper is that it shows how "institutions matter" for the economic performance and, in particular, how relevant is the role of labour market institutions in shaping the growth path of the economy. The resumption of a good growth record requires anyhow Italy to face the problem of structural adjustment in the institutions regulating the product market, and this can be eased, not substituted by a good bargaining model reform.

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