

The influence of unemployment, productivity and institutions on real wage trends: the case of Italy 1970-2000*

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5.1 Introduction

The aim of this paper is to describe and attempt to interpret the trends of wages in Italy in the period 1970-2000. While it is an applied work, it may be useful to provide at the beginning a brief clarification of the broader framework implicit in the analysis. On consideration of the analytical faults found in neoclassical substitution mechanisms as a foundation for decreasing factor demand schedules, we do not approach the explanation of wages by assuming that the economic forces underlying their determination can be described by the interaction between labour demand and supply functions. More generally, we envisage no tendency of the economy towards full employment or NAIRU (Non Accelerating Inflation Rate of Unemployment) equilibria, such as is still assumed in the models that replace the traditional labour demand and supply curves with ‘pseudo-curves’ based respectively on firm pricing

rules and models of wage determination.¹ In line with the classical approach and its modern revival, we instead expect wage trends to be affected by a set of historical and current circumstances that can be broadly classified as labour market conditions, the degree of organisation of the parties involved, and broader economic and political/institutional factors. All these circumstances affect wage determination through the same channel, that is their influence on the ability of the parties involved to establish favourable conditions for themselves in the distribution of income (Stirati 1992, Levrero 2005). There is thus no a priori hierarchy in their respective role, although empirical and historical analysis may obviously show that in specific contexts certain factors have been more important than others, and can also indicate their reciprocal influences.²

An emphasis on the role of those circumstances can be found in various streams of current economic literature, even though the analytical standpoints adopted often differ greatly from the one just outlined. This suggests that they are empirically relevant in affecting wages. For example, the empirical literature on the ‘wage curve’ (Blanchflower and Oswald 1994) shows the connection between labour market conditions, the unemployment rate in particular, and real wages across regions and industries within a country; changes in the ‘bargaining strength’ of the parties involved (in the form of shifts in the pseudo demand and supply curves) have been indicated as one possible explanation of changes in income distribution in Europe (Blanchard 1997); the political situation has been regarded as a central factor in determining the unemployment rate and income distribution across countries (Korpi 1991). Adoption of the classical standpoint implies, however, that such factors as institutional changes are not expected to have only transitory effects and are not regarded as ‘disturbances’ with respect to the underlying forces of ‘supply and demand’. For the same reason, institutional factors determining wage stickiness cannot be seen as the causes of unemployment (the latter depending essentially on effective demand and technical change, given labour supply).

The structure of the paper is as follows. In section 5.2 we describe the trends of contractual wages and earnings, both gross and net of taxes and employees' contributions, and discuss some regression results as a means of assessing the major influences on wage trends. In this connection, we also comment upon the observed scarce influence of labour productivity and terms of trade on wages. In the following two sections we first analyse in greater detail labour market conditions at particular junctures (Section 5.3) and then broaden the analysis to look at the influence of institutional and economic changes (Section 5.4). In Section 5.5 we summarise our results and discuss some open questions in connection with the literature.

5.2 Description of trends and some quantitative analysis

Although the rest of the paper focuses solely on the period 1970-2000, we shall look here at the data available on contractual wages since 1956 so as to provide some longer-term perspective and ground for comparison. We are primarily interested in the real wages of production workers in the business sector. Within the latter, we focus on Industry and Trade, since they account together for about 70% of all employees and appear to be reasonably homogeneous in terms of types of activities and of employees.³

Examination of Figure 5.1 clearly shows the drive towards higher wage increases in industry and trade in 1962-65, a subsequent slow-down caused by a cyclical downturn, and then sustained growth in 1970-77 at an annual average rate of about 7%. The average growth rates then decline sharply, approaching zero in the 1990s (1.3% per annum in 1978-88 and 0.3% in 1989-00). They were thus similar in the 1980s and lower in the 1990s with respect to the 1955-61 period, usually regarded as one of trade-union weakness and large labour reserves in backward agriculture and in the southern regions.

(INSERT FIGURE 5.1 around here)

Changes in gross earnings (which are an average of the earnings of all employees, including white collars) in both Industry and Trade closely follow those in contractual wages. Considering Industry alone, the change in the trend occurring after 1977 is, however, even more marked if we look at earnings net of income taxes and employees' contributions, as shown in Figure 5.2.⁴ Net earnings rose about six points less than gross earnings between 1976 and 1979 owing to the increasing incidence of employee contributions and income-tax rates and to the phenomenon of fiscal drag. Subsequently they even fell (10 points in 1979-83), regaining their 1979 value only in 1988. After a very slight recovery, net earnings have again performed worse than gross since 1992. They fell three percentage points more than gross earnings in 1992-95 (the aim of fulfilling the 'Maastricht parameters' led to an increase in taxes on labour at a time when real gross earnings were falling) and, unlike the latter, had not yet regained the 1990 level in 2000 (see also Banca d'Italia, 2001a).⁵

(INSERT FIGURE 5.2 around here)

In order to assess possible explanations of the trends described above, we have explored the correlation between (gross) wages and earnings in Industry and Trade and a number of variables that could be expected to prove influential, particularly productivity growth and labour market conditions. The latter in turn may be general, reflected in indicators such as the unemployment rate,⁶ or specific to given groups of workers, reflected in the unemployment rates of sub-sets of employees or in sector employment trends.

There are two aspects to be noted at the start of this empirical exploration. First, since simple correlation analysis shows that the moving averages of actual earning rates of change in each sector are strongly correlated with those of contractual wages (the Pearson correlation coefficients are $R=0.92$ and $R=0.89$ in Industry and Trade respectively), we have chosen to

discuss here the main factors affecting the rates of change of contractual wages. Second, as can be gathered from Figure 5.1 above, there is a very close correlation between changes in contractual wages in Industry and Trade ($R=0.96$ for moving averages). This correlation is greater than, and cannot therefore be simply attributed to, correlation with a third factor (such as the general unemployment rate) influencing both variables, and suggests a direct link between the two. Since both are the result of national contracts, this link indicates that there is harmonisation between wage demands or wage concessions made by the parties involved in the two sectors. Both data analysis and historical experience suggest, however, that the industrial sector has played a dominant role in wage determination. As regards the data, the Pearson correlation coefficient between contractual wages and rates of change in the sector's employees⁷ is in fact relatively high in Industry ($R=0.7$), while it is almost nil in the Trade sector ($R=0.03$).⁸ Together with the very high correlation between wages in Industry and Trade, this suggests a leading role played by wage setting in Industry (see also Brunello 1996). We can therefore regard industrial wages as our pivot variable, affecting wages and earnings of employees in the business sector as a whole.

(INSERT TABLE 5.1 around here)

Focusing thus on Industry, Table 5.1 shows the results obtained by regressing the rates of change in real wages in Industry on the rate of change in productivity and employees in the same sector, the general unemployment rate, and two dummies for the years 1979 and 1993-95, three-year moving averages being taken for all the variables.⁹ The overall unemployment rate appears to have played the major role in affecting real wages in the 1970-2000 period (a similar influence being found also in the previous decade).¹⁰ As discussed above, changes in industrial employment also play a less important but still significant role. By contrast, changes in productivity have a small and statistically non-significant coefficient, while the

1979 dummy has a coefficient of -1.8 and is statistically significant: in that year there was a downward movement in the rate of change in wages not fully accounted for by unemployment and industrial employment trends. After 1977 wages also began to grow less than industrial sector productivity, having grown (on average) more than productivity as from 1969. Another change with respect to previous trends emerges in the early 1990s, namely a fall in contractual real wages for the first time since the 1950s followed by stagnation. Again, the coefficient on the 1993-95 dummy is negative (-1.5), and statistically significant. Such decline in real wages, albeit moderate, is quite a new phenomenon in the post-war period, and calls for enquiry.

Some of the factors discussed are clearly described by the scatter diagram in Figure 5.3, which illustrates with immediacy the relationship between (moving averages of) unemployment and real wage growth and its changes in 1979 and 1993-95. The diagram also shows that the relation tends to become non-linear as growth in real wages approaches zero for the well known reason that decreases in real wages are generally difficult to bring about and, if they take place, tend to be very gradual.¹¹

(INSERT FIGURE 5.3 around here)

In the next section we shall look more closely at labour market conditions at those particular junctures. Before that, however, we shall discuss the question of the influence of productivity on real wage trends a little further. In this connection, it is advisable to extend the analysis to the business sector as a whole. Actually, wage increases might not match productivity growth in individual sectors, but productivity gains might be redistributed from workers in sectors with high productivity growth to workers in other sectors, for example owing to a centralised bargaining system ensuring equal wage increases across industries. It is worth examining this point. Productivity growth evidently 'makes room' for wage increases at a given rate of profit, and it has often been argued, on different grounds, that changes in productivity tend to

determine changes in real wages.¹² However, since the same effect upon the ‘margins’ for wage increases arises also from improvements in the terms of trade, we should in fact ascertain whether productivity *and* terms of trade have played a joint direct role in determining wage trends.¹³

Table 5.2 shows the results of a regression similar to the one estimated for *Industry* but referring to the *Business* sector as a whole and with rates of change in actual real earnings as the dependent variable and terms of trade as one of the independent variables. Changes in terms of trade have a very small and statistically non-significant coefficient. The coefficient of productivity is now statistically significant, albeit not very large (one percentage point change in productivity is on average associated with a half-percentage-point increase in real wages, other things remaining constant). Indeed, in the *Business* sector as a whole, as in *Industry*, until 1977, with a comparatively low unemployment rate, wages tended to rise systematically more than productivity, despite a worsening of the terms of trade, while they rose systematically less afterwards, when the unemployment rates were rising, notwithstanding the improvement in the terms of trade during the 1980s.¹⁴ This does not mean, of course, that the trends in labour productivity and the terms of trade are irrelevant in accounting for the movements in money and real wages. It does mean, however, that no mechanical or *a priori* link can be claimed between those variables and that the distribution of gains from productivity growth or changes in the terms of trade actually depends on the workers' bargaining position. (Levrero 1999).

(INSERT TABLE 5.2 around here)

5.3 Broader view of labour market conditions

As we have seen, the overall unemployment rate is the most relevant variable affecting real wage changes in *Industry* as well as in *Trade* and the private sector as a whole. We have also seen that in 1979 and 1993-94 there were changes in real wages that must be explained by other circumstances besides the variables included in the regression. For reasons that will become clear in this and the next sections, these circumstances had also an influence on subsequent wage and (particularly after 1979) unemployment trends. In this section we shall take into consideration the possible influence of changes in aspects of the labour market not captured by the variables included in the regression, while the following section will examine the broader economic and institutional situation.

There is one aspect of the labour market situation in particular that may have played a role in the changes in industrial relations that took place around 1979, namely, the process of restructuring underway in the large firms, which were at the core of union militancy and action, and where employment was declining (in contrast with the still positive trend for the sector as a whole) and many workers were *made temporarily redundant under the CIG* (see note 8 above). Employment fell, albeit moderately, in firms with more than 200 employees in the period 1978-80 (-1.2%), continuing the slightly negative trend of the period 1974-77 (-0.4). Similarly, employment fell in firms with more than 500 employees at annual rates of about 1% between 1975 and 1978, while total hours worked (net of temporary redundancies) dropped by 4% between 1977 and 1979.¹⁵ This was due to technical innovations and the development of what was called the strategy of 'decentralisation of production', which assigned some phases of production to smaller units that were only nominally independent of the larger firms and characterised by greater labour flexibility and a lower degree of conflict. Changes in employment and *redundancies* in large firms after the mid-seventies therefore probably contributed to the changes in wage trends and industrial relations observed after

1977. Nor should we overlook the fact that while employment growth was still positive, general unemployment did increase between 1975 and 1977. While the figure involved may appear moderate nowadays, it caused alarm at the time and may have contributed to the changes in trade-union attitudes described in section 5.4 below.

As regards the fall in real wages in the 1990s following the devaluation of the lira in 1992, it should be noted that the unemployment rate in 1992-93 and the subsequent years may not be a good indicator of what was happening in the labour market for two reasons. One is a break in the statistical series caused by a restrictive change in the definition of the unemployed.¹⁶ The other is the very significant decrease in the number of employees for the economy as a whole in 1993-94 associated with a drop of two percentage points in both male and female activity rates.

It should also be noted that the Italian labour market underwent other important changes in the 1990s that may have played a role in the general weakening of the workers' position and the stagnation of real wages and earnings during this period. First, there was an increase in the number of jobs characterised by limited duration, made possible by changes in legislation and accounting at the end of the 1990s for about 18% of all employees in *Trade* and *Industry*. Second, there were increasing flows of immigrant workers, accounting for about 4,8% of the *total* labour force, including irregular jobs, in the year 2000 (ISTAT 2002a). While these changes in the composition of the labour force have a direct effect on average actual labour costs and earnings,¹⁷ it is not easy to evaluate their impact on union bargaining and contractual wages, especially in *Industry* and *Trade*. Combined with high juvenile unemployment rates, the particular high incidence of temporary jobs among the youngest segment of the labour force has very probably inhibited the young workers' potential for union militancy. On the other hand, a union report suggests that the availability of immigrant labour during the 1990s had no negative effect on contractual wages except in *Agriculture* and, to a lesser extent, *Construction* (Olini 2003). All in all, given that the changes described

intensified in the second part of the decade, it appears that they may have played more of a role in the slow growth of wages in this latter period than in the fall in wages between 1993 and 1995.

To sum up, labour market conditions not captured by changes in rates of unemployment and employment growth appear to have contributed to triggering the fall in real wage growth taking place in the late 1970s and early 1990s, thus confirming the influence of the labour market situation on real wages. Their downward movement between (moving averages centred in) 1978 and 1979 appears to have been favoured by negative trends in employment *in large firms*, while the fall in real wages after 1992 by a fall in the overall employment level and activity rates. Both in 1977-79 and in 1992-95, however, broader changes in industrial relations and the general institutional and economic framework were also taking place, as discussed in the next section.

5.4 External constraints, macroeconomic policies and institutional changes

Let us thus look first at the social and political situation, the pressure of international competition, and economic policy decisions around the years 1978-79, which facilitated the emergence of policies that to some extent contributed to the increase in unemployment and the reduction in industrial employment in the subsequent years, and of a dramatic change in industrial relations.

The fact that wages begin to grow less than productivity as early as 1978 and that the rate of increase in wages falls sharply at the very beginning of the recession in 1980, despite the good economic performance of the previous year, suggest that the roots of the fall in real wage growth are to be sought before 1979. In particular, it appears possible to trace them back to the period of the so-called ‘consensual stabilisation’ (Salvati 2000) in 1977-79, that is

to the years that saw the end of the previous phase beginning in 1969 characterised by real wages increasing more than productivity and a sharp fall in the lira's nominal exchange rate.

As regards wage bargaining, the 'consensual stabilisation' was characterised by the trade unions' acceptance of restraints in wage claims. An initial reduction of the coverage of the wage-indexation clauses set up in 1975 was introduced in 1977 (severance pay was excluded from wage indexation and some wage-goods were eliminated from the basket of the cost of living index). Furthermore, the congress of the major workers' organisation (the CGIL) substantially accepted the idea that wages cannot be an 'independent variable' and that high wages could conflict with the aim of full employment and growth. With reference mainly to the experience of other countries, an 'exchange' was thus proposed by the CGIL (and accepted in 1978 by all the three major trade unions) between wage moderation and the workers' participation in private and public investment decisions.

Whatever the reason for the trade unions' new strategy – whether it was the political prospect of the Communist Party's full participation in government after its electoral peak in 1975-76 or the belief that wage moderation would lead to an increase in the amount of employment¹⁸ – it substantially failed. On the one hand, owing to the vagueness of the proposal and Italy's different political and historical context with respect to countries like Austria, Germany and Sweden, no 'exchange' actually took place to reward moderation in real wages.¹⁹ On the other, by reducing conflicts at the workplace level, that new strategy permitted a faster increase in productivity and employment fell in the large firms forming the 'core' of the workers' organisations. Together with an increase in the number of small firms (to which the larger firms increasingly subcontracted certain phases of production) and in outsourcing (see Heimler and Milana 1986), these processes undermined the trade unions' strength precisely when a government plan ('Documento Pandolfi') explicitly advocated restrictive monetary and fiscal policies. Moreover, as in the case of income policy in the United Kingdom (Tarling and Wilkinson 1977), wage restraint undermined worker militancy

at the very time of mounting dissatisfaction with the trade unions on the part of the social groups and workers less protected against price inflation.²⁰

One consequence of this phase of ‘consensual stabilisation’ was to facilitate Italian adherence to the Franco-German architecture of the European Monetary System (EMS), which helped in turn to place organised labour under further pressure.

First, the worsening of the real exchange rate in the years 1979-80 in terms of export prices (whose index rose from 89.8 to 93.5) and the second ‘oil shock’ in 1979 contributed greatly to the fall in exports and industrial production in 1980. This fall and the new exchange rate regime set up in 1979 were regarded by Confindustria (the national association of entrepreneurs) as calling for a sharp change in industrial relations. Its first significant manifestation was in Fiat’s new industrial policy and anti-union attitude (Romiti and Pansa 1988, Lama 1987), which led to the defeat of the metalworkers’ trade unions (the leading force in wage bargaining) in 1980 during the strike at the Fiat factories against the dismissal of 14,000 workers. After the defeat, which marked a turning point in industrial relations and highlighted the above-mentioned difficulties of organised labour, the membership of the metalworking trade unions fell sharply,²¹ as did the numbers of working hours lost through strikes (ISTAT 2002a).

Second, the monetary regime established by the EMS and the rise in the real rates of interest in the United States necessitated an abrupt halt in the rate of inflation, which was higher than in other countries (12 percentage points higher than Germany in 1978 and 20 in 1979). In line with suggestions put forward in OECD documents,²² the Governor of the Bank of Italy thus stressed the need for a change in the ‘monetary constitution’ (Banca d’Italia, 1981 and 1982) and implemented restrictive monetary and credit policies associated with high nominal interest rates. Together with the substantial fall in exports in 1980, this led to a sharp decrease in gross private fixed investment in the years 1981-83 and a standstill in real

GDP in the period 1980-83. In spite of this, not only were the deflationary monetary policies continued but restrictive fiscal measures were also implemented after 1981 and to a greater extent than in 1976. The growth rate of public expenditure dropped and reached a minimum in 1984 and 1985 (Giarda 1986), thus contributing to the continuing decrease in industrial employment and the rise in unemployment (see Figure 5.4).²³

(INSERT FIGURE 5.4 around here)

In addition to these, other measures were also introduced with the same aim of slowing down the rate of inflation and helping firms to cope with the pressure of international competition (the real exchange rates worsened again in 1982-84). In order to increase labour productivity, public subsidies to firms were reduced and recourse was facilitated to early retirement and temporary redundancy under the CIG. More importantly, an agreement reducing wage-indexation by 15 per cent and linking it during the first half of 1984 to a government-targeted inflation rate was signed in 1983 by Confindustria and some of the unions, but not by the CGIL, thus causing a deep rift in the trade-union movement. The CGIL and the Communist Party called a referendum against that agreement, and were defeated in 1985.

Anti-union practices and individual benefits and premiums became widespread in the following years,²⁴ while the divisions among the trade unions persisted (as shown by several 'separate agreements' signed by them). As a result of this situation and the rise in unemployment, high *real* rates of interest and a change in distribution favourable to profits were able to persist. After being negative for most of the seventies and becoming positive in 1981, the long-term real rate of interest rose to 3 per cent in 1983 and 6.5 per cent in 1987.

As regards the period 1992-96 (which marked another change in the trend of real wages as shown in Figure 5.1), it can be said that the fall in real wages during these years reflects the worsening of the workers' bargaining position during the 1980s as a result of the social and political factors mentioned above and the increase in the average rate of unemployment (which rose to 10 per cent). Other factors also appear to have been relevant, however.

The 1992 devaluation of the lira occurred after the fixed exchange rate regime in 1988-92 (Italy's adherence to the 'narrow band' of the European Monetary System) designed to discipline wage bargaining (Pivetti 1999). As is known, the regime proved only partially successful in this regard. On the one hand, there was a growing gap with respect to France and Germany in the rate of change in the unit labour costs of the private sector, arising both from a recovery of money wages in 1989-91 (fostered by a cyclical increase in industrial employment) and from lower productivity growth than in other countries (see Table 5.3). On the other, the money costs of production were increased also by the rise in nominal interest rates decided upon by the Bank of Italy in order to guarantee a surplus in the overall balance of payments after the full liberalisation of capital movements in 1988. There was thus a real appreciation of the *Lira* (in terms both of unit labour costs and of export prices) and the balance of trade became negative in 1987-91. Manufacturing firms were accordingly under increasing pressure not to raise their prices and the situation led to an increase in the wage-income share of industrial value added and to Confindustria's unilateral suspension of the price-indexation clauses.

(INSERT TABLE 5.3 around here)

The stringent fiscal measures introduced by the Amato government in 1992 to reduce the domestic product failed to prevent the currency crisis brought about by these causes and fuelled by Germany's monetary policy. (The Bundesbank had raised the interest rates and did

not intervene to defend the lira, which depreciated by 58 per cent with respect to the mark and 30 per cent with respect to sterling). Those measures favoured, however, the fall in the unit labour cost even in terms of the national currency, which was greater than in other countries. The real exchange rates thus improved sharply, albeit more in terms of unit labour cost rate than of export prices. Firms used the depreciation to some extent to increase their profit margins (see Banca d'Italia 1999a).

It can be stated that, as in other periods (see for example Graziani and Meloni 1980), currency depreciation and deflationary policies were the tools used to boost profits and improve the competitiveness of Italian industry. Unlike the period 1971-76,²⁵ both these aims were now achieved. The depreciation of the currency was not accompanied by a wage-price spiral; on the contrary, the rate of inflation decreased slightly in 1992-94, and money wages rose less than prices.

Although the decrease in industrial and total employment during the period 1992-96 certainly helped to keep money wages in check, the inability of the latter to respond to price increases resulted also from the reforms of wage settlements introduced by Amato in 1992 and 1993. With the new wage-setting procedures, nominal wages were linked to the target inflation rate, which was usually fixed at a level lower than the actual (see Banca d'Italia 2000a), while the task of linking wages to productivity was assigned to firm-level bargaining, which never developed extensively (it covered only 39 per cent of employees in firms with more than 10 employees and 62 per cent of employees in firms with more than 500 employees in the period 1995-96). Thus, the fact that trade unions accepted the need to restrain wage claims on the grounds of the Maastricht Treaty signed in 1992 appears to have played a role in bringing about the fall in real wages in the years 1992-96, as well as in keeping their rise at a lower rate than productivity in the years 1996-2000.²⁶

5.5 Some final remarks

We shall now summarise our main results, comment briefly on some of these, and indicate some open questions.

Our empirical analysis shows that the primary factor affecting real wage trends in Italy in the 1970-2000 period appears to have been unemployment, while productivity growth played no role in directly affecting the rates of change of industrial wages and a minor one in the trends of earnings in the business sector as a whole. There were, however, also broader factors involved in affecting wage trends. In particular, the fall in wage growth after 1977 precedes the dramatic decline in industrial production and industrial employment (and the parallel rise in the unemployment rate) beginning respectively in 1980 and 1981. Its roots lie in a weakening of the trade unions related both to the decrease in employment in large industrial firms between 1975 and 1979 and to the broader social and political context of the phase of ‘consensual stabilisation’. After 1979 the decline in wage growth reflects, besides the worsening of labour market conditions, the changes in the institutional and socio-political situation in the previous years as well as the increasing pressures to reduce inflation generated by the exchange rate agreements in Europe and the rise in US interest rates.

In the 1990s we observe an unprecedented (in the post-war period) vulnerability of real wages to the exogenous increase in prices after the lira devaluation in 1992. This also must be seen in connection with institutional changes, namely the new wage-setting procedures agreed upon in the same year, combined with the unions’ inability to ensure the development of firm-level bargaining. This new wage-setting procedures and the overall economic situation, characterised in particular by the Government aim of fulfilling the ‘Maastricht parameters’, contributed to the stagnation of wages during the 1990s.

It may be worth commenting on some of the above points in the light of the existing literature, namely the changes in wage behaviour in the 1990s, the relationship between unemployment and real wages, and the role of institutional factors.

- *Changes in the characteristic behaviour of real wages.* According to Boyer (1979) the characteristic feature of the period from the end of World War II to the mid-seventies (but already beginning to establish itself in the first decades of the century) was the absence of even transitory downward movements in real wage levels and their tendency to grow at a fairly stable annual rate. In this respect, the Italian experience in the nineties may suggest the appearance of a new scenario – or rather perhaps the return to an older one – in which real wages, or their annual rates of change, may decrease during the negative phases of the economic cycle or as a consequence of changes in the price level. Further investigation might establish whether this pattern is common to other industrialised economies.
- *A real-wage Phillips curve?* The scatter diagram in Figure 5.3 above suggests a ‘real wage Phillips curve’. There are in fact some obvious analogies with the original Phillips curve, namely the fact that it was also concerned with average values of the variables (albeit derived with a different procedure) rather than cyclical changes, and the non-linear nature of the relationship, associated with a downward stickiness of wages even with high unemployment. A further analogy is that the relationship between unemployment and real wages, like that between unemployment and money wages, can be interpreted as a consequence of the influence of the former on the bargaining position of the parties involved (Rothschild 1993: 129-30). It is, however, interesting that the relationship holds for real wages, since it suggests that changes in the bargaining position of workers related to labour market conditions affected distribution, despite the ability of employers to respond to money wage increases with price inflation, at least in some phases.²⁷ In general, however, we do not believe that quantitative relations should be sought for *predictive* purposes (i.e. to predict the rate of change of wages associated with particular values of

the unemployment rate or other variables). The shape and position of such a relation actually depend on the broader institutional and economic setting and are bound to change when changes take place in the latter. Moreover, such changes in the broader context may be triggered by changes in unemployment itself. Generally speaking, one would not expect the effect of the unemployment rate on the growth of real wages to be independent of the *previous path* of these and other relevant variables.²⁸ In addition to this, great care should of course be taken not to generalise from a relation found to hold in Italy over a certain period, which may not hold in different countries or different periods. Further investigation in this direction should contribute to a better understanding of the channels through which unemployment may actually affect wage determination in specific institutional settings.

Having said that, we believe that the strong correlation we have found between *average* values of the unemployment rate and real wage growth is an interesting result of our work. As regards Italy, it actually contradicts the apparently widespread view that wages are not affected by unemployment levels, which is probably based on the results of some cross-regional studies.²⁹

- *An independent role for political and institutional factors?* It has been maintained that institutional factors play no role in real wage trends in the very long run because the latter must reflect the underlying forces of ‘supply and demand’ (see for example Phelps-Brown 1968, and Levrero 1999, for critical discussion). Apart from the theoretical difference between the traditional view (shared by Phelps-Brown) and our approach as regards the way in which labour market conditions and institutional factors affect wages, our study suggests that such an independent role was played in Italy, for example, by the broad political and union situation in the years between 1976-79 and that the effects of the changed institutional context and political climate were largely felt in the following years through the high unemployment generated by unconditional adherence to the EMS, the

more restrictive approach in fiscal and monetary policy, and industrial restructuring. This is in agreement with a stream of contributions, mainly from political scientists, maintaining that political factors affect unemployment levels and income distribution (Higgs 1977, Alt 1985, among others). But the case of Italy also appears to lend support to Korpi's (1991) warning that, while the political context is a very relevant factor, a number of political and institutional circumstances must be taken into account in addition to the political orientation of government parties.

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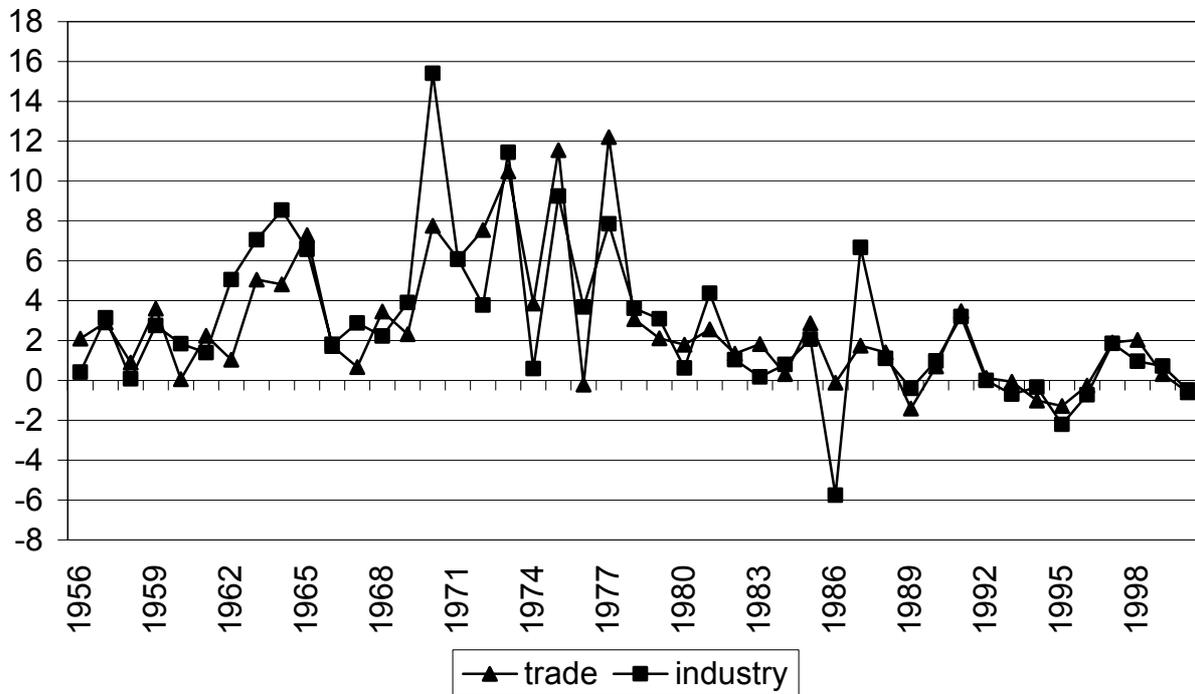
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Figure 5.1 Annual rates of change of real hourly wages of production workers in trade and industry, 1956 - 2000



Source: ISTAT, *Sommario di statistiche storiche 1926-1985 & Lavoro e Retribuzioni* (various years)

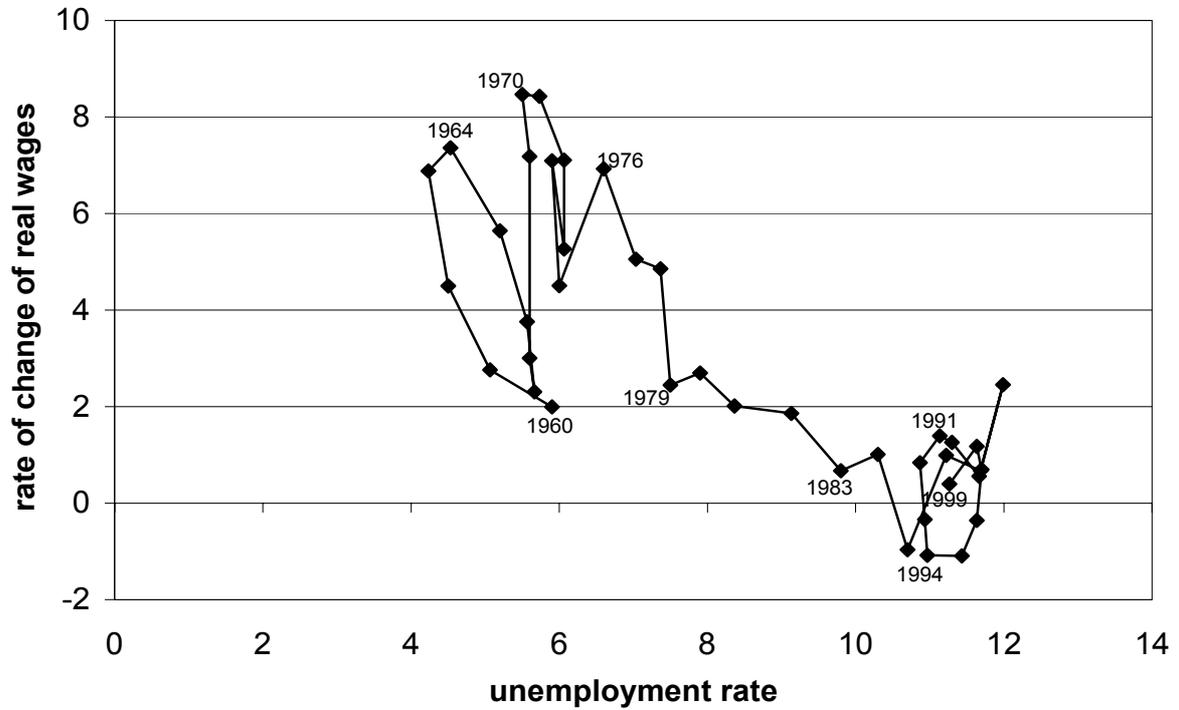
Figure 5.2 Real gross and net earnings in industry (1972 = 100), 1972-2000



Please change: Real Gross Earnings, Industry Real Net Earnings, Industry

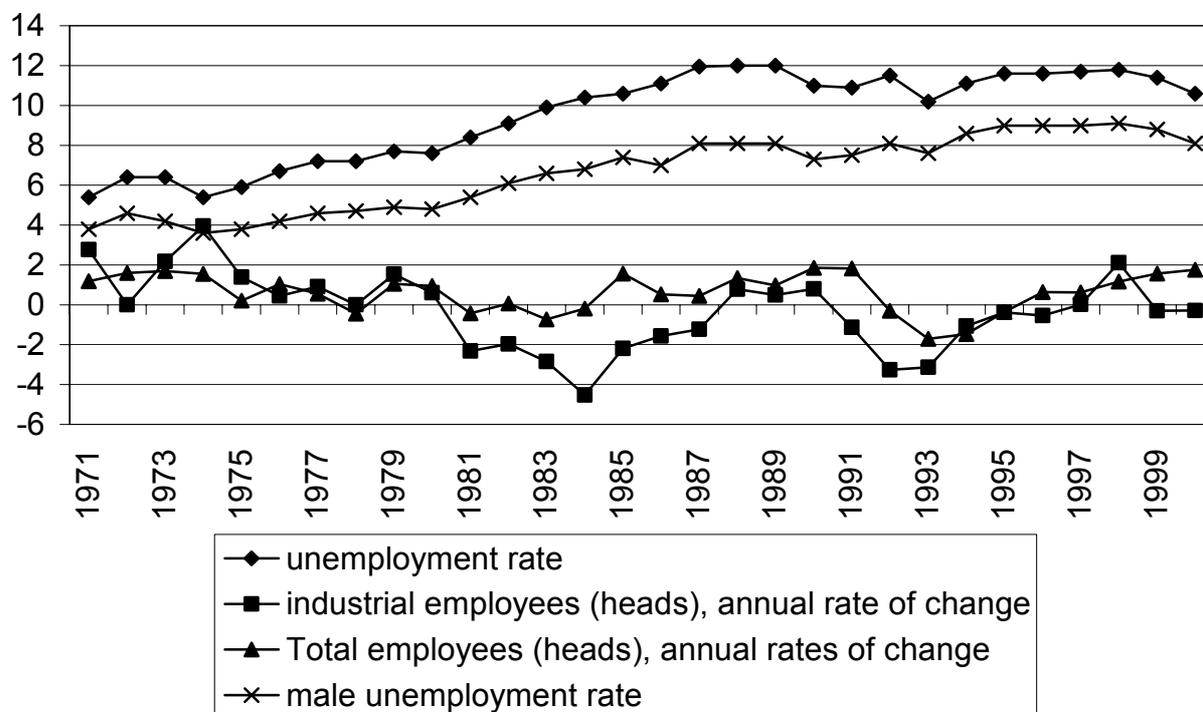
Sources: OECD, *The Tax-Benefit Position of Production Workers* (various years), and ISTAT, *Contabilità Nazionale* (2002b) (see also note 4)

Figure 5.3 Unemployment and rate of growth of real wages in Industry, 1960-1999
(moving averages)



Sources: ISTAT, *Rilevazioni delle Forze di Lavoro* (various years) for the unemployment rate; ISTAT, *Sommario di Statistiche storiche 1926-1985 & Lavoro e Retribuzioni* (various years) for wages (see also notes 3 and 16)

Figure 5.4 Unemployment rates * and annual rates of change in industrial and total employees, 1971-2000



Note: * since 1993 the new definition of unemployment gives rise to a lower estimated unemployment rate (see note 16).

Sources: ISTAT, *Rilevazioni delle Forze di Lavoro* (various years) for the unemployment rates; ISTAT *Contabilità Nazionale* (2002b), for employees

Table 5.1 Determinants of rates of change in industrial wages

<i>Dependent variable: Rates of change in industrial real wages^a</i>				
Adjusted R Square	0.86			
Standard Error	1.00			
Observations	28			
<i>F</i>	33.10			
<i>D.W.</i>	2.61			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t-Stat</i>	<i>P-value</i>
Intercept	9.71	1.03	9.41	0.00
Productivity ^b	0.10	0.10	0.99	0.34
1993-95 ^d	-1.51	0.61	-2.47	0.02
1979 ^d	-1.80	0.99	-1.81	0.08
Unemployment ^c	-0.78	0.10	-7.73	0.00
Employees ^b	0.44	0.13	3.26	0.00
^a three years moving average				
^b three years moving averages of annual rates of change: Employees measured in 'heads'.				
^c three years moving average				
^d assumes value one in 1994-95, zero otherwise, assumes value in 1979, zero otherwise				

Sources: ISTAT, *Contabilità Nazionale* (2002b) for productivity and employees; ISTAT, *Rilevazioni delle Forze di Lavoro* (various years) for unemployment; ISTAT, *Sommario di Statistiche storiche 1926-1985 & Lavoro e Retribuzioni* (various years) for wages (see also note 3 and 16)

Table 5.2 Determinants of rates of change in real earnings in the business sector

<i>Dependent variable: Rates of change in real earnings in the business sector^a</i>				
<i>Regression Statistics</i>				
Adjusted R Square		0.80		
Standard Error		0.93		
Observations		28		
<i>F</i>		19.05		
<i>D.W.</i>		1.55		
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t-Stat</i>	<i>P-value</i>
Intercept	7.39	1.43	5.15	0.00
1993-1995 ^d	-0.14	1.03	-0.14	0.89
Unemployment ^a	-0.70	0.14	-4.86	0.00
1979 ^d	-2.42	0.97	-2.49	0.02
Productivity ^b	0.47	0.17	2.85	0.01
Terms of Trade ^c	0.05	0.12	0.39	0.70
Employment (economy) ^a	0.82	0.38	2.18	0.04

^a three years moving average
^b three years moving averages of annual rates of change
^c three years moving average of annual rates of change of terms of trade index
^d assumes value one in 1979, zero otherwise, assumes value in 1993-95, zero otherwise

Sources: ISTAT, *Contabilità Nazionale* (2002b) for productivity, employees and earnings; ISTAT, *Rilevazioni delle Forze di Lavoro* (various years) for unemployment; European Commission (2002) for terms of trade (see also note 3 and 16)

Table 5.3 Rates of changes in hourly productivity, hourly labour costs, real exchanges rates in manufacturing in the main industrialised countries

	<i>1979- 2001</i>	<i>1979- 1985</i>	<i>1985- 1990</i>	<i>1990- 1995</i>	<i>1995- 2000</i>
<i>Productivity per manhour</i>					
USA	3.4	3.5	2.4	3.3	4.7
FRA	3.7	3.0	3.4	4.0	4.6
GER	2.5	2.1	2.1	3.3	2.6
ITA	2.2	3.5	1.9	2.4	0.9
UK	3.6	4.4	4.6	3.3	2.4
<i>Hourly labour costs</i>					
USA	4.6	7.2	3.9	3.5	4.0
FRA	5.9	12.8	4.5	3.9	1.9
GER	5.0	6.0	5.0	6.4	2.6
ITA	7.7	15.9	6.8	4.9	2.8
UK	7.9	12.2	9.4	5.4	4.6
<i>Unit labour cost in national currency</i>					
USA	1.2	3.6	1.4	0.2	-0.7
FRA	2.2	9.5	1.0	-0.1	-2.6
GER	2.4	3.8	2.8	3.1	-0.1
ITA	5.4	12.0	4.8	2.4	1.9
UK	4.1	7.5	4.5	2.1	2.2
<i>Real exchange rates</i>					
FRA	-0.3	-3.3	11.6	1.7	-9.2
GER	1.6	-4.1	15.9	5.6	-7.6
ITA	0.9	-2.5	15.1	-3.7	-3.1
UK	2.3	-1.0	11.4	-0.4	1.3

Source: U.S. Department of Labor (2002).

Notes

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¹ For recent critical discussion of neoclassical substitution mechanisms, see Garegnani (2003); for analytical criticism of the tendency to the NAIRU, see Petri (2003) and Petri (2004: chapter 7 and appendix 2).

² Worsening labour market conditions, for example, may trigger broader changes in the institutional framework, such as a weakening of trade unions, while on the other hand, labour market conditions themselves are not independent of economic policies, which are influenced by the social and political climate. In some instances, labour market conditions can also be affected by the employers’ direct response to conflict, the large firm restructuring and ‘decentralisation of production’ carried out in Italy in the 1970s being a case in point (see below, Sections 5.3 and 5.4).

³ Industry includes *Manufacturing* and *Energy production* but not *Construction*; *Trade* includes *Catering* and *Hotels*. Wages are contractual hourly wages based on *national* collective agreements between unions and employers. We shall use the series of contractual wages for production workers only (not including white collars). The source for aggregate earnings is National account data on gross incomes of employees. Earnings are then divided by ‘standard labour units’ defined as the normal working hours of a full-time employee. Wages and earnings are deflated by the cost of living index based on the typical consumption bundle of employees.

⁴ The real net earnings per standard labour unit in industry are derived by applying to gross earnings the percentage of taxes and contributions paid by an average Italian production worker

as estimated by the OECD (various years). Similar results can be obtained from the data of the *Bureau of Labor Statistics* and also from the Bank of Italy's *I Bilanci delle Famiglie Italiane*.

⁵ Notice also that the increasing weight of contributions and income tax on labour incomes was not compensated by greater social expenditure or structural changes in the Italian fiscal system towards higher *de facto* progressiveness. Social expenditure in real terms has stagnated in the last decade in particular, and there has been a worsening of the tax-benefit position for workers. In spite of rising fiscal pressure (attenuated after 1998, but more to the advantage of employers than employees) there has been a tendency to reduce the progressive nature of the tax system, and the real social expenditure index increased only from 100 in 1990 to 117,2 in 1999, having doubled every decade during the 1960s and the 1970s (OECD 1985, EUROSTAT 2000).

⁶ Activity rates and employment rates are also interesting indicators of labour market conditions given their ability to pinpoint changes in disguised rather than explicit unemployment. Systematic use has not been made of these indicators due to some breaks in the statistical series.

⁷ We have chosen to measure employment in 'heads' here because the relevant point for the bargaining strength of the parties involved appears to be the number of actual people getting or losing jobs (rather than the total hours worked). The drawback of this measurement is that it is gross of workers temporarily made redundant under the CIG (a national fund financed by the state and by contributions of employers and employees: the workers made redundant maintain their employment relationship and receive a subsidy).

⁸ Similar indications can be obtained from regression analyses, which show that along with unemployment the other statistically significant influence on real wage rates of change in the *Trade* sector comes from the rate of change in *industrial* employment. Employment and productivity in the *Trade* sector are instead not statistically significant.

⁹ We use moving averages because we expect the impact of economic factors on wages to be greater if they persist over time. On the other hand, we are not interested in very short-term variations in wage growth.

¹⁰ Data not reported here show that wage changes are more correlated with the overall unemployment rate than with the unemployment rates for specific groups (male workers, north-central regions) and the rates of growth of employment for the economy as a whole. It is worth noting, however, that the correlation with the latter becomes very strong in the last decade. This role of unemployment is almost surprising, as it might have been expected that the high female and southern component of unemployment would have a limited influence on union action, largely carried out in large firms concentrated in the north of Italy. It is possible that this influence was indirect, at least to some extent, that is related to a tendency on the part of unions to regard unemployment as the result of the country's economic difficulties and wage moderation as a factor that could help to overcome those difficulties (see also Section 5.4).

¹¹ We have kept to the linear specification of our regressions for the sake of greater simplicity and easier interpretation of the coefficients. The fit of the equations is good also in this form, and the improvements to be obtained by considering non-linearity are modest.

¹² According to the traditional Marginalist theory, for example, an increase in labour productivity due to technical innovation, with a given labour supply, would be associated with an increase in the equilibrium wage level (unless it were due to pervasive 'very labour-saving' technical change, according to Hicks' classification). Again according to this theory, an increase in labour productivity due to the change in the proportion of capital to labour, with given technical knowledge, would determine an increase in real wages. This would be the same size as that in productivity if the elasticity of substitution between labour and capital were equal to one (see Blanchard 1997 for a recent discussion of the latter properties). The same conclusions would derive from standard current models of wage determination, combining a 'wage curve' with a price equation, while in a different analytical context, a tendency of wages

to grow in step with productivity has been attributed to specific institutional arrangements, characterising the period from the end of World War II to the mid-1970s (Boyer 1979, among others).

¹³ To avoid misunderstandings, it should be noted that those ‘margins’ set no rigid limit to an increase in real wages, since the rate of profit can fall. Technological progress and improvements in the terms of trade only ‘make room’ for those increases by determining a rise in the rate of profit for a given wage (or vice versa).

¹⁴ See Levrero and Stirati (2004: 71-74). For the 1970s and early 1980s, see also OECD (1983).

¹⁵ Barca and Magnani (1989: 115), Banca d'Italia 1977a & 1980a. In the Industrial sector *as a whole* (firms of all sizes), the number of workers made redundant under the CIG peaked in 1972, 1975 and 1978, and again, more markedly, in 1980, while in 1979 there was a strong rise in employment.

¹⁶ The unemployment rate figures are taken from historical series reconstructed by ISTAT for the period until 1985 and between 1994 and 2000. The annual estimates from the *Rilevazioni della Forze di Lavoro* are used for the other years. Because of a restrictive change in the definition of unemployment, **since** October 1992 the statistical figures for the unemployment rate tend to be lower than with the previous definition. The difference between the unemployment rate statistics based on the new and old definition was estimated to be of 3.3 percentage points in 1993 (Banca d'Italia, 1994a).

¹⁷ Limited duration contracts (including collaborations) entail as a rule lower contributions and in some instances also lower pay. Immigrant workers tend to be paid between 5 and 10 per cent less than the Italians, after controlling for worker and job characteristics (Brandolini et al 2003).

¹⁸ In a difficult political climate, the Communist Party put pressure on the CGIL between 1977 and the first part of 1979 to accept wage moderation and gave its ‘external’ backing to the

Christian Democrat government. The CGIL in turn regarded the experience of ‘national solidarity’ as a ‘political’ result capable (at least in the following years) of opening up a phase of social improvements for workers (CGIL 1981: 96-97). With respect to opinions as regards the effects of wage moderation on employment, see Trentin (1980) according to whom those years had already seen a ‘cultural and political hegemony’ of the ‘laissez-faire’ tendencies influencing the policies of the workers’ organisations. The trade unions did in fact agree on the need for a ceiling to the public deficit and for a wage policy ‘coherent with the aim of full employment’ (CGIL 1981: 183 and 186-7).

¹⁹ It could be argued that wage restraint actually brought about an increase in employment thanks to the rise in exports. This was, however, partly offset by restrictive domestic policy (de Vivo and Pivetti 1980). Moreover, the trade unions even failed in their attempt to make fiscal and financial provisions for firms conditional upon their acceptance of an industrial policy based on sector investment plans.

²⁰ Apart from the effects of inflation on the real wealth of the middle class, the ‘egalitarian’ wage-indexation clauses of 1975 combined with non-uniformity in the timing of wage negotiations and the different bargaining strength of workers in the various sectors of the economy to generate dissatisfaction with the three main trade unions (CGIL, CISL and UIL) amongst skilled workers, white-collar workers and public-sector employees (whose real wages had fallen in the period 1975-77).

²¹ Similarly, the overall rate of worker unionisation fell from 49.3 in 1980 to 39.7 in 1986, 38.8 in 1990 and 35.8 in 1997.

²² See for example OECD (1977). See also Kaldor (1984: 113-169), who shows that the explicit aim of the deflationary policies in the United Kingdom was to weaken the workers’ bargaining position.

²³ The character of fiscal policies was instead not restrictive in 1979-81, due among other things to the increase in family subsidies and the salaries of public employees.

²⁴ This is reflected by the emergence of a 'wage drift' in industry between 1983 and 1988 and its disappearance in the 1990s, when the trade unions were already weakened.

²⁵ The fall in the lira's nominal exchange rate between 1971 and 1976 helped to avoid deterioration of the competitive position of Italian industry. The real exchange rate thus decreased slightly despite an increase in unit labour costs in terms of national currency that was greater than in the other industrialised countries (see Aquino 1986, European Commission 2002). The depreciation of the currency and the worsening of labour market conditions did not stop the growth of real wages, however, owing to the ever-increasing strength and militancy of the trade unions and to price indexation.

²⁶ It should be noted that no increase in employment or social expenditure could have been expected by the trade unions. The Maastricht parameters imposed a primary budget surplus and overall budget corrections amounted to 430 trillion lire between 1992 and 1998. The trade unions' strategy might thus have been guided by the idea that it was the 'lesser evil' and that lower interest rates might then help to change the restrictive character of fiscal policies.

²⁷ See Stirati (2001), for a more general perspective.

²⁸ It is very common in the literature to describe 'shifts' that remain largely unexplained in some functional relations (for example the traditional Phillips curve, or the pseudo demand and supply curves). Our position can be regarded as assuming that 'shifts' in empirical relations are only to be expected because wages are affected by changes in the institutional framework, but the causes of the 'shifts' should be explained as much as possible and not left outside the realm of economic analysis.

²⁹ See Lucifora and Origo (1999), who also provide a survey of previous results.