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Introduction

1. The purpose of the paper is to describe and attempt to interpret the long-term trends of wages in Italy in the 1970-2000 period. (The analysis of the data will be extended to the 1960s when continuous series are available).

While the paper is an applied work, it may be useful to provide a brief clarification of the broader framework implicit in the analysis. In approaching the explanation of wages, we do not assume that the economic forces underlying their trend can be described by a demand schedule based on neoclassical substitution mechanisms and a labour supply curve based on individual optimising choices. More generally, we do not envisage any tendency of the economy towards full employment or Nairu equilibria, such as is still assumed by the widely used models that replace the traditional demand and supply curves with “pseudo-curves” based respectively on the pricing rules of the representative firm and models of wage determination. 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 on the same footing and through the same channel, i.e. their influence on the ability of the parties involved to establish favourable conditions for themselves in the distribution of income (Stirati, 1992, Levrero, 2003). There is thus no a priori hierarchy in their respective role, although empirical and historical analysis may obviously show that certain factors have been more important than others in specific contexts and can also indicate their reciprocal influences.

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 literature on the “wage curve” (e.g. Blanchflower and Oswald, 1994) shows the connection between labour market conditions, the unemployment rate in particular, and real wages differentials 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 curve) have been indicated as

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1 While this paper is the result of close collaboration and discussion, Sergio Levrero wrote section 5 and the second part of sections 1 and 3; Antonella Stirati wrote sections 2 and 4 and the first parts of sections 1 and 3. We wish to thank our two anonymous referees for their comments as well as F. Bettio, S. Cesaratto, G. Olini, M. Pivetti and the participants at the 2003 annual IWPLMS conference, and the conference entitled “Sraffa o un’altra economia”, held in Rome in December 2003. The usual disclaimer applies.

2 For recent critical discussion of neoclassical substitution mechanisms, see Garegnani (2003); for discussion of the tendency to the Nairu in recent models, see Petri, 2003, parr 7.4 - 7.5, and Petri, 2004, chapter 7 and appendix 2.

3 For example, a worsening in labour market conditions may trigger broader changes in the institutional set-up, such as a weakening of trade unions. On the other hand, labour market conditions themselves are not independent of the broader context, as strong unions might be able to prevent the emergence of high unemployment and, more generally speaking, the latter is 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 ‘decentralisation of production’ carried out in Italy in the 1970s being a case in point (see below, sects 4 & 5).
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, as in some current literature, since they 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 regarded as the causes of unemployment (the latter depending essentially on effective demand and technical change, given labour supply).

2. The structure of the paper is as follows. In the first section we describe the trends of contractual wages and earnings, both gross and net of taxes and employees’ contributions. In the following sections we seek to explain the described changes in those trends. In section two we discuss correlations between wages and earnings on the one hand and other economic and labour market variables on the other as a means of assessing the major influences on wage trends. We will then go on to discuss the main results in greater detail, discussing productivity and terms of trade in section three and unemployment and other labour market features in section four. In section five we broaden the analysis to look at the influence of institutional and economic changes, focusing in particular on an explanation of the change in the wage trend that took place after 1977. In the last section we summarise our conclusions and discuss some open questions in connection with the literature.


3. The trends in rates of change in contractual wages can be observed immediately by looking at the 1956-2000 series in figure 1. We are primarily interested in the real wages and earnings of production workers in the business sector. Within the latter, we focus on Industry and Trade, since these two industries are the most important in terms of their weight in subordinate employment within the business sector and appear to be reasonably homogeneous internally in terms of types of activities and of employees.

Examination of figure 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 of about 7%. The average growth rates then continue to decline, approaching zero in the 1990s (1.3% per annum in 1978-1988 and 0.3% in 1989-00). They have thus been lower over the last decade than during the period 1955-1961, usually regarded as one of unions’ weakness.

Earnings in both sectors (which are an average of the earnings of all employees, including white collars), follow a path similar to that of contractual wages in the period 1970-2000 (see also table 1 below). A ‘wage drift’ of some significance emerges only in Industry between 1983 and 1988, when earnings grow about 1-1.5 points per annum more than wages. Interestingly enough, this difference tends to become very small in the

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4 The source for earnings is National accounts data for actual earnings of all employees gross of income taxes and employees contributions. Earnings are referred to “standard labour units” defined as the normal working time of a full-time employee. Wages are contractual hourly wages reported by Istat, based on national collective agreements between unions and employers, which in Italy acquire legal status and hence become the legal minimum wage. In general, unless explicitly indicated, we shall use the series of contractual wages for production workers only (i.e. not including white collars). In order to deflate wages and earnings, we use the cost of living index based on the typical consumption bundle of employees.

5 Industry here does not include Construction; Trade includes hotels, restaurants, bars, etc.
1990s, despite the fact that the 1993 wage-setting reform assigns a greater role to firm-level bargaining (see section 5 below).

**4.** The change in the trend occurring after 1977 is even more marked if we look at earnings net of income taxes and employees’ contributions rather than gross earnings, as shown in Figure 2. First, while both gross and net real earnings rose from 1972 to 1979, the index of the former went from 114.6 to 140.6 during the years 1976-1979 as against 114.2 to 134.2 for the latter. This is due to the rising incidence of employee contributions and income-tax rates after 1975 and to the phenomenon of fiscal drag (which increased fiscal revenue by 9 per cent over the period: see Giavazzi and Spaventa, 1989). Then between 1979 and 1983 while gross real earnings continued to rise, real net earnings fell from 134.2 to 125.6 (see also CER, 1987) and regained their 1979 value only in 1988. From this year to 1992 they rose slightly more than gross earnings (respectively, 8.3% and 5.1%), without closing the previous gap. Finally, after 1992 we observe the effect of lira depreciation and of the “Social Agreement” between trade unions and Confindustria (the Italian employers’ organization) which limited the increase in the money wages precisely when the aim of fulfilling the “Maastricht parameters” led to an increase in taxes on labour. Net real earnings fell by 6.3 per cent between 1992 and 1995 as against 3.3 per cent for gross earnings. Unlike the latter, the former did not regain its 1990 value in 2000 (see also Banca d’Italia, 2001).  

**7** The changes in the series of gross earnings thus not only remain but also tend to become more accentuated for net earnings, which our estimates indicate as stationary on average in the period 1980-2000. Nor was the increasing weight of contributions and income tax on labour incomes offset by greater social expenditures or structural changes in the Italian fiscal system. On the contrary, social expenditures in real terms had stagnated since 1990s and there has been a worsening of the tax-benefit position for workers. In spite of rising fiscal pressure (attenuated since 1998 but more to the advantage of employers than employees) and a tendency to reduce the progressive nature of the tax-system, real social expenditure increased only from 100 in 1990 to

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*The net earnings per standard labour unit in industry in terms of the cost of living index are derived by applying to the gross earnings the percentage of taxes and contributions paid by an average Italian production worker as estimated by OECD in several publications on the tax-benefit position of workers in the major industrialised countries. Similar results can be obtained by applying the same ratios to the data of the Bureau of Labor Statistics on the direct hourly pay of an Italian production worker in manufacturing.

This trend is confirmed by the Bank of Italy’s Surveys of Household Income and Wealth, according to which, when deflated by the cost of living index, the annual net earnings of Italian workers fell by 10 per cent between 1989 and 2000.

*In actual fact, the real price of labour coincides neither with the real gross wage nor with the real net wage since the amount of the goods and services furnished by the State vis-à-vis the taxes paid by the workers should also be taken into account. We thus observe a degree of variability between the net wages in the main industrialised countries greater than between the labour costs. This is so because certain wage-goods (and services) are paid out of the net wage in some countries and provided by the State in others.

*This tendency can be found in all the industrialised countries (see Leibfritz, Thornton and Bibbee, 1997) and takes the form of increasing indirect taxes, decreasing the taxes on the firms’ revenue and reducing the number of tax brackets on personal income (see OECD, 2002).
117.2 in 1999, while during the 1960s and the 1970s it had doubled every decade (Oecd, 1985; Eurostat, 2000)\textsuperscript{10}

2. Exploration of the data

5. In order to assess possible explanations of the trends described above, we begin by exploring 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,\textsuperscript{11} or specific to given groups of workers, reflected in the unemployment rates of sub-sets of employees, or in sector employment trends. One of our goals will be to assess the relevance of these different aspects of the labour market situation.

Table 1 shows the Pearson's correlation coefficients between moving averages of a number of variables and real wages and earnings in the period 1972-1999.\textsuperscript{12} When this seemed to be of interest, we also calculated the correlation for the sub-period 1990-1999. From the table we can see that there is no correlation in Industry between actual earnings and productivity growth ($R$ is 0.36, and is still lower between productivity growth and contractual wages). By contrast, the correlations with labour market indicators tend to be significant. The correlation between contractual wages and the unemployment rate is very high ($R=0.87$), and will be discussed in detail below (section 4). Retarded actual earnings and – more markedly - contractual wages are also correlated with rates of change in the sector’s employees ($R=0.6$ and $R=0.76$ respectively). Conversely, a correlation between earnings and trends in total employment emerges only for the 1990s, when it is, however, extremely high ($R=0.92$).\textsuperscript{13}

In the Trade sector also there is no correlation between actual earnings and productivity growth. With regard to labour market variables, the correlation between

\textsuperscript{10} It should be noted that total taxation is no higher in Italy than in the European Union (OECD, 2000), nor is the tax-wedge on labour any greater (OECD, 1998). The Italian tax system is, however, characterised by a low degree of progressiveness and marked tax evasion so that the fiscal burden falls primarily upon employees. Furthermore, in 2000, simply through their “deferred wage”, namely the social contributions paid by the employees or the employers out of labour income, the workers financed 61.3 per cent of total social expenditures (pensions, health, family, unemployment) and 90 per cent of 74 per cent of this total expenditures, where 74 represents the percentage of employees in total employment (for the data see Inpdap, 2002 and Ministero dell’Economia e delle Finanze, 2003. For similar results for 1990 see Capparucci, 1992).

\textsuperscript{11} Activity rates and employment rates also are interesting indicators of labour market conditions given their ability to pinpoint changes in disguised rather than explicit unemployment. Given some breaks in the statistical series for working age population we did not use systematically those indicators; their changes however tend to be consistent with those of the unemployment rate, with an exception commented in the text below.

\textsuperscript{12} We shall often use moving averages to describe phenomena and assess the relationships among variables 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.

\textsuperscript{13} 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). The correlation of real wage changes with employment in standard labour units, which is net of temporary redundancies, is, however, lower than with employment measured in ‘heads’.
wages and unemployment is very high in this sector also \((R=0.89)\)\(^{14}\) while, among the other indicators, the only relevant correlation is between retarded actual earnings and total employment in the 1990s \((R=0.79)\). There is, however, a very strong correlation between changes in the trade sector’s earnings and wages on the one hand and changes in industrial wages on the other \((R=0.84\) and \(R=0.96\) respectively).

(INSERIRE TABLE 1 QUI)

Contractual wages in the trade sector thus exhibit non-correlation with the specific labour market indicator, namely, the sector’s employment growth. Together with the very high correlation between wages in Industry and Trade, this suggests a leading role played by wage setting in Industry.\(^{15}\) We can also see from table 1 that changes in actual earnings in both sectors are strongly correlated with the changes in contractual wages. On the basis of these results, we shall focus in section 4 on the relationship between contractual wages in Industry - which tend to drive the wages and earnings also of other employees in the business sector - and labour market conditions, and investigate it in greater detail. Before that, however, we shall discuss the results concerning productivity a little further in the next section and also look at changes in the terms of trade.

3. Productivity and Terms of Trade.

6. We have seen that earnings (and wages) in both Industry and Trade are not correlated with changes in productivity. In this connection, however, it is advisable to extend the analysis to the business sector as a whole because while wage increases might not match productivity growth in individual sectors, 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. The point is worth assessment. Productivity growth evidently ‘creates 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 wages.\(^{16}\)

Figure 3 shows the moving averages of rates of change in productivity and real earnings in the “approximate” private sector of the economy, obtained by subtracting the aggregates for Public Administration and Education, Health and Other Services

\(^{14}\) The correlation between contractual wages and the unemployment rate in the Trade sector appears slightly higher than in Industry. This is, however, only due to two peaks in real wage changes in Industry in 1986 and 1987 (annual data), that roughly offset one another. If we replace the annual values in 1986 and 1987 with the averages of these two years and then recalculate the correlation between the moving averages of the unemployment rate and real wage changes in Industry, the Pearson coefficient is 0.91 (higher than in the Trade sector).

\(^{15}\) A further element in support of this role is the fact that changes in earnings in the main public sectors of the economy (Education and Health; Public Administration) are not correlated with changes in wages and earnings in Trade and Industry. For a similar interpretation of the leading role of Industry in wage setting, see Brunello, 1986.

\(^{16}\) 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 to 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). 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).
from those for the economy as a whole.\textsuperscript{17} We examine earnings rather than contractual wages because the latter are even less correlated to productivity growth. The Pearson’s correlation coefficient between the moving averages of changes in productivity and changes in real earnings is still rather low ($R=0.5$) albeit a little higher than for Industry and Trade taken separately.\textsuperscript{18} As shown in Figure 3, real earnings increased systematically more than productivity between 1971 and 1977 but less after that with only transitory exceptions in periods characterised by a fall in productivity (1981-82), or in productivity growth (1990-91 and 1997). The pattern followed by productivity and earnings in Industry and Trade is very similar to that observed for the business sector as a whole.

Movements in productivity thus appear to have had no immediate effect on wage trends in Italy during the period examined. The size of their respective rates of change can differ over fairly long periods of time, and they do not necessarily move in the same direction. In particular, the decline in the growth rates of real wages and earnings after 1977 cannot be attributed to parallel changes in productivity growth. In the only period in which the rates of change in productivity and in real earnings move together, between 1978 and 1982, this appears to be due to a third common factor, namely the recession that started in 1980, which determined a fall in industrial production in 1980-82. Even in this phase, however, the decline in wage growth precedes rather than follows the decline in productivity.\textsuperscript{19}

\begin{figure}[h!]
\centering
\includegraphics[width=\textwidth]{figure3.png}
\caption{Figure 3}
\end{figure}

7. Productivity is not, however, the only variable affecting the “margins” for an increase in the real wage, defined as a wage increase that would leave the rate of profits unchanged thanks to technological progress, the other main determinant being the changes in the terms of trade.\textsuperscript{20} As is known, in the case of Italy these have had a particularly important impact on the product to be divided between wages and profits because of the relative weight of imported goods in the household consumption bundle and the high proportion of imports and exports in the gross domestic product (see e.g. Committeri&Palmisani, 1989; Ice, 1992 and 2000). We should therefore ascertain whether the “margins” have had a direct role in determining wage trends when we take into account the combined effect of productivity and terms of trade.

Examination of figure 3 clearly shows a worsening in the terms of trade during the seventies and an improvement during the eighties. As stressed with regard to productivity, however, no close relation is observed between the changes in the terms of trade and those in real earnings. The latter thus increased less than productivity in the years 1982-1992 (17.6 and 26.5 per cent respectively) despite the great improvement in the terms of trade, the index of which rose from 78.1 to 99.8. Conversely, real earnings rose more than productivity during the years 1972-1982 (41.4 and 26.3 per cent, especially in the public sector, changes in productivity measured by national accounting statistics are, by definition, the same thing as changes in earnings. Since employment in the public sector accounts for approximately one third of total employment, considering changes in productivity and wages for the entire economy would introduce a strong bias towards correlation of the two variables.

\textsuperscript{17} Annual data show that the rates of growth of real earnings began to fall in 1978 and 1979, when the rates of growth for productivity were still high. Both productivity and real earnings levels fell in 1980, at the start of a three-year sharp decline in industrial production (-6% in 1980).

\textsuperscript{19} To avoid misunderstandings let us note 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). The actual increase in real wages will, however, depend on the balance of power between capital and labour in any particular historical phase.
respectively) despite the sharp worsening in the terms of trade (their index dropping from 102.6 to 78.1).\textsuperscript{21}

A closer relation between the changes in the terms of trade and those in real earnings emerged during the nineties (the terms of trade dropped from 99.8 to 90.3 between 1992 and 2000 while real earnings rose by only 3.8 per cent), precisely when an increasing gap opened up with respect to labour productivity. But this phenomenon is the exact opposite of what occurred between 1973 and 1976, when a worsening of the terms of trade did not stop the rise in real earnings. While the correlation between productivity and real earnings is low in absolute terms, the correlation between the (moving averages of) changes in the terms of trade and changes in real earnings is thus even negative ($R = -0.6$) between 1972 and 1999.\textsuperscript{22}

These observations do not of course mean that the trends in labour productivity and the terms of trade are irrelevant in explaining the movements in money and real wages.\textsuperscript{23} They only mean that no mechanical or “a priori” link can be claimed between these variables (Levrero, 1999). We will thus stress, for example, that a deterioration in the terms of trade and the balance of trade, which usually led the monetary authorities to raise the rates of interest (De Cecco, 1992; Ginzburg & Simonazzi, 1998), had a very different effect on the wage rate in both the short and the long run depending on the worker’s bargaining position.

4. Labour market conditions

8. As we have seen (table 1 above), while there is no significant correlation between growth of productivity and earnings in Industry and the Business sector as a whole, there is a very high correlation between wages and the unemployment rate in the 1972-1999 period. The R-square is 0.76 and the coefficient of the unemployment rate in the linear regression is -0.98. Measures of unemployment rates for specific groups (male workers, north-central regions) exhibit a somewhat lower correlation with industrial wages.\textsuperscript{24} This very high correlation with the unemployment rate 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 such influence was indirect, at least to some extent, i.e. related to a tendency on the part of unions to regard

\textsuperscript{21} For the seventies and early ’eighties, see also OECD (1983), according to which the “wage gap” given by the actual minus the “warranted” changes in the real wages was very high (equal to 2 per cent a year between 1972 and 1979, and -1.5% between 1979 and 1982). This “warranted” change is determined by the changes in productivity and the effect of the changes in the terms of trade on the real income to be divided between wages and profits.

\textsuperscript{22} The correlation for annual data rather than moving averages is lower (R = -0.2).

\textsuperscript{23} A rise in import prices leads to a rise in the price level with respect to money wages or alternatively to a fall in the rate of profits if a wage-price spiral succeeds in maintaining a given real wage. Moreover, the rising trend in real wages in the major capitalist countries over the last two centuries would have been unattainable without technical innovations.

\textsuperscript{24} The low correlation with the unemployment rate in the northern and central parts of Italy (estimated only for the period 1978-1999 for which data are available) is due to a shift in the relationship between (the moving averages centred in) 1988 and 1989. In the sub-period 1978-1988, the correlation between unemployment in the north and centre and real wage changes is R=0.82, which is still somewhat lower than the correlation with the general unemployment rate for the entire period 1972-99. The correlation with male unemployment is very close to that with total unemployment (R=0.84). We have also measured the correlation between the unemployment rate and the difference between (moving averages of) real wage and productivity growth, which is, however, lower (R=0.64).
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 below).

9. It may be interesting to examine the correlation between the unemployment rate and contractual wages for a longer period and in greater detail to see if and when it changes. Such changes would suggest a search for parallel changes in other circumstances affecting wages.

The analysis of the correlation with contractual wages can be extended to the period 1960-99. The correlation remains high for this longer period (the $R^2$ is 0.66 and the linear regression coefficient on the unemployment rate -0.84), but the scatter diagram in figure 4 shows a shift to the right between the moving averages centred in 1968 and 1969, and another break in the opposite direction between 1978 and 1979, while in 1993-96 there is a fall in real wages that does not appear to be accounted for by a worsening of unemployment.

(INSERIRE FIGURA 4 QUI)

In the remaining part of this section we shall seek to assess the possible influence of changes in other aspects of the labour market (not captured by the changes in unemployment) at those junctures. The following section will examine the broader economic and institutional situation.

The upward shift at the end of the 1960s may have been fostered by the fact that the increase in the general unemployment rate in that period was accompanied by continued growth in industrial employment, which favoured the explosion of workers’ militancy in those years. Indeed, in the relationship between industrial employment and (lagged) real wage growth there is no shift at the end of the 1960s, but there is one in 1963-64 (figure 5), when there was a first outbreak of workers’ militancy, often regarded as the forerunner of the “hot autumn” of 1969 (see footnote 31 below). This suggests that the 1960s, together with favourable labour market conditions, witnessed a broader process of change in industrial relations (possibly triggered by those favourable conditions lasting over a number of years).

(INSERIRE FIGURA 5 QUI)

The 1978-79 downward shift appears in the relationships between the rate of change in real wages on the one hand and each of the labour market variables examined on the other. Again, as for the earlier change in the relationship, this suggests that there were changes taking place in the broader economic and institutional situation in the late 1970s and the early 1980s.

Other aspects in the labour market situation may have also played a role, however, in the changes in industrial relations that took place in those years, such as the number of workers temporarily made redundant under the CIG (see note 13 above) and large firm restructuring. As shown in figure 1 above, the slowdown of real wage growth begins in 1978 and 1979, before the sharp worsening in unemployment and industrial employment (gross of temporary redundancies) occurring after 1981. While the picture does not change significantly if we look at aggregate industrial employment net of

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25 For a critical assessment of the break in the relation between unemployment and money wages in those years see Zenezini, 1989.
26 Unemployment, male unemployment, unemployment in the North and Centre, industrial employment measured in heads and standard labour units.
temporary redundancies, it is somewhat different if we look at what was going on in the large firms, which were at the core of union militancy and action, and where most of the temporary redundancies were concentrated. Employment net of temporary redundancies fell, albeit moderately, in firms with more than 200 employees in the period 1978-1980 (-1.2%), and the sign had already been negative in 1974-1977 (-0.4). Employment began to fall in firms with more than 500 employees in 1974 at rates of about 1.5% per annum until 1977, dropped by 2.6% between 1977 and 1978, and changed very little in the two following years. 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 lower conflict. Changes in employment and redundancies under the CIG 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 below.

As regards the third change mentioned above in the relationship between unemployment and real wage changes, we observe a fall in real wages in the 1990s following the devaluation of the lira in 1992, independently of changes in the unemployment rate. In this connection, it should be noted, however, 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. 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 nineties 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, namely an increase in the number of jobs characterised by limited duration, made possible by changes in legislation favouring greater labour market flexibility, and immigration flows. As regards the first aspect, employees with limited duration contracts accounted for 9% of all employees in Industry and the Private services in 2000. If we also include the free-lance collaborators (most of whom are only formally self-employed, but actually work as subordinates with temporary contracts), we arrive at 18% of all employees in these sectors (Istat, 2002). As regards the second, it is estimated that immigrant workers accounted for about 4.8% of the total labour force (including irregular jobs) in the year 2000. While these changes in the composition of the labour force have a direct effect on average actual labour costs and earnings, it is

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27 Workers made redundant under the CIG peaked in 1978 (as had happened earlier in 1972 and 1975) and again, more markedly, in 1980, while in 1979 there was a strong rise in employment. But employment net of workers made redundant under the CIG also began to fall only in 1981.


29 The unemployment rate figures used are taken from historical series reconstructed by Istat for the period until 1985 and between 1994 and 2000. The annual estimates from the Labour Force Survey are used for the other years. Because of a restrictive change in the definition of unemployment introduced in October 1992, the statistical figures for the unemployment rate tend to be lower than with the previous definition, and increasingly so until 1994, when the difference is around half a percentage point (Istat, 1999).

30 Limited duration contracts (including collaborations) entail lower contributions as a rule and in some cases also lower pay. Immigrant workers tend to be paid less than the Italians (differentials are estimated to be between 6 and 10% after controlling for worker and job characteristics; see Brandolini et al, 2003).
not easy to evaluate their impact on union bargaining and contractual wages, particularly in Industry and Trade. Combined with high unemployment rates, the particular high incidence of temporary jobs among the youngest segment of the labour force appears likely to have contributed to inhibiting their potential for conflict. On the other hand, a union report suggests that the availability of immigrant labour during the 1990s affected contractual wages negatively in Agriculture and, to a certain extent, also Construction but not other sectors (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.

The latter fall appears to be a new phenomenon (there had been no decrease in the contractual wages of production workers since the 1950s at least), and one that is difficult to explain without reference not only to the worsening of labour market conditions but also to the reform that had just taken place in wage setting, and the general economic and political situation.

10. To sum up, we observe two shifts in the relationship between (moving averages of) real wages and the unemployment rate, the first between 1968 and 1969 and the second between 1978 and 1979, as well as great vulnerability of real wages to exogenous price changes in the 1990s. Labour market conditions not captured by changes in the unemployment rate appear to have contributed triggering the changes in all these cases, thus confirming the influence of the labour market situation on wage trends. The first break appears to have been favoured by the continuing growth of industrial employment in those years, the second by negative trends in employment in large firms, and the fall in real wages after 1992 by a fall in employment and activity rates. Both in 1977-79 and in 1992-95, however, broader changes in industrial relations and in the general institutional and economic set-up were also taking place, which will be the main focus of the next section.

5. Competitiveness, Exchange Rate Regimes and the Influence of Social and Political Factors

11. Let us look first at the social and political situation, the pressure of international competition, and economic policy decisions around the years 1978-1979.31

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 in the previous year, suggest that the roots of the change in the wage trend must be sought before 1979. In particular, it appears possible to trace them back to the period of so-called “consensual stabilisation” (Salvati, 2000) in 1977-1979, i.e. to the years that saw the end of the phase opened up by “hot autumn” of 1969 and 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 wage claims restraint. 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

31 For the break in 1968 and 1969, see Barkin (1979), Salvati (1985) and Phelps Brown (1975). This seems to arise from the low unemployment rates during the “golden age” of capitalism and the associated changes in the social and political climate in the sixties (for instance, the new experience of “centre-left” and the entry of a new generation of workers into the labour market).
basket of the cost of living index). Furthermore, the Congress of the major workers’ organisation (the C.G.I.L) 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 C.G.I.L. (and accepted in 1978 by all the three major trade unions with the so-called EUR strategy) 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 Communist Party’s full participation in government after its electoral peak in 1975-1976, or the belief that wage moderation would lead to an increase in the amount of employment - 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. On the other, by reducing conflicts at the workplace level, the EUR 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 (Barca & Magnani, 1989; Heimler, 1986; Tronti, 1989), 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 & 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.

12. It can be said that this wasting away of the workers’ bargaining power during the phase of “consensual stabilisation” (which shows some analogies with other phases of Italian history) facilitated adherence to the French-German architecture of the European Monetary System (EMS), which helped in turn to place workers’ organisation under further pressure.

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32 In a difficult political climate, the Communist Party put pressure on the C.G.I.L between 1977 and the first part of 1979 to accept wage moderation and gave its “external” backing to Andreotti’s Government. In turn, the C.G.I.L. 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 the workers (e.g. C.G.I.L., 1981, pp. 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 laissez-faire tendencies influencing the policies of the workers’ organisations. On the other hand, the trade unions agreed with the need for a ceiling to the public deficit and for a wage policy “coherent with the aim of full employment” (C.G.I.L., 1981, pp. 183 and 186-7).

33 On the experience of the other countries, see Flanagan, Soskice & Ulman, 1983; Tarantelli & Wilke, 1981. It could be argued that the wage restraint brought about an increase in employment above that in other countries thanks to the rise in exports. This rise was, however, partly offset by a restrictive domestic policy (de Vivo & Pivetti, 1980, pp. 13-14) and the rate of unemployment rose from 6.7 per cent in 1976 to 8 per cent in 1979. 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.

34 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 (C.G.I.L., C.I.S.L and U.I.L.) amongst skilled workers, white collar workers and public sector employees (whose real wages had fallen in the period 1975-1977). The public sector thus saw a wave of strikes and the phenomenon of “autonomous” trade unions in 1978.

35 As the Communist Party had requested that the timing of Italy’s entry into the EMS be negotiated, the immediate entry also put an end to the “National Solidarity” experience and to any prospect of
First, the worsening in the real exchange rates in terms of export prices (see figure 6) and the second ‘oil shock’ in 1979 contributed to a considerable extent to the fall in exports and industrial production in 1980. This fall and the new exchange rates regime set up in 1979 were interpreted by Confindustria as calling for a sharp change in industrial relations. Its first significant manifestation was in Fiat’s new industrial policy and anti-union attitude (see Romiti & Pansa, 1988; Lama, 1987) that 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 constituted a turning-point in industrial relations and highlighted the above-mentioned difficulties of the workers’ organisation, the membership of the metalworking trade unions fell sharply, as did the numbers of working hours lost through strikes (Istat, 2002).

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 per cent points higher than Germany in 1978 and 20 per cent in 1979). In line with suggestions put forward in OECD documents, 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 1981-1983 and a standstill in real GDP in the period 1980-1983. 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 (Morcaldo, 1992). 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 7).

Other measures were also introduced, however, 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 1982-1984). Public subsidies to the firms were reduced, and recourse to the tools of temporary redundancies under the CIG (financed in Italy from public funds) and early retirement was facilitated in order to increase labour productivity. More importantly, an agreement reducing wage-Communist Party’s full participation in government as political compensation for the wage moderation of the previous years.


37 It should be noted that, as regards capital movements, they are driven both by the differences between countries in the money rates of interest and by the expected rates of exchange, and the latter are influenced by price trends.

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

39 The character of fiscal policies was instead not restrictive in 1979-1981 due among other things to the increase in family subsidies and the salaries of public employees. As pointed out by Ginzburg (1987), together with the increase in investment until 1980, the rise in public expenditures (designed to guarantee political support for the new government) led to an increase in the gross domestic product in 1979-1980 and to a deficit in the balance of payments.
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 C.G.I.L., thus causing a deep rift in the trade unions movement.

The referendum called by the C.G.I.L and the Communist Party against that agreement was defeated in 1985, thus ensuring the reduced sensitivity of money wages to prices over the following years. Moreover, while anti-union practices and individual benefits and premiums became widespread, the divisions among the trade unions persisted (as in the case of the “separate agreement” signed in 1987 by Fim-Cisl and Uilm with Fiat). As a result of this situation and the rise in unemployment, high real rates of interest and a change of 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.

13. As regards the period 1992-1996 (which marked another change in the trend of real wages as pointed out in section 1), it can be said that the fall in real wages during these years reflects the worsening of the workers’ bargaining position during the 'eighties as a result of the social and political factors mentioned above as well as an increase in the average rate of unemployment (which rose to 10 per cent). Other factors also appear to be relevant, however.

The 1992 devaluation of the lira occurred after the fixed exchange rate regime in 1988-1992 (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 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 (see Vignocchi & De Novellis, 1998), arising both from a recovery of money wages in 1989-1991 (fostered by a cyclical increase in industrial employment) and from a rise in productivity that was lower than in other countries (see Table 2). 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 after the full liberalisation of capital movements in 1988 in order to guarantee a surplus in the overall balance of payments. The real exchange rates thus worsened sharply (in terms both of unit labour costs and of export prices) and the balance of trade became negative in 1987-1991. Manufacturing firms were thus under increasing pressure not to rise their prices and the situation led to an increase in the wage-income share of industrial value added and Confindustria’s unilateral suspension of the price-indexation clauses.

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). In the meantime, the unit labour cost decreased even in terms of the national currency and more than in other countries. The real exchange rates thus improved sharply, albeit more in terms of unit

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\[\text{\textsuperscript{40}}\text{This is reflected by the emergence of a ‘wage drift’ in industry between 1983 and 1988 and its disappearance in the 1990s, when the trade unions were already weakened.}\]

\[\text{\textsuperscript{41}}\text{Conversely, although labour costs (expressed in national currency) increased in Italy more than other countries during the first part of the 1980s (see Faustini, 1989), the gap in terms of unit labour costs tended to decrease thanks to Italy’s greater rise in labour productivity. The worsening in Italy’s competitive position grew instead in the period 1988-1992, and not as a result of price factors alone (see Barca & Visco, 1992; and Vona, 1989).}\]
labour cost rate than of export prices. Firms used the currency depreciation to some extent to increase their profit margins (see Banca d’Italia, 1999).

It can be stated that, as in other periods (see e.g. Graziani & Meloni, 1980), currency depreciation and deflationary policies were the tools used to boost profits and improve the competitiveness of Italian industry. Unlike the period 1971-1976, 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 1992-1994, and money wages rose less than prices.

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

Summary of conclusions and final remarks

14. We shall now summarise the main findings emerging from our work and then comment briefly on some of these and indicate some open questions.

The main points emerging from the previous analysis can be listed as follows.

i) Industry appears to be the leading sector in wage determination. Over the entire period 1970-2000, national contracts in industry (more than those in other private sectors) tend to reflect general and sector specific labour market conditions and determine the changes in real contractual wages also in the other private sectors of the economy. In turn, changes in actual real earnings in industry and in the other sectors tend to follow closely changes in wages determined by national contracts.

ii) The trends of contractual real wages and actual real earnings in the private sector of the economy as a whole as well as the Industry and Trade sectors are not generally correlated to changes in productivity and terms of trade. Real earnings tend to grow

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42 Between 1971 and 1976 the fall in the lira’s nominal exchange rate 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 real wage growth, however, owing to the ever-increasing strength and militancy of the trade unions and to price indexation.

43 It should be noted that no increase in employment or in social expenditures 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.

44 It is thus hardly surprising that the hourly labour cost in Italy was lower than in other industrialised countries in the period 1995-2000 (see for instance Eurostat, 1996 and 2001; Sparks, Bikor & Moglia, 2001), and this even though the real gross domestic product per employed person was only slightly lower than in the United States and greater than in the other major industrialised countries (see U.S. Department of Labor, 2000).
more than productivity in *Industry, Trade* and the private sector of the economy in general until 1977, after which the reverse is true.

iii) Changes in contractual wages in *Industry* (which drive changes in actual earnings in that and other sectors) are correlated with the rates of change in industrial employment and, very strongly, with the unemployment rate (all the correlations refer to 3-years moving averages of the variables).

iv) While the correlation between changes in real wages and the unemployment level is very high even for the period 1960-2000 as a whole, the relationship undergoes some changes over time that reflect changes in other circumstances affecting workers’ relative bargaining strength. Higher unemployment rates are noted between 1969 and 1977 but also higher wage increases, and the correlation between the two becomes weaker. After that there is a downward shift in the relation and real wages increase less than productivity on average. This downward change in wage trends after 1977 anticipates the dramatic decline in industrial production and industrial employment 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 that downward change also reflects the increasing pressures to reduce inflation generated by the exchange rate agreements in Europe and the rise in US interest rates. Finally, in the 1990s we observe an increased cyclical variability of real wage growth and an unprecedented (in the post-war period) vulnerability of real wages to the exogenous increase in prices after the lira devaluation in 1992, which led to their fall. This must be related to the new wage-setting procedures agreed upon in the same year, combined with the unions’ inability to ensure the real development of firm-level bargaining.

v) Real earnings net of taxes grew significantly less than gross earnings in 1976-78 due to fiscal drag and fell between 1979 and 1983 as a result of increases in income tax and employees contributions. They fell again, more sharply than gross earnings, in the years immediately following the 1992 devaluation. The general worsening of the workers’ relative bargaining position thus emerges even more sharply when net wages are considered.

15. Some of the above points may deserve some comment 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 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 the tendency toward a fairly stable yearly growth rate of wages. In this respect, the Italian experience in the nineties may suggest the appearance of a new scenario - or perhaps a return to an older one - in which real wages may decrease during negative phases of the economic cycle or as a consequence of changes in the price level, and more generally in which real wage growth appears very sensitive to cyclical changes in employment. Further investigation might establish whether this pattern is common to other industrialised economies.

- **A real wage Phillips curve?** The scatter diagram in *figure 4* above is suggestive of 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 (particularly evident in the diagram for the 1972-99 period), 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, is susceptible of immediate interpretation in terms of the bargaining position of the parties involved (Rothschild, 1993, pp 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 have affected distribution, despite the ability of employers to respond to money wage increases with price inflation, at least in some phases. 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 depend in fact on the broader institutional and economic setting and are bound to change when changes take place in the latter, as has happened at different times in Italy. 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 real wage growth to be independent of the previous path of these and other relevant variables. 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.

- 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 e.g. Phelps Brown, 1968, and for critical discussion Levrero, 1999). 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 by 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.

45 See Stirati, 2001, for a more general perspective.
46 In actual fact, it is very common in the literature to describe ‘shifts’ in some functional relations (for example the traditional Phillips curve, or the pseudo demand and supply curves), which remain largely unexplained. Our position can be regarded as assuming that ‘shifts’ in empirical relations are only to be expected, since wages are affected by changes in the institutional set-up, but the causes of the ‘shifts’ should be explained as much as possible and not left outside the realm of economic analysis.
47 See Lucifora & Origo, 1999, who provide also a survey of previous results.
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Romiti C. & Pansa G., Questi anni alla Fiat, Rizzoli, Milano, 1988
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Figure 1: Annual rates of change of real hourly wages of production workers in Trade and Industry

Figure 2: Real gross and net earnings in Industry (1972=100)

Figure 3: Rates of change of productivity*, real wages* and terms of trade - moving averages 1972-1999
*In the business sector

Figure 4: Unemployment and rate of growth of real wages in Industry - 1960-1999 (moving averages)

Figure 5: Employees and real wages: moving averages of annual rates of change in industry 1957-69, 1972-99 (one year lagged wages)
Figure 6: The real exchange rates in terms of unit labour costs and export prices: 1979-1991

Source: IMF

Figure 7: Unemployment rates* and annual rates of change in industrial and total Employees

sources: Istat, Labour force surveys (unemployment) & National accounts (employees)

*since 1993 the new definition of unemployments gives rise to a lower estimated unemployment (circa-0.4 in 1995)
**TABLE 1**

Correlation coefficients between moving averages* of the annual rates of change

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<td>actual real earnings and value added per Slu</td>
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<td>actual real earnings per Slu** and total employment*** (one year lagged earnings)</td>
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<td>real contractual hourly wages° and industrial employment (one year lagged earnings)</td>
<td>0.76</td>
<td>0.78</td>
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<td>real contractual hourly wages and unemployment rate</td>
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<td>actual real earnings and value added per Slu</td>
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<td>actual real earnings per Slu in the trade sector and contractual real hourly wages in industry</td>
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*(interval 3)
** Standard labour units
*** employment is always employees only, measured in heads
° wages always refer to production workers only
**TABLE 2: RATES OF CHANGES IN HOURLY PRODUCTIVITY, HOURLY LABOUR COSTS, REAL EXCHANGES RATES IN MANUFACTURING IN THE MAIN INDUSTRIALISED COUNTRIES**

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<td><strong>Productivity per manhour</strong></td>
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<tr>
<td>USA</td>
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<td>3.5</td>
<td>2.4</td>
<td>3.3</td>
<td>4.7</td>
</tr>
<tr>
<td>FRA</td>
<td>3.7</td>
<td>3.0</td>
<td>3.4</td>
<td>4.0</td>
<td>4.6</td>
</tr>
<tr>
<td>GER</td>
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<td>2.1</td>
<td>2.1</td>
<td>3.3</td>
<td>2.6</td>
</tr>
<tr>
<td>ITA</td>
<td>2.2</td>
<td>3.5</td>
<td>1.9</td>
<td>2.4</td>
<td>0.9</td>
</tr>
<tr>
<td>UK</td>
<td>3.6</td>
<td>4.4</td>
<td>4.6</td>
<td>3.3</td>
<td>2.4</td>
</tr>
<tr>
<td><strong>Hourly Labour Costs</strong></td>
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<td></td>
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<tr>
<td>USA</td>
<td>4.6</td>
<td>7.2</td>
<td>3.9</td>
<td>3.5</td>
<td>4.0</td>
</tr>
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<td>4.5</td>
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<td>6.0</td>
<td>5.0</td>
<td>6.4</td>
<td>2.6</td>
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<td>6.8</td>
<td>4.9</td>
<td>2.8</td>
</tr>
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<td>12.2</td>
<td>9.4</td>
<td>5.4</td>
<td>4.6</td>
</tr>
<tr>
<td><strong>Unit Labour Cost in National Currency</strong></td>
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<tr>
<td>USA</td>
<td>1.2</td>
<td>3.6</td>
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*Source: Bureau of Labor Statistics, United States*