

Work as Key to the Social Question

The Great Social and Economic Transformations and the Subjective Dimension of Work



Wage Inequalities, Low Pay, and Social Exclusion: The Role of Labour Market Institutions

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Abstract

After almost twenty years, since its first appearance, it is interesting to try and evaluate the indications contained in the “Laborem Exercens” in the light of the experience accumulated by most industrialised countries. We investigate whether both the unions and the “indirect employer” have been able to pursue and achieve those aims set out in the Encyclical. In this context, the paper attempts a first (partial) evaluation focusing on those issues that, in the Encyclical, were associated to the existence of a “fair remuneration”, human solidarity, as well as the fight against all kinds of poverty.

Attention will be devoted, as indicated in the Encyclical to the analysis of wage inequality – i.e., the presence of significant differences in the wages paid to workers.

1. Introduction

With the Encyclical “Laborem Exercens” Pope John Paul II celebrated the ninetieth anniversary of the Encyclical “Rerum Novarum” on the eve of new developments in technological, economic and political conditions which, according to many experts, will influence the world of work and production no less than the industrial revolution of the last century (L.E. 1). According to Pope John Paul II words, *«it is not for the Church to analyse scientifically the consequences that these changes may have on human society. But the Church considers it her task always to call attention to the dignity and rights of those who work, to condemn situations in which that dignity and those rights are violated and to help to guide the above-mentioned changes so as to ensure authentic progress by man and society»* (L.E., 1)

Although economists have long acknowledged that probably the main aim of economic science is to provide a rigorous, deep and up to date understanding of human behaviour in economic activities - looking, in particular, into the effects of these actions on the functioning of markets -; nevertheless, it has also become clear that the evaluation of the consequences of economic rules on "society" and "human beings" cannot do without referring to those values and principles that can only be found outside the field of economics. The latter is particularly true of those issues which are usually addressed by labour economists such as wage determination, inequalities, solidarity, as well as the role of unions. The importance of these themes is reinforced by the fact that they are explicitly addressed also in the Encyclical "Laborem Exercens". Indeed, ninety years after the publication of the "Rerum Novarum", some key questions such as "*fair remuneration*" (L.E. 19) and "*relevance of unions*" (L.E. 20) appears to be still central.

The Encyclical introduces and discusses the concept of wage in society: «*Wages [...] are still a practical means whereby the vast majority of people can have access to those goods which are intended for common use [...] hence, in every case, a fair wage is the concrete means of verifying the justice of the whole socio-economic system, and, in any case, of checking that it is functioning justly*». Implicitly, the Encyclical also addresses the issue of "wage differentials" by arguing that, «*While one can say that, by reason of its subject, work is one single thing [...] yet when one takes into consideration its objective directions one is forced to admit that there exist many works, many different sorts of work*» (L.E., 8). One may like to push the concept forward by adding, "[...] each one rewarded differently". The existence of wage disparities and increasing inequalities, when not justified by differences in labour productivity or labour quality, is in contrast with the achievement of social justice and for this reason «*[...] there is a need for ever new movements of solidarity of the workers and with the workers*» (L.E., 8). The Church is firmly committed to the fight against poverty, «*[...] and the "poor" appear ... because a low value is put on work and the rights that flow from it, especially the right to a fair wage...*» (L.E.,8).

As economists we should be interested by both 'efficiency' as well as 'equity' considerations, that is how to reconcile the (allocative) role of the market mechanism with a "just" (equitable) distribution of resources. The Encyclical addresses the issue by discussing some of the institutions which potentially could enforce fairness in the functioning of the labour market. In other words, which are the institutions that the Encyclical consider as relevant to achieve solidarity and a mutual recognition of the idea of a "fair remuneration"? Essentially two appear as being the most relevant: the "unions", on the one side, and those "labour market policies" directed to protect the ethical value of work, on the other. So both an organisation of workers acting collectively and the intervention of the State as regulator (or employer), in principle are seen as capable of granting a higher degree of fairness in the labour market. It is remarkable that since the "Rerum Novarum", unions are still referred to as, «*[...]...an indispensable element of social lifea mouthpiece for the struggle for social justice..... People unite to secure their rights, their union remains a construction factor of social order and solidarity, and it is impossible to ignore it*» (L.E., 20).

Alternatively, the role of the State is referred to, in the "Laborem Exercens", as the "indirect employer". That is, when the State is not directly involved as employer, a set of institutions can help governing the process of definition and implementation of labour market policies,

which can be seen as ethically “fair”. Among those *in primis* the State, as regulator, should guarantee and protect workers in the labour market – as components of the “human society” - from any excess and risks deriving from the working of the “industrial society”. Labour market policies, social ethic and labour laws can be considered as the set of tools that can be used to face these problems (Mengoni, 1983).

After almost twenty years, since its first appearance, it could be interesting to try and evaluate the indications contained in the “*Laborem Exercens*” in the light of the experience accumulated. In particular, it could be investigated whether both the unions and the “indirect employer” have been able to pursue and achieve those aims set out in the Encyclical. In this context, this paper will attempt a first (partial) evaluation focusing on those issues that, in the Encyclical, were associated to the existence of a “fair remuneration”, human solidarity, as well as the fight against all kinds of poverty.

Attention will be devoted, as indicated in the Encyclical to the analysis of wage inequality – i.e. the presence of significant differences in the wages paid to workers. In principle there is nothing wrong in paying different wages to different workers, however the existence of large differences - particularly in the lower end of the distribution - are opposite to the principle of solidarity which should permeate the functioning of labour market. Furthermore, the existence of (too) low wages for those who find themselves at the bottom of social hierarchy might not allow a decent living standard to the worker and his family and eventually lead to poverty. In this context, even industrialised countries, might experience both the presence of low-paid workers as well as increasing poverty.

In this paper, we shall investigate what has been the role of unions and of the “indirect employer” in facing the problem of low-pay and poverty. We shall ask whether after twenty years from the “*Laborem Exercens*” these two institutions have been effective in promoting solidarity and reducing wage inequality among workers.

In recent decades most industrialised countries have experienced significant increases in the dispersion of earnings. The increase in earnings inequality has affected, in terms of social exclusion and poverty, those individuals located at the bottom end of the earnings distribution. In particular, the low-paid, the low-skilled and less protected groups generally, such as women, young workers, and older men, appear to have borne most of the burden, in terms of lower earnings (OECD, 1996). The degree of wage inequality and the employment rate (the proportion of the working age population who are in employment) are important indicators of the performance of an economy. On the one hand, inequality in the labour market typically translates into significant disparities in living standards and often also into increasing poverty among individuals. On the other hand, labour market inequality affects the structure of economic incentives that individuals face and influences social cohesion and worker solidarity. The overall pattern that has emerged over the 1990s shows substantial differences across countries in the extent of earnings inequality and in labour market outcomes more generally.

Among the leading explanations offered for these trends, emphasis has been placed on demographic changes, adverse shifts in supply and demand for products and skills, skill-

biased technological change, increased globalisation of trade and, also, on new forms of work organisation (OECD, 1996; Gottschalk and Smeeding, 1997). Alternative explanations have emphasised the institutional side, arguing that trade union activity, practices of collective bargaining and labour market regulations may have played a more relevant role (Blau and Kahn, 1996; Fortin and Lemieux, 1997). Institutional pay setting may alter wage dispersion and the incidence of low pay in various ways. First, legislation on wages may reduce dispersion by gender and by skill. Second, pay standardisation policies, by reducing management discretion, may compress pay differences within firms. Third, industry-wide bargaining and mandatory extension of the terms set in collective agreements may decrease wage differentials across establishments and reduce the mark-up of union over non-union wages. Fourth, when the structure of bargaining is more centralised and negotiations are better co-ordinated wage differentials between industries may be reduced.

It has been widely noted that those countries which have experienced the largest increases in inequalities have also been those with the most deregulated and decentralised labour markets. This seems to suggest that centralised wage-setting, institutional constraints and widespread welfare safety nets may have had a significant role in shaping the distribution of earnings across countries. Heavily regulated labour markets and highly centralised wage setting mechanisms are characterised by more rigid wage structures and greater inertia of wages in the face of economic shocks and business cycle fluctuations. Moreover, in highly unionised labour markets, trade unions have traditionally pursued egalitarian wage policies to enhance worker solidarity and to protect those at the lower end of the earnings distribution. This has been particularly the case in those countries without a statutory minimum wage (Bjorklund and Freeman, 1996; Blanchflower and Freeman, 1992).

We investigate the role that various institutional features may play in shaping the distribution of wages across a number of OECD countries. In general there is some scepticism among economists about the actual role that institutions play in the functioning of labour markets, on the grounds that the institutional setting is merely a superstructure through which market forces continue to operate. In this study attention will focus on explicit and quantifiable measures of institutional forces and the analysis of their impact. Restricting the scope in this way will avoid excessive arbitrariness in defining the relevant “institutions” for pay setting, or interpreting their impact simply as a residual for those features that cannot be otherwise explained. In particular, we shall focus on three specific features: the effects of trade unions, the structure of collective bargaining and the existence of wage regulation. While by no means the only labour market institutions relevant for wage determination these certainly play a central role in explaining differences in the structure and dynamics of wages across countries (Freeman, 1996). This way of proceeding obviously leaves aside the role of social norms and cultural factors which, though more difficult to measure, are likely also to be important in explaining cross-country differences.

The paper is organised as follows. First, in section 2, we review some of the institutional features that characterise the functioning of the labour market and are considered relevant for wage inequality and the incidence of low wage employment. These fall into two main categories: unionism and collective bargaining practices, and legal regulation of wages. Next, we provide an overview of the stylised facts on low wage labour markets across a

number of OECD countries (section 3). In section 4 we investigate the effects that labour market institutions may have on both the incidence of low wage employment and the distribution of earnings. The last section contains some concluding remarks and discusses some policy implications.

2. Labour Market Institutions and Wage Regulation: An Overview of International Differences

Institutional wage-setting may involve direct government legislation on a number of pay issues, such as a minimum wage, legislation against discrimination, or the mandatory extension of collective agreements. Or it may operate via the ‘voluntarist’ route, through the activities of trade unions and collective bargaining. While it is largely undisputed that the presence of wage regulation and collective bargaining affect wage formation, the magnitude and direction of the impact that institutions have on the functioning of labour markets and the distribution of wages depends on how far the constraints which they impose are binding. Many institutional arrangements are directed towards a specific portion of the wage distribution or to selected groups of individuals, making it likely that the effects will be concentrated on those. [1] To the extent that the institutional constraint is binding the wage outcome will differ from that resulting from the operation of market forces. It may be argued that as a general tendency institutionalised wage setting, by being targeted at the “average” worker or firm, has the effect of reducing differences across groups. Market forces, on the other hand, by operating at the “margin” (i.e. through the “marginal” worker or firm) tend to give rise to a wider dispersion in wage levels. [2] Moreover, we might expect market forces and institutional arrangements to interact in different ways in different parts of the earnings distribution, with a greater impact on the top or the bottom of the earnings hierarchy, depending on the type of institutions at work.

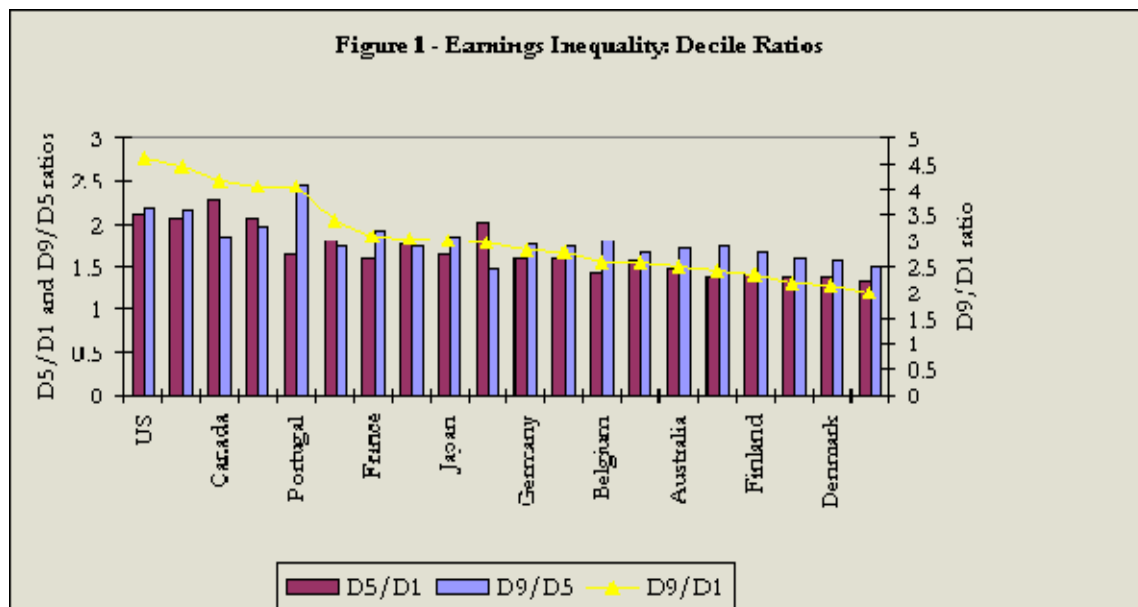


Figure 1 reports a range of indicators of earnings inequality across OECD countries [3]. We have ranked countries according to overall inequality as measured by the ratio of earnings at the ninth decile to the bottom decile (i.e. the D9/D1 ratio). We also report the relative inequality in the top and bottom halves of the distribution (i.e. D9/D5 and D5/D1 ratios). First, significant differences in earnings inequality emerge across countries; in the US, with the most unequal distribution, the D9/D1 ratio is close to 4.5 while in Norway it is less than 2. Second, in countries where overall inequality is relatively low (i.e. those located in the right-hand end in figure 1) it appears that earnings dispersion is particularly compressed at the bottom end of the distribution, more so than at the top. Conversely, those countries where earnings inequality is relatively high tend to have a wider dispersion at both ends of the distribution, often particularly at the top end.

The differences in earnings inequality observed across countries are reflected in the existence of similar disparities in the incidence of low pay; those countries characterised by wider dispersion in the bottom part of the earnings distribution also have a larger share of low paid individuals. The remainder of the paper is devoted to the analysis of the factors that might influence the pattern of inequality across countries and, in particular, their effects on the lower part of the earnings distribution and the incidence of low wage employment. Following a widely used criterion, the definition of low wage employment will be those workers whose earnings fall below two-thirds of median earnings. [4]

2.1. Collective bargaining and unionisation

The extent of unionisation and the practice of collective bargaining are important institutional features in wage determination. As shown in table 1 (columns 1 to 3) different patterns of union presence and activity characterise OECD economies. [5] Moreover, during

the 1980s and 1990s, a number of changes occurred in wage setting institutions in several industrialised countries, notably declining unionisation and progressive decentralisation of bargaining. The interaction of wage regulation and union power may therefore have different implications for institutional wage setting across countries.

Table 1 – Union presence and wage regulations in OECD countries

country	unionisation indicators			wage regulations				
	union density	coverage	corporatism	extension of collective agreements*		minimum wage systems (MW)		Replacement ratio
	(%)	(%)	index	description	index	description	Kaitz Index	index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Austria	46.2	98	19	<i>almost all agreements</i>	16	<i>Nationally negot. MW^(*)</i>	0.62	50
Belgium	51.2	90	14	<i>almost all agreements</i>	15	<i>negotiated monthly MW</i>	0.60	60
Denmark	71.4	69	12	<i>by centralisation</i>	17	<i>nationally negot. MW^(*)</i>	0.64	90
Finland	72	95	16	<i>frequent (minister ext.)</i>	12	<i>nationally negot. MW^(*)</i>	0.52	63
France	9.8	95	7	<i>very frequent</i>	14	<i>statutory hourly MW</i>	0.50	57
Germany	32.9	92	17	<i>frequent (small firm)</i>	12	<i>negotiated MW (by industries)</i>	0.55	63
Ireland	49.7	60	7	<i>limited to min-wages</i>	7	<i>statutory MW (only selected industries)</i>	0.55	37
Italy	38.8	85	15	<i>almost all agreements (by ind.)</i>	16	<i>negotiated monthly MW (by industries)</i>	0.71	20
Netherlands	25.5	81	7	<i>frequent (minister ext.)</i>	10	<i>statutory weekly MW</i>	0.55	70
Norway	56	74	18	<i>by centralisation</i>	17	<i>nationally negot. MW^(*)</i>	0.64	65
Portugal	31.8	71	7	<i>frequent (minister ext.)</i>	16	<i>statutory monthly MW</i>	0.45	65
Spain	11	78	7	<i>frequent by industry</i>	15	<i>statutory monthly MW</i>	0.32	70
Sweden	82.5	89	7	<i>by centralisation</i>	17	<i>nationally negot. MW^(*)</i>	0.52	80
Switzerland	26.6	50	12	<i>frequent (minister ext.)</i>	11	-----	0.50	70
United Kingdom	39.1	47	4	<i>no automatic ext.</i>	3	<i>statutory MW (before 1993, selected industries)</i>	0.40	38

Japan	25.4	21	6	<i>rare (company agreem.)</i>	4	<i>statutory daily MW</i>	0.53	59
Australia	40.4	80	5	<i>limited to min-wages</i>	8	<i>negotiated MW</i>	0.45	50
New Zealand	44.8	31	1	<i>limited cases (minister ext.)</i>	10	<i>statutory weekly MW</i>	0.46	60
Canada	35.8	36	1	<i>limited cases</i>	5	<i>statutory hourly MW</i>	0.35	36
United States	15.6	18	1	<i>no automatic ext.</i>	1	<i>statutory hourly MW</i>	0.39	30

Source: OECD, 1996; Nickell, 1997

(*) Collective agreements covering most of the labour force

It has been argued that in decentralised systems with weak unions, such as the US, the UK and New Zealand, a decline in union density produces widespread effects on institutional wage setting, inequality and the incidence of low pay. By contrast, in more regulated systems with industry-wide bargaining and high union coverage, such as the majority of European countries, the effect of declining unionisation barely has an impact. The main explanation for these different outcomes resides in the institutional channels through which unions can influence wage formation: essentially mandatory extension provisions and centralisation of bargaining (Freeman, 1993; Card, 1998; DiNardo *et al.*, 1996).

Much of the empirical evidence concerning the impact of unions on relative wages suggests that trade unionism can significantly alter the distribution of wages. One route is by raising the pay levels of those workers covered by collective agreements relative to non-covered workers (Lewis, 1986) [6]. A second is through "standard rate" policies aimed at reducing inequality among individual workers. In particular, collective agreements seek to fix both the number of job categories in which workers are placed and the rate of pay for each job, thus limiting the ability of the firm to remunerate workers differently according to more individualised criteria. [7]

Some basic factors can be put forward to explain union preferences for a less dispersed wage structure among similar plants and within the organised sector, although their ability to achieve this will necessarily vary with market conditions and the institutional setting. First, worker solidarity requires a relatively uniform wage distribution, as the perception of marked differences in pay may reduce consensus among workers and therefore the strength of the union's "collective voice" (Freeman, 1980a,b). Hence unions tend to resist any decline in low pay relative to the average. Second, given the potential arbitrariness in measuring individual productivity, subject to supervisor evaluation, workers, being risk-averse, will generally prefer narrower wage distributions. Finally, the union can be regarded as a political organisation whose consensus depends on median preference. This implies that when the median wage is less than the mean wage a majority of workers will support a wage policy favouring the lower paid, thus further reducing dispersion and the incidence of low pay (Freeman and Medoff, 1984; Hirsch and Addison, 1986). In this respect, the effects that union presence is likely to produce on the distribution of wages, although indeterminate *a*

priori, in practice tends to result in a marked compression of wage differentials and a lower incidence of low paid employment [8] (Blau and Kahn, 1996). This general proposition will be analysed in greater detail in section 3.

2.2. Wage Regulation

The labour market regulations most relevant for influencing the distribution of wages are probably statutory minimum wages, anti-discrimination legislation and the mandatory extension of collective agreements (see table 1). These are not necessarily mutually exclusive, since in some countries wage minima are set by statute after consultation with the unions, while in other cases various aspects of industrial relations interact with legislation in a rather complex way.

Minimum wage legislation, by setting an explicit threshold for the lowest wage rate paid (hourly, daily or monthly) impacts on the bottom end of the earnings distribution and tends to reduce wage dispersion (see column (6) in table 1). Unemployment benefits also provide a floor to low pay. In both cases, the actual effect on the distribution depends on the level of the minimum relative to the median (average) wage – the so-called Kaitz index – or the replacement ratio, and on the number of workers covered (see columns (7) and (8) in table 1). These may differ significantly across countries. Some systems do not have any statutory intervention in setting a minimum wage. Where it is present the minimum may lose its “bite” over time, if it is allowed to decrease both relative to average wages and in terms of coverage of the low paid. A number of studies have found the abolition or reduction of statutory minimum wages as the main determinant of widening earnings inequality, particularly in the lower part of the distribution, as well as being responsible for the increase in low wage employment (DiNardo *et al.*, 1996; Fortin and Lemieux, 1997; Teulings, 1998; Bardone *et al.*, 1998). Obvious examples are the decline (in real terms) of the Federal minimum wage in the United States over the 1980s and the abolition of Wages Councils in the United Kingdom (Machin and Manning, 1994). Conversely, in France where the minimum wage has remained relatively constant no big changes in low pay employment have been observed.

Anti-discrimination legislation and fair employment practices, by setting common standards of pay across otherwise different group of workers, have the effect of reducing overall pay dispersion. [9] The actual impact on low pay, however, will depend on the groups of workers who are affected; if the groups involved are located in the bottom part of the wage distribution, the legislation will move these workers upwards. With specific reference to female employment, it can be noted that despite the fact that women are usually over-represented in low wage jobs and show a higher propensity to experience long spells of low wage employment, in most OECD economies women’s pay has risen relative to that of men in the last 20 years. Moreover, the effects of anti-discrimination legislation have to be evaluated against the contemporaneous massive increase in the participation of women in the labour market. Without institutional constraint this increase could have pushed wage levels downwards in the bottom sections of the earnings distribution, further concentrating

low pay among women (Freeman, 1996; Joshi, 1998).

Finally, the mandatory extension of collective agreement provisions can have pervasive effects in reducing wage differentials among covered workers, irrespective of their union affiliation. In countries where such provisions exist, the effect of negotiated (minimum) wages are automatically (or *de facto*) extended to all workers, granting a high coverage to union bargaining activity (see columns (4) and (5) in table 1). The United States and the United Kingdom, on the other hand, provide an interesting example of the absence of any form of mandatory extension. This appears to have been associated with wider wage differentials across groups of workers and firms, as well as with larger differences in the incidence of low pay. Conversely, in Continental Europe, the various forms of extension provisions in conjunction with higher union coverage (see below) have had strong equalising effects, compressing the earnings distribution at the bottom and maintaining a low incidence of low paid jobs (Dell'Aringa, *et al.*, 1994; OECD, 1997) .

3. Low Paid Employment and the Institutional Setting: Some Stylised Facts

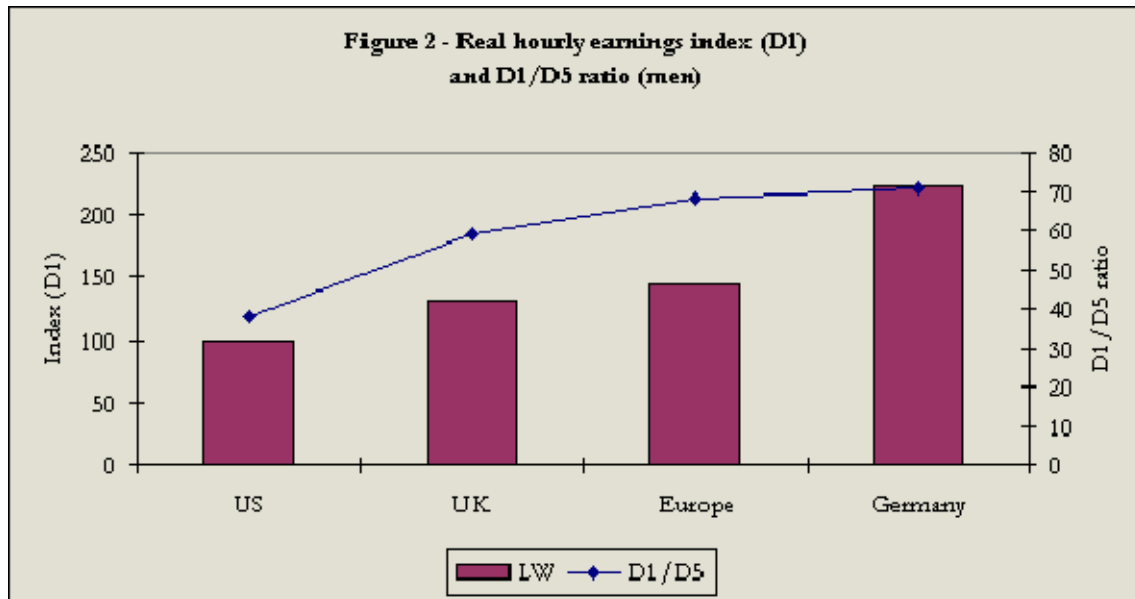
Labour market institutions, such as those previously discussed, may influence the incidence of low wage employment in a number of ways. Both the “level” and “change” in labour market institutions may influence wage formation and the structure of earnings by altering the impact of market forces. Different institutional settings across countries provide different constraints and incentives for workers and firms involved in wage formation and can limit the impact of economic forces changes on the wage distribution. Changes in the institutional framework, loosening constraints and increasing incentives, may provide additional freedom to economic agents and favour changes in the structure of earnings. Whilst both the level and the change in institutions are certainly relevant, we concentrate our analysis on the structural differences in labour market institutions across countries rather than changes within countries in considering the effects of the institutional setting on low wage employment and earnings inequality.

The well-being of individuals at the bottom of the earnings distribution is affected by the general level of real wages, the level and trend in overall inequality and the degree of earnings mobility that characterises the wage distribution. Whilst labour market institutions can influence each of these aspects, their implications for the low paid can be very different and should be distinguished.

Mean wage

Differences in the level of the mean wage across countries are relevant when low pay is measured with respect to some absolute benchmark. In countries characterised by a higher mean wage and living standards, what is classified as low wage employment may be significantly different from that in substantially poorer countries. In general, a higher mean

wage will be associated with a lower proportion of people falling below a fixed threshold. This seems to imply that economic growth can benefit anyone. However, if the variance as well as the mean of the distribution increases there is no guarantee that everyone will be better off. Some could become worse off in absolute as well as relative terms. International comparisons of low pay face a number of further difficulties arising from differences in productivity levels, definitions of subsistence levels and purchasing power of each country's national currency. To avoid these, comparisons are most often made in relative terms. As an example of differing low wage levels across countries, figure 2 reports for a number of OECD countries the real hourly earnings of workers located at the first decile of the earnings distribution, and the ratio of this to the mean wage. As shown in the figure low wages on this definition tend to be notably low in the US as compared with Europe and in particular with Germany. This suggests that in addition to the differences in overall inequality (see also the D1/D5 ratio), the lowest part of the distribution varies significantly across countries [10] (Keese, 1998; Freeman, 1994; Gottschalk and Smeeding, 1997).

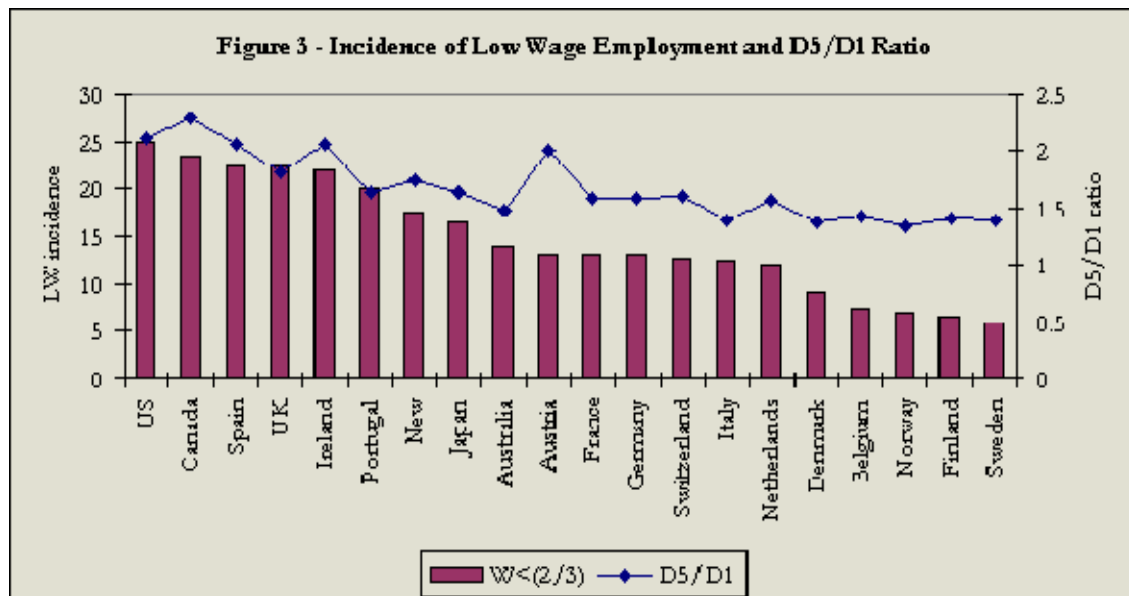


Turning to the relationship that might exist between a country's institutional setting and its economic performance, although there is no general agreement among economists on the role that labour market institutions may have on economic growth, a number of hypothesis have been subject to extensive scrutiny (Calmfors and Driffil, 1988; Brunetta and Dell'Aringa, 1990). High levels of unionisation and centralised bargaining appear to provide an encompassing role, allowing economic policies which are growth-oriented rather than centred on redistributive strategies. By limiting the negative externalities from the wage behaviour of self-interested groups, these features lead to a more favourable trade-off between real wages and employment growth from which low wage employment may benefit. Conversely, when unionisation is fragmented and different groups pursue their own interests the lack of co-operative objectives may prove harmful to the country's

performance. Redistributive strategies which favour more powerful groups at the expense of weaker ones may support rent-seeking behaviour. Low wage workers, lacking power as a group, face a worsened trade-off between the real wage and employment. Finally, under decentralised bargaining and weak union power, the functioning of a quasi-market mechanism may adversely affect the relative position of low wage workers even in the context of sustained real wage and employment growth. In this context, institutional constraints have a negligible effect and the operation of supply and demand forces can severely affect the earnings of marginal (low paid) workers. (Pekkarinen *et.al.* 1992; Caroli and Aghion, 1998).

Wage inequality

Differences in wage inequality across countries are a further dimension of the low wage employment problem. Countries with wider wage differentials are often characterised by a larger proportion of low paid individuals. In figure 3, we have reported for several OECD countries both the proportion of low paid workers i.e. those whose earnings fall below two-thirds of the median wage, as well as the ratio of the median to the first decile wage. The pattern that emerges, as documented in several studies, shows that countries characterised by a higher dispersion in the lower part of the earnings distribution also have the largest share of low paid individuals (OECD, 1997; Blau and Kahn, 1996) [11].



International differences in earnings inequality can reflect a wide variety of factors, importantly including differences in measured and unmeasured characteristics (educational attainment, skills, age distribution etc) and the differing wage returns for those skills. In the present context institutional differences in wage formation underline a different set of

incentives and constraints that individuals take into account in making their choices. A good starting point in comparing wage inequality and the incidence of low pay across countries is to decompose overall inequality into “between” group and “within” group components [12]. Since labour market institutions can have a pervasive effect both on the distribution of observed characteristics and on the structure of returns to these characteristics it is important to assess their role in shaping the cross-country pattern of inequality. In other words, differences in the overall inequality and the incidence of low pay may reflect not only the fact that there are differences across countries in unionisation rates, and in the composition of the workforce by skill, gender and other observable traits, but also that the mode of determination of economic returns may differ. Institutional pay setting, such as union pay policies, the structure of bargaining, the existence mandatory extension of collective agreements and, more generally, the legislation on wages may significantly influence wage dispersion and the incidence of low pay [13].

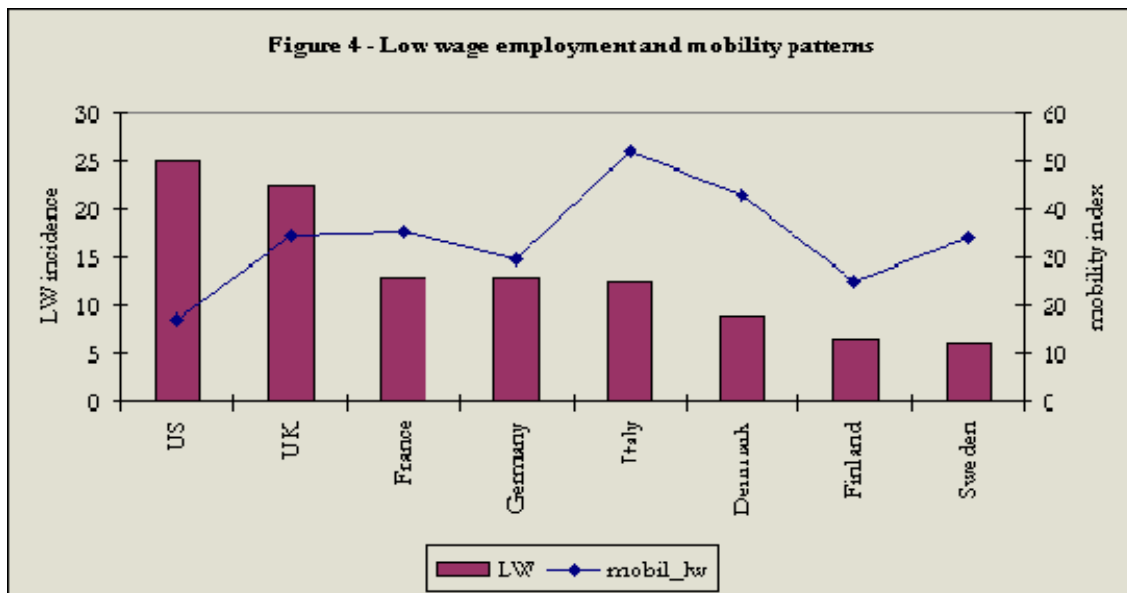
An alternative hypothesis, often neglected, is that different types of institutions may induce greater (in)stability in the earnings of people with similar characteristics and belonging to the same group. At any moment in time people may experience different earnings (and employment) patterns with short-term transitory increases or decreases in their earnings. If these fluctuations are larger in one country with respect to another, then both inequality and low wage employment measured at a given point in time will differ (Gottschalk and Moffit, 1994; Gottschalk, 1998).

Wage mobility

A further dimension of the functioning of the low wage labour market and its interactions with the institutional setting relates to the mobility patterns that characterise the earnings distribution. Whilst measures of inequality and low wage incidence can provide a measure of the diffusion of low pay at a given point in time, they do not offer any perspective on the transitions that occur between the pool of low wage workers and the rest of the earnings distribution. In particular, when analysing low wage employment, it is important to stress that it is not always the same people who are low paid: a person in the lowest percentiles in a given year will not necessarily be in the same percentile few years later [14]. Differences in mobility patterns both across countries and over time may reflect differences in the covariance structure of earnings for any given distribution. In general more dispersed distributions are expected to be characterised by higher (short-term) fluctuations in earnings and hence by larger transition flows across the different parts of the distribution. In terms of low wage employment the greater dispersion may imply more frequent spells in low pay, while the duration of each spell may be shorter as individuals are also more likely to exit from low pay due to the larger transition flows. To get a rough picture of the relationship that links the extent of low pay to the mobility patterns of individuals located in the lowest deciles of the distribution, in figure 4 we compare across countries an indicator of low wage incidence with a measure of transitions out of low pay i.e. the proportion of people moving from a low wage job to a high wage job.

The evidence does not seem to support the hypothesis that countries characterised by a larger pool of people earning a low wage are also more likely to have larger flows out of

low pay. In particular, contrary to these expectations, in countries where the proportion of low paid workers is higher, only a small proportion seem to transit to better paid jobs. At the aggregate level, a significant degree of persistence in low pay emerges: it is the same individuals who are still found in low pay several years later (OECD, 1997). Conversely, exiting low pay appears more likely in those country where its incidence is smaller [15].



In general, the empirical literature shows that earnings mobility is rather modest and not sufficient to override the effects of steady state inequality (Burkhauser, *et al.*, 1995; Bigard, *et al.*, 1998; OECD, 1996). In terms of labour market institutions, the fact that the US has a less regulated labour market and a more decentralised system of collective bargaining as compared to European countries does not translate into greater earnings mobility nor into a higher probability of leaving low pay. Likewise the more centralised wage setting institutions which are present in Germany and in the Nordic countries do not imply a significantly lower mobility among the low paid [16]. This evidence, even if only sketched, seems to imply that institutions produce their main effects on the permanent components of pay dynamics, whilst differences in the transitory components appear to have only marginal effects (Dickens, 1997; Cappellari, 1998; Gottschalk, 1998).

4. Measuring the Effects of Institutions on Low Wage Employment

The fact that over the 1990s several OECD countries experienced a general tendency towards increasing inequality and are still showing considerable differences in the extent of inequality and low wage employment, may be interpreted as evidence that institutional structures under common shocks can produce substantially different outcomes. In this section we shall investigate the extent to which selected institutional features can influence

the distribution of wages and the incidence of low wage employment across a number of OECD countries [17]. In particular, since the impact of institutional features is typically concentrated in specific parts of the distribution, we shall centre our attention on those institutions which are most likely to impact on the bottom part of the wage distribution, namely: trade unions, the structure of collective bargaining and wage regulation. Their main effects, as well as those of selected control variables, measured by simple bivariate correlations and univariate regressions are reported in table 2 (panel (A) and (B)). Alternatively, in figure 5, we report the plots of the same set of labour market institutions against low pay incidence. The discussion of the main implications follows hereafter.

Table 2 - Institutions and Low Wage Incidence (20 countries)

Variables	bivariate correlations	simple univariate regression		
		dep. variable - $\log(LWI)$		
(A) <i>Labour market institutions</i>	$\rho(LW,x)$	constant	x	$R^2(adj)$
Union Density	-0.68**	3.23	-0.015**	0.44
Union Coverage	-0.60**	3.33	-0.010**	0.33
Centralisation	-0.72**	3.20	-0.069**	0.50
Kaitz Index	-0.64**	4.07	-0.028*	0.38
Benefit Replacement Ratio	-0.53*	3.37	-0.021*	0.41
(B) Other controls				
Women Employed Part-time	-0.30		--	
Proportion of Self-Employed	-0.36		--	
Test-score Ratio	0.58 ^(#)		--	
Rate enrolment/pop.age (H-School)	-0.23		--	
GDP (per-capita)	-0.17		--	
Share (empl. in services/tot-empl)	-0.22		--	
Share home-ownership	0.05		--	
(C) Competing factors				
Total non-EU trade/GDP	-0.50*	3.05	-0.014*	0.02
Share of "high-tech" empl.	0.10	2.39	0.013	0.09
Skill/Unskill labour ratio	-0.32	3.05	-0.511	0.05
Product & lab-market regulation	-0.17	2.72	-0.026	0.00

*5% significance level; ** 1% significance level;

(#) based on 11 countries only.

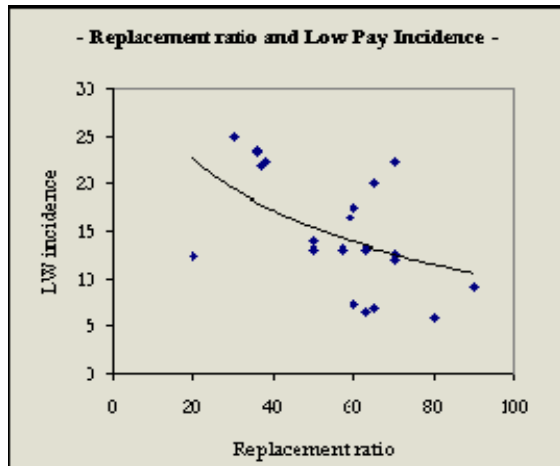
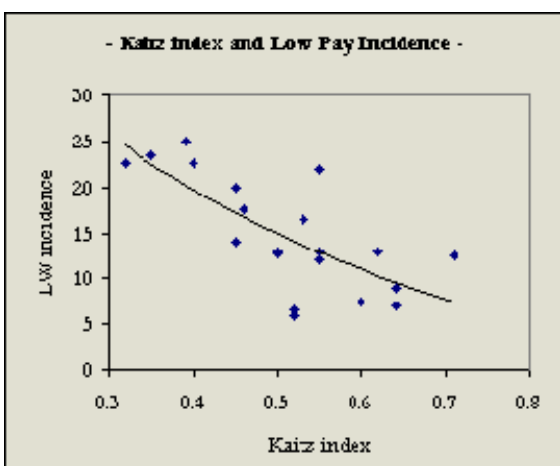
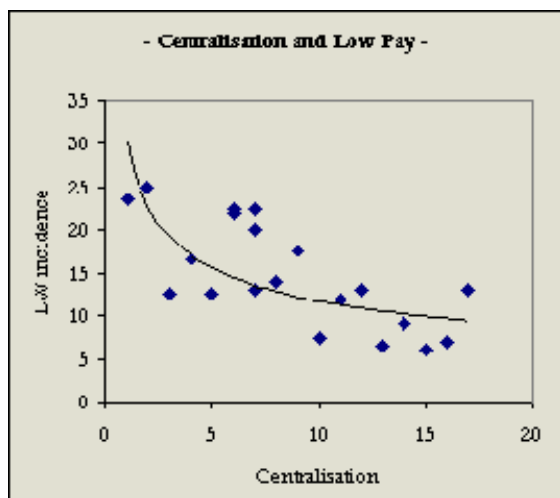
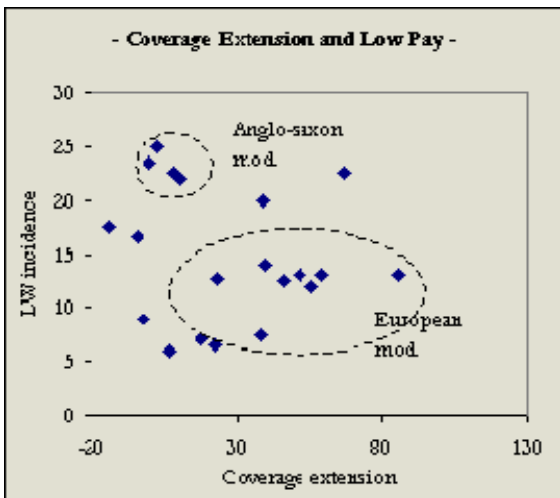
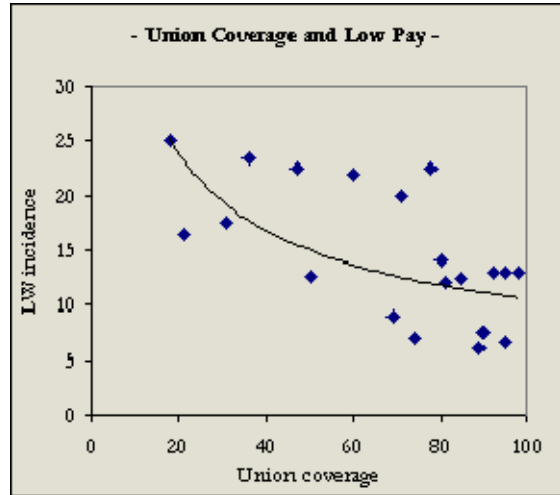
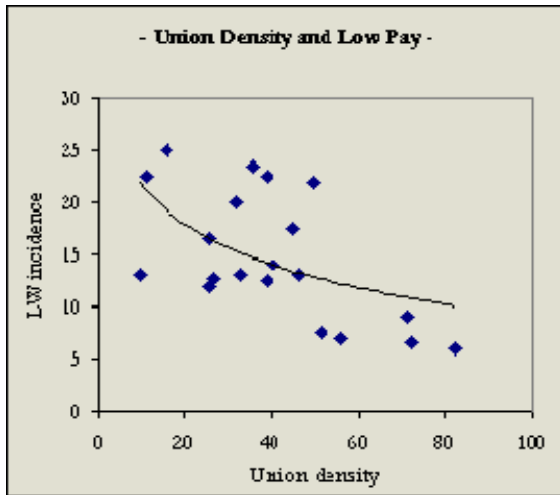
Source: OECD, 1996

Unions and Collective Bargaining

There are several *routes* through which trade unions can alter the overall distribution of

wages and in particular the incidence of low pay. Although union pay policies tend to reduce wage dispersion by raising wage floors almost in all countries, the extent to which unions are able to reduce the gap between low pay and average pay levels appears to be correlated with the degree of unionisation (or union density) observed in each country. The empirical evidence – as reported in table 2 - shows that where unionisation is generally low a larger pool of low wage workers is observed [18]. In the US where only 14 per cent of workers are members of a trade union the proportion of low paid workers is over 25 per cent, whilst in Sweden where union density is over 80 per cent less than 6 per cent of workers fall below the low pay threshold (see table 1). Similarly in Italy, Germany and Belgium where nearly one worker out of two is a member of a union (i.e. IT, 40; GER, 33; BEL, 51) the proportion of low paid workers lies between 8 and 13 per cent. Hence, at a purely descriptive level, the extent of unionisation appear to be negatively correlated ($\rho = -0.68$) with the extent of low wage employment (see figure 5). However, unionisation has been traditionally low in some countries, such as France, which have also experienced a fairly low incidence in low wage employment. In this context the existence of mandatory extension provisions for collective bargaining, as previously described, can make the degree of union coverage a more appropriate indicator of the effective “strength” of unions in protecting low wages. When the extension of collective agreements is taken into account the evidence of a negative correlation between union power and low wage employment is confirmed ($\rho = -0.60$). In particular, looking at the estimated coefficients from simple univariate regressions, it emerges that an increase of 1 percent in union density or coverage – considered independently - is associated to a reduction of 1 and 1.5 percent, respectively, in low pay incidence.

In other words, the power of the unions to create a wage floor and reduce wage dispersion at the bottom of the distribution seems to be the result of a combination of factors: on the one side, “pure” union power given by actual membership and, on the other, some form of wage regulation that can extend the power over the outcomes from collective negotiations far above that provided by union presence. In order to see this, we have computed an indicator of coverage extension (measured as the excess of bargaining power over and above union membership) and related it to low wage incidence. The pattern that emerges, with the exception of some outliers, shows two clusters of points: on the top left (i.e. high low-wage employment and low coverage extension), we find countries belonging to the Anglo-Saxon model of industrial relations characterised by limited mandatory extension provisions; conversely, on the bottom right, it is the European model of industrial relations - high coverage and frequent mandatory extensions- (see table 1) that predominates [19].



Finally, the structure of collective bargaining itself might be related to the extent of low pay. In particular, centralisation of collective bargaining through the encompassing role played

by the unions is shown to reduce significantly wage dispersion in the bottom part of the wage distribution and limit the incidence of low pay. Both table 2 and the graph in figure 5, show a negative (statistically significant) correlation between an index of centralisation and the proportion of low wage workers ($\rho=-0.72$). An upward move in the centralisation ranking reduces the percentage of low pay employment by almost 7 percent.

Wage Regulation

As already discussed, both the existence of a statutory minimum wage and the generosity of unemployment benefits are further labour market institutions which may have an impact on the bottom end of the wage distribution as well as on the propensity of individuals to take up low-paid jobs. In general, a high (low) minimum wage relative to the average wage (the Kaitz index) tends to be associated with lower (higher) levels of low wage employment. This is confirmed by the negative correlation that emerges between the Kaitz index and the proportion of low wage workers across countries ($\rho=-0.64$).

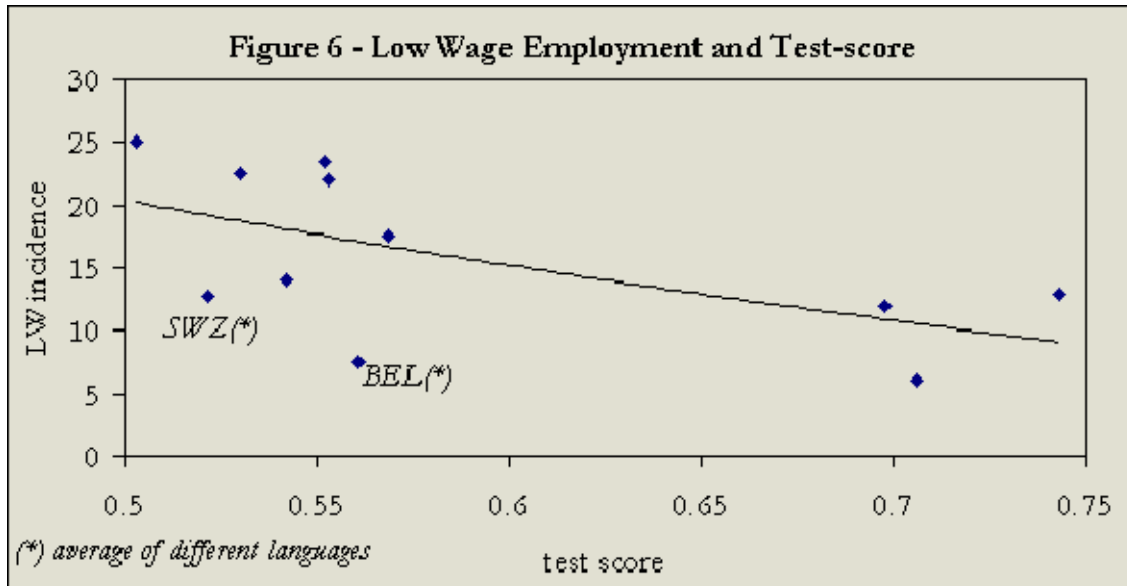
Alternatively, the generosity of unemployment benefits, as measured by the replacement ratio, appears to be negatively related to the extent of low wage employment ($\rho=-0.53$). In general, as it emerges from coefficient estimates, a unit increase in the ratio of the minimum to the average wage or in the replacement ratio shows a statistically significant negative impact on the proportion of low pay. The evidence presented thus far seems to confirm the substantial role played by labour market institutions in shaping the distribution of earnings and the incidence of low wage employment. Different institutions concerned with wage setting practices, taken one by one, have shown that various forms of wage floor can play a relevant role in alleviating low pay, either by reducing dispersion at the bottom end of the distribution or more directly by truncating the distribution from below.

Institutions and Market Forces: a few points

A number of *caveats* apply to the above evidence. First, simple correlations between different measures of labour market institutions and the incidence of low pay, across countries, only provide a rough description of the “stylised facts” and do not involve any investigation of the interdependencies among the factors which may generate the observed patterns. Moreover, the exclusive focus on labour market institutions neglects the role that market forces or other factors may play in determining a different incidence in low wage employment across countries. Some of these (observed) factors are reported in table 2 (panel (B) and (C)) and have been further experimented in the empirical analysis below. They range from: share of women employed part-time, proportion of self employed, GDP per capita, share of employment in services and home-ownership, on the one side, and share in GDP of (non-EU) trade, skilled-unskilled labour ratio and overall regulation in product and labour markets. All the factors listed above are often indicated as having some role in shaping the distribution of wages and the incidence of low pay. However, simple

correlations show that there is no statistically significant relationship between any of the factors listed above and the share of low pay employment [20].

Second, when using evidence from aggregate data, compositional effects – originating from a different distribution of observed as well unobserved characteristics across countries – may distort the observed pattern in an unpredictable way [21]. The obvious factor to be considered is the differing distribution of skill levels, either measured in schooling attainment (number of years or high education enrolment ratios) or, more appropriately, using average test scores. In figure 6, we plot literacy test score ratios against low wage employment [22]. This shows a clear positive correlation ($\rho=0.58$; in table 2) between skill dispersion and the incidence of low pay: the more heterogeneous are workers in the bottom part of the skill distribution in terms of skills, the higher are both earnings inequality and the proportion of people falling below the low wage threshold.



A final point, which applies to all studies that investigate the role of institutions as a potential explanation for differing economic outcomes, relates to the fact that the variety of institutional features of labour markets may be the consequence rather than the cause of the differing incidence of low pay (i.e. countries with low dispersion of wages may set a relatively high minimum wage to protect workers from adverse shocks, knowing that very few would be affected). A number of features which have characterised the process of structural change across most industrialised countries, however, appear hard to reconcile with the view that institutions are purely endogenous and therefore should not be considered as one of the key factors capable of explaining the observed differences. One feature that should be considered is that pervasive labour market institutions show strong persistence against economic forces. Moreover, common shocks affecting most countries produce very different responses in wages and employment depending on the underlying institutional settings. Countries characterised by similar institutional features share common patterns, as

described above, irrespective of the magnitude of the economic changes occurring. If institutional settings were endogenous responses to more fundamental shocks resulting from globalisation, technological developments and organisational change the pattern of economic effects should have been stronger where institutions proved more sensitive to adjustment. The available evidence suggests that this is not the case. Differences in labour laws and collective bargaining practices, as opposed to demand and supply factors, appear to be the relevant features of the diverging patterns. Also, countries where institutional wage setting practices are targeted to protect low wage workers and reduce wage dispersion, should exhibit larger employment losses among low-wage or low skilled workers as compared to countries where wages are set in a more market oriented fashion. However, the relative employment rates of the low wage/low skilled workers evolved in a similar fashion in most countries, which appears in contrast with the view that institutions are endogenous responses to market shocks (Card, *et al.*, 1996; Fortin and Lemieux, 1997; Nickell and Bell, 1995).

5. Institutions and Low Pay: Is the Evidence Robust?

In table 3, we report some evidence drawn from a simple multivariate analysis [23]. The proportion of low wage workers (in logs) is regressed against a set of institutional features that, as previously described, are expected to affect earnings dispersion in the lower part of the distribution. When we look at the joint effects of unionisation, union coverage and centralisation in collective bargaining across countries, we find that they contribute to reducing the incidence of low wage employment. Coefficient estimates are negatively signed and in general statistically significant (although centralisation on its own is not) [24]. However, since institutional wage setting is also strongly influenced by the generosity of unemployment benefits and by a high minimum wage relative to the average wage, we include both of these as additional controls. In line with previous results, our findings also suggest that wage regulations have a significant impact on low wage employment (DiNardo *et al.*, 1996; Fortin and Lemieux, 1997; Teulings, 1998). Finally as a further test for the significance of the above results we experimented additional control variables including: the proportion of self-employed workers, the share of women employed part-time, the share of home-ownership and GDP per capita [25]. With the only exception GDP per capita, none of one of the above controls seemed to play any role in explaining the distribution of low wage employment across countries. Conversely, richer countries – for any given institutional setting – seem to be characterised by a reduced incidence in low pay [26]. When considering the distribution of skill levels (as shown in table 3, column 4 and 5) both the test score variable and high education enrolment ratios - while leaving the previous estimates largely unaltered - never achieved statistical significance.

Table 3 - Estimates of the Effects of Labour Market Institutions on Low Wage Incidence
(20 OECD countries)

Variables	Low Wage Incidence				
	dependent variable - $\log(LWI)$				
	(1)	(2)	(3)	(4)	(5)
Labour market institutions					
Union Density	-0.0101*	-0.009*	-0.008**	-0.008**	-0.008**
Union Coverage	-0.006 ^o	-0.005*	-0.007*	-0.007**	-0.007**
Centralisation	-0.021	—	—	—	—
Kaitz Index	—	-0.014**	-0.011**	-0.011*	-0.011*
Benefit Replacement Ratio	—	-0.007**	-0.007**	-0.008**	-0.008**
Other controls					
Test-score Ratio	—	—	—	0.003	—
“noscore” dummy	—	—	—	0.001	—
Rate enrol/pop.age (H-School)	—	—	—	—	0.003
GDP (<i>per capita</i>) /1000	—	—	-0.055**	-0.056**	-0.060**
Constant	3.59**	4.45**	5.23**	5.08**	5.07**
$R^2(adj)$	0.61	0.73	0.86	0.84	0.85
<i>N. observations</i>	20	20	20	20	20

^o10% significance level; * 5% significance level; ** 1% significance level;
Source: OECD, 1996; Nickell, 1997

Regression estimates can provide a basis for estimating the potential effects of differences in labour market institutions on the incidence of low wages. For example, if we consider the difference the incidence of low wage employment between the US and Germany ($\Delta LW=12\%$), the regression results suggest that 64% of that difference ($\Delta LW_{(est)}=7.7\%$) can be explained by differences in labour market institutions. Alternatively, repeating the exercise for the US against Sweden ($\Delta LW=19\%$) the proportion accounted for by differing institutional settings is close to 61% ($\Delta LW_{(est)}=11.7\%$).

Since many institutional arrangements are targeted towards a specific portion of the wage distribution, we may expect their effects, as previously discussed, to differ between the bottom and the top end of the distribution. In table 4, we evaluate, for the same set of OECD countries, the effects of labour market institutions on various measures of wage inequality. In particular, do the institutional arrangements considered in the previous exercise have an impact on inequality at the top of the wage distribution which is different from its impact at the bottom? [27] In order to do this we regress different institutional features on various decile ratios (i.e. D9/D1; D9/D5; D5/D1). Considering overall inequality (measured by the log of the ratio of the top to the bottom decile), higher union density appears to be associated with lower wage dispersion while no (statistically significant) effect is detected for the coverage or the centralisation of collective bargaining. Also, both a higher minimum wage, relative to the average wage, and a more generous benefit replacement ratio result in a lower dispersion. The effect of the minimum wage on the distribution seems particularly strong. When the same set of institutional variables are tested on the top and the bottom of the distribution respectively some interesting differences result. First, as one might expect,

union density has a mild negative impact on wage dispersion at the bottom of the distribution (column 5, table 4), whilst it shows no effect at the top (columns 3 and 4, table 4). Interestingly, centralisation of collective bargaining plays a significant role in reducing pay dispersion at the top. In other words, it seems that countries with more centralised bargaining systems promote corporatist objectives and worker solidarity mostly reducing earnings dispersion at the top of the distribution.

When it comes to the role of wage regulation factors, the minimum wage shows a (statistically significant) negative impact on wage dispersion both on the whole distribution and, particularly, on the bottom part. No effect is detected at the top. The benefit replacement ratio also shows a negative impact on the overall distribution and on the bottom end, while no statistically significant effect is detected at the top. Finally, the inclusion of a test score indicator as a proxy for low-skill heterogeneity and as a potential determinant of wage dispersion in the bottom part of the distribution, fails to show up statistically significant (see column 7, table 4).

Table 4 - Estimates of the Effects of Labour Market Institutions on the Distribution of Wages
(20 OECD countries)

Variables	Decile ratio		Decile ratio		Decile ratio		
	$\log(D9/D1)$		$\log(D9/D5)$		$\log(D5/D1)$		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Labour market institutions							
Union density	-0.004**	-0.003*	-0.0015	-0.0011	-0.0030°	-0.0011	-0.0010
Union Coverage	-0.006**	-0.0022°	0.0002	0.0002	-0.0022	-0.0008	-0.0009
Centralisation	—	—	-0.0151**	-0.0165*	0.0013	—	—
Kaitz index	—	-0.011**	—	-0.0019	—	-0.0077**	-0.0080**
Benefit replacement ratio	—	-0.003*	—	0.0010	—	-0.0030*	-0.0031°
Other controls							
Test-score Ratio	—	—	—	—	—	—	0.0898
“noscore” dummy (*)	—	—	—	—	—	—	0.058
GDP (<i>per capita</i>) /1000	-0.034*	-0.028*	-0.021**	-0.020**	-0.011	—	—
Constant	1.57**	2.58**	1.08**	1.12**	0.98**	1.17**	1.14**
$R^2(adj)$	0.55	0.74	0.60	0.63	0.28	0.49	0.41
<i>N. observations</i>	20	20	20	20	20	20	20

°10% significance level; * 5% significance level; ** 1% significance level;

Source: OECD, 1996; Nickell, 1997

(*) dummy variable that takes value 1 when the test-score variable is missing (i.e. set equal to zero in 9 cases).

Union density	-0.008**	-0.007**	-0.008**	-0.009**	-0.007**	-0.001	-0.001	-0.001	-0.0005
Union Coverage	-0.007**	-0.007**	-0.007**	-0.006**	-0.007**	-0.001	-0.001	-0.0007	-0.001
Kaitz index	-0.011**	-0.012**	-0.011*	-0.010*	-0.013*	-0.009**	-0.007**	-0.007*	-0.008**
Benefit replacement ratio	-0.007**	-0.008**	-0.007**	-0.007**	-0.007**	-0.003*	-0.003°	-0.003°	-0.003°
<i>Other characteristics</i>									
GDP (per capita) /1000	-0.055**	-0.067**	-0.053**	-0.060**	-0.040**	—	—	—	—
<i>Competing factors</i>									
Total non-EU trade/GDP	-0.001					0.002			
Share of “high-tech” empl.		0.012					-0.001		
Skill/Unskill labour ratio			-0.0004			—	—	—	—
Product & lab-mark regulation				-0.018				-0.004	
Share empl. services/tot-empl					-0.009				-0.006
Constant	5.22**	5.24**	5.22**	5.29**	5.76**	1.21**	1.19**	1.17**	1.60**
R^2 (adj)	0.85	0.86	0.85	0.86	0.86	0.50	0.48	0.50	0.49
<i>N. observations</i>	20	20	20	20	20	20	20	20	20

°10% significance level; * 5% significance level; ** 1% significance level;

Source: OECD, 1996; Nickell, 1997

When we include, respectively, the share in GDP of (non-EU) trade, the skilled-unskilled labour ratio (or the share of ‘high-tech’ employment), an index for the degree of product and labour markets regulation or the share of employment in services, none of them achieve statistical significance while the estimated effects of institutional factors remain mostly unchanged. This evidence partly reinforces the conclusions reached before.

Although it ought to be remembered that these results have to be interpreted with care, since they are based on aggregate cross sectional data and on a limited number of observations, nevertheless they appear to be consistent with the view that labour market institutions do play a relevant part in determining wage inequality and the extent of low wage employment across countries.

6. Concluding Remarks

In this paper, the issue of labour market institutions and low wage employment has been investigated and tested empirically across a number of OECD countries. Since institutional arrangements are typically directed towards a specific portion of the wage distribution or towards given groups of individuals, we have focused the attention on selected institutions that are particularly relevant for low wage employment. In particular the effects of trade unions, the structure of collective bargaining and the existence of regulations on wages have been considered.

Labour market institutions, in general, influence wage formation and the structure of earnings by altering the effects of market forces and providing a different set of constraints and incentives for workers and firms involved in wage formation. Here the focus has been

restricted to the analysis of the structural differences that exist in labour market institutions across countries and the effects that these have on low wage employment and earnings inequality. Consistent with previous work, our results suggest that institutions are a relevant factor in shaping the distribution of earnings and the incidence of low pay. We have shown that institutional settings differ substantially across countries and that institutional variety in the labour market is able to explain a great deal of the observed patterns in low pay across countries.

At a descriptive level, results from simple correlations indicate that union density, collective bargaining coverage and the structure of wage negotiations jointly contribute to reduce the incidence of low pay across countries. However, the power of unions to create a wage floor and reduce wage dispersion at the bottom of the distribution appears to be the outcome of a combination of union power and wage regulations such as mandatory extension of contract, statutory minimum wages and the generosity of unemployment benefits. When all the above factors are taken together to explain the pattern of low wage incidence across countries, the results show that over 60 per cent of the cross-country differences in low pay can be accounted for by the different institutional settings. Looking at the effects of institutional arrangements on wage inequality, we show that high minimum wages lower dispersion at the bottom end of the distribution, while a more corporatist system is effective in containing wage differences at the top. The hypothesis that other factors – independently of labour market institutions – might explain the observed patterns in low pay did not prove consistent with the available evidence. Neither the explanation based on the effect of ‘skilled-biased’ technological change or the role played by increased trade with developing countries received support from the data.

Whilst the above evidence is far from providing any conclusive assessment of the complex interactions that exist between labour market institutions and the problem of low wage employment, it provides additional evidence, consistent with other studies, that institutions do matter for the functioning of low wage labour markets. From a more policy oriented perspective, the above findings seem to suggest that the State can have a role in supporting or promoting those institutions which have proved effective in dealing with the problem of growing earnings inequalities and low wage employment.

As discussed above and back in the introduction to this paper, it should be acknowledged that those institutions referred to in the “*Laborem Exercens*” have indeed played a significant role in reducing inequalities (by ensuring a “fair remuneration” to employed workers), developing solidarity and fighting poverty, in most industrialised countries. Although, it cannot be claimed that those institutions have made possible the elimination of all forms of inequalities or have greatly reduced the degree of precariousness which characterises some (weaker) segments of the labour market; nevertheless they have played a significant role in moderating some of the undesirable effects of the working of the markets. As documented, where the role of those institutions is weaker or their ability to influence economic outcomes is reduced, significant disparities in both wages and working conditions still exist also in highly industrialised countries.

Lastly, we should mention a largely unresolved question which has not been addressed in

the present work, although the Encyclical specifically refers to it, that is the problem of unemployment. Our analysis has focused on wage inequalities among employed workers, neglecting completely the issue of income (or welfare) inequality vis-à-vis those individuals who are jobless. Despite the existence of a widespread safety net for those out of work (in the form of unemployment benefits or other subsidies), the presence of a large pool of unemployed people - particularly in some countries - may raise some concern also for the standard of living and the degree of poverty among the unemployed. In other words, it should be asked whether the same institutions which have proved effective in promoting solidarity and reducing inequality among workers have been equally effective in reducing unemployment? The issue among economists is highly controversial: some have argued that the presence of those institutions which regulate the functioning of the labour market - by reducing inequality and protecting jobs - also reduce the flexibility needed to adjust to business cycle shocks and give rise to increasing and persistent unemployment; others believe that employment opportunities, in the long run, are largely unaffected by the presence of such institutions.

The empirical evidence is mixed, although it should be noted that the weaker segments of the labour market - i.e. young and old people, women, low-skilled workers - are, at the same time, those who experience higher levels of unemployment as well as higher incidence of low-pay. Incidentally, the latter are also those less likely to be protected by the unions which are (still) mainly oriented towards prime-age male workers. In other words, low pay and unemployment are likely to be "on the two sides of the coin", as (weaker or marginal) workers might alternate spells of unemployment to spells of low-paid employment.

As argued in the Encyclical, trade unions are important actors in the pursue of both social justice and more equitable distribution of resources, however, in order to achieve these objectives they should be "encompassing" organisations, so as to represent the interests of all workers. What the unions should not do is try to represent and protect only "some" group of workers (well-paid and over-protected), in a corporative and egoistic perspective, leaving out the interests and the rights of the weaker groups (Lombardini, 1983). Both a "fair wage" and "full employment" should be considered together as the main objectives to be achieved on the labour market. Social and economic life - as stated in the Encyclical - are closely linked and related and any group should feel that his interests are duly considered and his rights equally protected, «*In this sense, union activity undoubtedly enters the field of politics, understood as prudent concern for the common good*» (L.E., 20).

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Notes

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[1] Obviously the possibility of spill-over effects onto non-covered workers should be taken into account.

[2] Since "institutions" arise to represent and insure selected groups of individuals or firms their focus is on the "average" (median) and they may resist changes which affect the welfare of the "average" worker even if these might be perfectly consistent with an optimising behaviour based on the "marginal" worker such as that arising from the operation of the market mechanism (Freeman, 1996).

[3] Inequality indices are calculated for full-time, full-year earnings. For further details concerning the data used, see: OECD, *Employment Outlook*, 1998; Bardone *et al.*, 1998.

[4] Various definitions have been suggested for the earnings cut-off determining low pay. Firstly this depends on whether an absolute or a relative measure is chosen., "Absolute" measures are defined with reference to a given level of income in real terms e.g. the official poverty line. Conversely, "relative" measures are taken as the earnings level defined as a fraction of mean or median wages, or with respect to some specified quantile of the distribution. Problems arise with any of the above definitions. However for the purposes of the present study a "relative" measure, closer to the idea of social distance, was chosen. Despite its apparent arbitrariness, the measure chosen is in line with the Council of Europe's suggested "decency threshold" (defined as 68% of full-time average weekly earnings), as well as with the level of the legal minimum wage enforced in several European countries. Other organisations have proposed different pay thresholds, e.g. Trade Union Congress (TUC) and British Low Pay Unit (BLPU). See OECD (1996) for a thorough discussion of the properties and limitations of the different measures for the low-pay cut-offs. Keese *et al.* (1998); also deal with the issue).

[5] Information on labour market institutions for the 1990s is drawn from various sources: OECD, *Employment Outlook*, 1998; Bardone *et al.*, 1998; Nickell, 1998.

[6] The impact on wage inequality will depend on the position of the workers affected by the union mark-up within the overall wage distribution. Inequality will be reduced if union workers have below-average pay levels, and conversely increased if union workers have above-average pay levels.

[7] In general unions have been very successful in removing performance evaluations as a factor in determining individual workers' wages. Also, seniority-based pay progression, requiring similar pay conditions to be applied to workers of comparable seniority, tends to reduce wage dispersion (Freeman, 1980b).

[8] Some care should be used in interpreting the impact of institutional wage setting (i.e. statutory minimum wages or bargained wages) on earnings dispersion, since it could also be ascribed to a truncation of the earnings distribution resulting from negative employment effects on low-paid work. In general, however, the latter appear to be relatively small (Bazen, this volume; Bardone *et al.*, 1998).

[9] Since institutions can affect men and women very differently, particular care should be used in interpreting their overall effects. In particular, while unionisation and collective bargaining mostly affect the male wage distribution, females wages are more sensitive to minimum wage legislation.

[10] Considering the changes which have occurred over time in various countries can be useful for assessing the relationship between the evolution of mean wages and low pay. In particular, when measured in absolute terms, the increase in real wages in Japan and the United Kingdom has brought a relative fall in the incidence of low pay. In contrast, in the United States the fall in real wages at the bottom of the earnings distribution has brought a rise in the proportion of workers with low real earnings.

[11] Simple correlations between an index of low wage incidence (LW) and decile ratios measured at different points of the earnings distribution ($W91$, $W95$, $W51$) provide additional support to the evidence: $\rho(LW, W91)=0.89$; $\rho(LW, W95)=0.65$; $\rho(LW, W51)=0.83$

[12] Inequality differs not only among these different groups but also within groups of workers with the same average characteristics. In terms of the methodology often used the within group component can be approximated by the dispersion of the residual of the regression, with a wider dispersion of the residuals showing greater inequality within groups.

[13] Blau and Kahn (1996), find that differences across countries in the skill distribution (measured by years of schooling and other relevant worker characteristics) account for only a small part of the differences in the overall dispersion of male wages. Hence institutional factors could be relevant in explaining the residual (unexplained) variation.

[14] If a large proportion of low wage earners in one year earn high wages in other years, then the cross-sectional earnings distribution might not be very informative. To get a clear picture of the covariance structure for low wage workers it is necessary to have repeated

information on the same individual over time i.e. longitudinal data.

[15] Particular care in interpreting these results is necessary for three main reasons. First, given the definition of low pay (relative to the median wage) when earnings are more dispersed – particularly at the extremes of the distribution – the wage gain required to exit low pay might be larger, thus mechanically reducing transition flows. Second, persistence in the aggregate might be due to some specific characteristics of the low wage pool that are correlated with earnings levels quite independently of pure state dependence (e.g. skill as well as unobserved heterogeneity). Third, year-to-year mobility into and out of low pay might also be affected by significant selection effects. Flows of workers out of low pay are often accounted for not only by a move into higher paid job but also by moves into non employment (unemployment or out of the labour force). Similarly, flows into low pay may be associated with an earlier spell of unemployment (Bardone, *et al.*, 1998)

[16] It is obvious that, when a longer accounting period is used, all countries have less inequality and mobility is in general higher. However, since countries do not differ much in terms of mobility patterns the ranking of countries in terms of inequality is not significantly altered anyway.

[17] Earnings inequality indices only refer to private sector full-time full-year workers.

[18] Standard bivariate correlation coefficients are reported in table 2, the only exception being the use of the Spearman rank correlation for the index of centralisation.

[19] Note that most of the outliers are represented by Scandinavian countries for which unionisation and coverage are both high. In some cases, coverage extension turns out to be negative, that is union density is higher than coverage.

[20] Freeman (1996) and Bjorklund and Freeman (1996), using US and Swedish data, run a pseudo-experiment comparing earnings inequality between a ‘treatment’ (men of Swedish descent living in the US and non-Nordic men living in Sweden) and ‘control’ group (native Americans in the US and persons with Swedish ancestry living in Sweden). Results show insignificant differences in earnings inequality between the two groups, in each experiment, thus suggesting that institutions more than observed and unobserved characteristics contribute to shaping the earnings distribution. In other words, Swedish institutional wage setting appears to be more committed to egalitarianism, showing less dispersion in earnings and a lower incidence in low wage employment, while in the US there is more inequality because the wage setting system produces higher dispersion in earnings.

[21] Blau and Kahn (1996), after correcting for a wide range of worker characteristics, still find that institutional features represent one of the main factors which can account for the observed differences, across countries, in wage inequality and low wage employment. See also Leuven and Oosterbeek (1997) for an alternative explanation.

[22] The index is based on the OECD “Literacy Skills Test Scores” and it is the ratio of the 5th percentile divided by the mean (available for 11 countries only). I am particularly

grateful to A. Glyn for making the data available to me.

[23] Given the limited degrees of freedom the results reported here should be interpreted with some care. A similar approach, though with fewer observations and fewer control variables, can be found in Freeman (1996). The results obtained here are very close to those reported in that study.

[24] The centralisation index did not result statistically significant and hence was excluded from subsequent specifications.

[25] Note that, since earnings data refer to full-time private sector employees, the inclusion of both part-time and self-employment controls is essentially trying to capture a potential under reporting in low pay employment (since low pay is known to be higher among female part-timers and the self-employed). Results for the other control variables have not been reported in the tables.

[26] This result could be interpreted as if earnings “equality” were to be considered a normal good.

[27] It should be stressed that the estimation of the effects of labour market institutions on different portion of the wage distribution is particularly demanding with respect to the data used, which is a cross-section of 20 OECD countries. While parameter estimates, both in terms of sign and magnitude, are fairly robust to changes in the specification, the statistical significance on the individual coefficients sometime weakens when sufficient non-linear terms and interactions are introduced.

[28] However, as noted by Fenestra (1998), if increased trade occurs by ‘outsourcing’ of low-skilled activities - within manufacturing - from developed countries to less developed.
