

Capitalist Economies and Wage Inequality

Wiemer Salverda (AIAS, University of Amsterdam) and Ken Mayhew (SKOPE, Oxford University.)¹

Abstract

New stylised facts on the incidence of low pay among employees and earnings mobility for 13 European countries and US are presented for the first time. The incidence is shown to be a good measure of wage inequality in the lower half of the earnings distribution. Analysing level and composition and mobility of workers out of low pay across countries sheds new light on inequality. Descriptive differences are strong and are confirmed in multivariate analysis: young age, low skills, female gender, part-time employment, and work in retail trade, hotels, catering and personal services, generally contribute significantly to the risk of being low paid and reduce the chances of escaping. Countries seem to combine these characteristics into low-wage employment in different proportions. However, important international differences are found. Two extreme cases – Denmark and the US – show very stable low-wage incidence while incidence has grown rapidly in the UK, Germany and the Netherlands.

The new knowledge is still insufficient for a full analysis of economic and institutional implications and explanations of low pay. Instead a look is taken at these separately in an attempt to refresh the research agenda. No direct link is found to aggregate employment nor to the employment rate of the low skilled. The industrial structure of employment has little effect on the aggregate incidence of low pay. However, differences between low-wage production of goods and services are important. Potential effects of low pay on productivity growth are signalled and so is the role of consumer demand. Both are important issues for further research. ‘Inclusive’ labour relations – working via high collective bargaining, with or without support of mandatory extension or a national minimum wage – seem to help containing low-pay incidence. An important potential determinant, requiring more research, of such relations seems the membership rate of employer associations. The optimistic conclusion is that countries have some leeway in ‘choosing’ low-wage incidence, but that it is not an easy choice.

¹ We are grateful to Maite Blazquez at Universidad Autonoma Madrid for developing the probability and mobility analysis on the basis of Jenkins and Cappellari (2004), and to Daniella Brals at AIAS for her work on ECHP and PSID.

1. Introduction

In recent decades great concern has been expressed about rising inequality of incomes and of wealth in many developed countries, not least in the US and the UK. However, there is considerable diversity across countries both in terms of the extent of inequality and of its growth over time. This has led some British and American commentators to ask whether their own societies will necessarily continue to experience high levels of inequality or whether past trends are reversible. Equally writers in some other countries have been asking whether Anglo-Saxon trends will spread more widely. This article contributes to this debate by exploring one dimension of inequality, that of wages or earnings. In particular, it is concerned with the incidence of low pay. This varies dramatically from country to country, as does its trend over time. We explore the reasons for this and its consequences. It is not obvious that countries avoid low pay at the expense of employment. Systematic differences between pay setting institutions play an essential role. A key question is whether those countries which possess “benign” institutions can maintain them and, if so, at what cost.

Table 1 demonstrates the very diverse experiences of different countries during the last 20 years. For example, the last two decades actually witnessed a decline in the dispersion of earnings in Finland and France and virtually no change in Japan. The table also illustrates the major differences between countries in the extent of present inequality. This ranges from a Swedish low of 2.24 to an American high of 4.75 for the ratio between the 9th and the 1st deciles (D9:D1). Clearly recent changes, even if generally tending in the same upward direction, have not brought convergence. The US had the highest level of inequality at the start of the period and also experienced the largest increase. Nor did changes occur at the same time in the different countries. In Finland and Germany, for example, developments between 1985 and 1995 and between 1995 and 2005 respectively were in opposite directions. In the Anglo-Saxon countries, Sweden and the Netherlands change occurred in the first decade whilst in many other European countries most of the action was concentrated in the second. Last, and for the purposes of this paper certainly not least, there are clear differences in the evolution of the lower and the upper halves of the distribution as reflected in the ratios between ninth and fifth deciles (D9:D5) and fifth and first deciles (D5:D1) respectively. In most cases, Germany being a clear exception, the increase in inequality was less in the lower

half than in the upper half of the distribution. This observation seems consistent with the suggestion that the (labour-market) processes affecting earnings may differ across the distribution. It justifies looking separately at the bottom and the top as suggested by Atkinson (2008, 15). Our focus is on the lower end.

Table 1 Decile inequality ratios of wage earnings*, mid-1980s to mid-2000s

	AU	DK	FI	FR	DE	IE	JA	NL	NZ	SE	UK	US
Present levels												
D9:D1**	3.09	2.31	2.36	2.84	3.10	3.92	2.82	2.83	2.85	2.24	3.41	4.75
Mean:Median	1.15	1.11	1.13	1.23	1.10		1.12	1.13	1.10	1.13	1.20	1.24
Changes (%) compared to mid-1990s												
D9:D1	11	3	4	-6	17	0	5	6	22	6	3	6
Changes (%) compared to mid-1980s												
D9:D1	16	6	-2	-6	12		4	16	32	13	17	21
D5:D1	2	2	-3	-9	11		1	6	9	8	4	6
D9:D5	13	4	2	3	2		3	10	21	8	12	15
Mean:Median	6	1	2	4	1		2	5		4	8	14
Notes:	all gross (G) earnings except France (Net***); H-hourly, W-weekly, M-monthly, A-annual, F-full-time, E-full-time full-year equivalent; Y-full-year full-time											
Earnings definitions	GWF	GHO	GAY	NAE	GMF	GWF	GMF	GAE	GHF	GAY	GWF	GWF
Mid-2000s	2005	2005	2004	2005	2005	2006	2006	2005	2006	2004	2003	2005
Mid-1990s	1995	1995	1995	1995	1995	1997						
Mid-1980s	1985	1985	1986	1985	1985		1985	1985	1985	1985	1985	1985
*) Mainly full-time.												
**) Decile ratios between 9 th and 1 st deciles, 9 th and 5 th , and 5 th and 1 st respectively.												
***) French GAE data that are available for 2001-2004 show virtually the same ratios.												
Sources: Authors' calculation on OECD, Distribution of Earnings Database (September 2008), except Denmark: courtesy Niels Westergård-Nielsen. See OECD database for actual national data sources.												

A major health warning is needed at this stage. The wide variety of definitions of earnings and coverage of employees that underlie the table illustrates the intricacies and dangers of international comparisons. For instance, the Danish figures relate to the hourly pay of all employees², while for Sweden they cover the annual earnings for full-time, full-year workers only. Different definitions can produce very different pictures of inequality. Table 2 illustrates for the cases of the US and UK. Unsurprisingly, annual and monthly earnings for all employees show a much larger variation than hourly earnings, as they also reflect variation in hours actually worked during the period concerned. To take another example, since 1979 the incidence of low pay in the Netherlands has remained virtually unchanged for full-time workers while it increased considerably for part-time workers (Salverda, 2007, Figure 2.9). Precise comparisons over time and across countries are further hampered by significant

² This included employees working part-time. In many countries much, if not most, of recent job growth has been in part-time jobs which, as we will see, are often low paid and thus contribute to growing inequality.

differences in the nature of data sources. These may observe wages and working hours more or less accurately depending on whether coverage is comprehensive or sampled, on whether the data are administrative or survey-based, and on whether the information originates from the person/household or the firm/establishment.

Table 2 Inequality (D9:D1 ratio) with different earnings concepts, US and UK

		US, 1979		UK, 2001	
Study	Wage concept	All	Men only	Head count	
Karoly, 1993, Appendix 2B2	Annual	21.50	13.79	All	
	Weekly	8.62	7.00	Monthly	7.47
	Hourly*	4.75	4.72	Hourly	3.61
Mishel <i>et al.</i> , 1996, 143–4	Hourly	3.50	3.67	Full-time only	
OECD, 1996, 62	Weekly		3.18	Monthly	3.60
Davis, 1992, figure 1A	Weekly		3.37	Hourly	3.33
Katz, <i>et al.</i> , 1995, 58	Hourly		3.42		
Erikson & Ichino, 1994, 31	Annual		5.61		

* as indicated in OECD, Employment Outlook 1993
Sources: US: Salverda (1998), Table 3.3, and UK: authors' calculations on ECHP.

There is a dearth of data on wage inequality that are comparable both cross-sectionally and over time, and we elaborate here on the findings of a recent international research project (in which we were both involved) aimed – *inter alia* – at finding such data for Denmark, France, Germany, Netherlands, UK and USA.³ The aim here is to initiate a discussion about the economic implications of the new stylised facts on low pay that this research has generated. A second aim is to extend the analysis to other countries, leading to the coverage of fourteen in total – 13 EU countries based on the European Community Household Panel (ECHP) dataset and the US based on the Current Population Survey (CPS) and the Panel Study of Income Dynamics (PSID). These data reinforce the observation that inequalities are diverging. We ask how these divergences relate to the labour markets and economies of the countries concerned. To what extent do they support the views held by many that, in some countries, wage inequality is constrained by “institutions” while instead it needs to grow to permit sufficient economic and employment growth? Phrased more generally, how important is the level of inequality for a country’s economy and how important are institutions as a determinant of wage outcomes? Two important competing (but perhaps also complementary)

³ We are grateful to our partners in the project and to the Russell Sage Foundation, New York, who initiated and financially supported the project. Schmitt *et al.* (2009) present the comparative results. The original national studies are Bosch and Weinkopf, Caroli and Gautié, Lloyd *et al.*, Salverda *et al.*, and Westergård-Nielsen (all 2008).

hypotheses are, first, on the institutional side (from the Russell Sage project), that in some countries ‘inclusive labour relations’ have prevented high or increasing levels of low-wage incidence, and, second, on the economic side (from the DEMPATEM project⁴ which notably involved Andrew Glyn, see Glyn *et al.*, 2007), that the incidence of low pay depends on economic behaviour, according to Glyn especially on the consumption decisions of households.

We present these new data on inequality and low pay below, but stress that their availability across countries and over time is still severely limited and that their quality is uneven. Consequently, our goal here can only be a systematic but basically qualitative exploitation of the data. We will pursue this for the national aggregates as well as for the (industrial) structure of employment and wages. For this purpose we will make intensive use also of the results of another recent research project, the EU-KLEMS⁵ dataset, which provides more consistency and better coverage of detail (across EU countries and the US since 1970) than the well-known STAN database of the OECD.

First we turn to explaining the new data and adding a number of other countries (all from EU), and argue that low pay is a good mirror of the part of earnings inequality, in the lower half of the distribution, that interests us most here. Second, we investigate how low pay compares internationally in terms of individual risks of being low paid and mobility to and from other labour-market states such as higher pay or non-employment. Third, we consider how the incidence of low pay in individual countries may relate to economic factors and labour-market institutions. Finally we offer conclusions and outline issues for further research.

⁴ “Demand Patterns and Employment Growth: Consumption and Services in France, Germany, the Netherlands, Spain, the United Kingdom and the United States”, an EU 5th Framework Programme project. Results are reported in Gregory *et al.*, (2007).

⁵ See www.eu-klems.net, available from the Groningen Growth and Development Centre. The data project was aimed at studying productivity and supported by the European Union’s 6th Framework Programme. It offers detail of 32 industries, it accounts for working-time developments, and covers the long period 1979–2005 (data start in 1970 but seem more reliable from 1979 onward).

2. Low-wage employment

*Defining low pay*⁶

The notion of low pay is a relative one – low in comparison to, for example, the pay of others and/or to the needs of the individuals concerned. The latter concept relates to the worker's household situation, which determines the needs that have to be met from earnings and income. It is important for exploring the relationship between low pay and poverty, but is generally outside the scope of the wage contract with the employer. Here we are concerned purely with the relative positions of individuals in the labour market irrespective of their household circumstances. We use a threshold approach⁷ which in principle can be conceived of as relative to either a specific position in the earnings distribution or an absolute level of earnings. The latter concept may help comparisons over time in terms of purchasing power but also complicates international comparisons since it brings into play exchange rates and purchasing power. We adopt the relative approach, anchored at the low-pay threshold (LPT) of two-thirds of median⁸ earnings espoused by the European Commission and the OECD. This choice serves to facilitate comparisons with most of the literature. Being based on the median, the LPT's link to the decile ratios pictured in Table 1 is obvious.

Figure 1 shows that there is a positive correspondence with the decile ratio for the lower half of the earnings distribution ($R^2=0.71$) while for the upper half it is negative and weak ($R^2=0.15$)⁹. This seems to suggest that cross country differences in inequality may require different explanations for the lower and upper halves of the earnings distribution.¹⁰ The incidence of low pay provides a reasonably accurate measure of wage inequality in the bottom half.

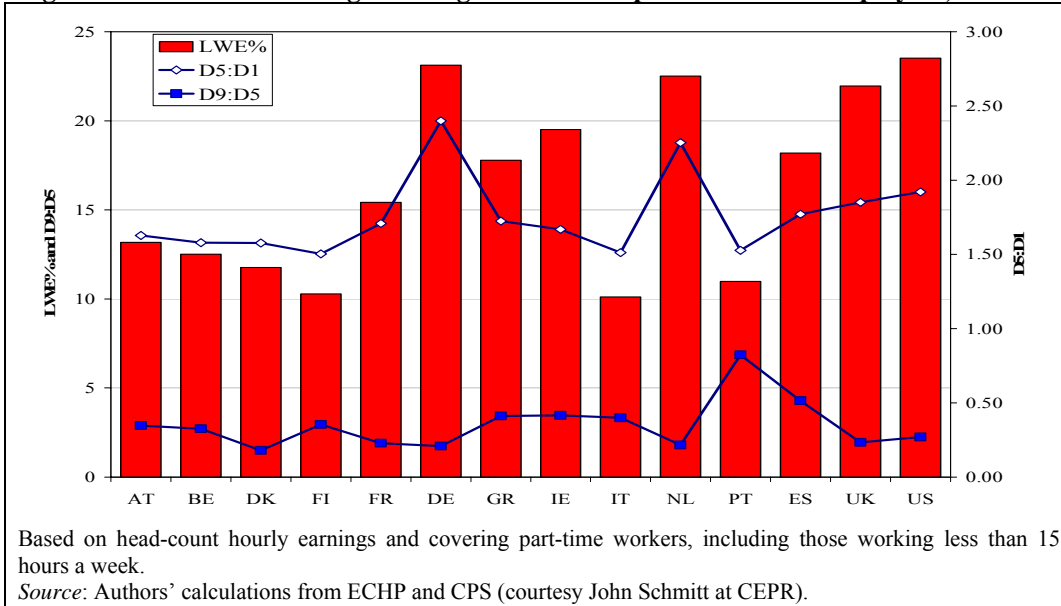
⁶ This section draws on Lucifora and Salverda (2009).

⁷ The alternative is to choose either a summary measure across the distribution as a whole such as the Gini coefficient or a fixed quantile, for example, the bottom 20 or 30%, of the distribution. The disadvantages of the former are that different measures stress different aspects of the distribution, that they do not always allow decomposition and that as a single measure they assume a single mechanism affecting the distribution, while the latter implies that the incidence of low pay is always the same, leaving only the composition for further study.

⁸ It eliminates the effects of outliers and fat tails, to which we will return.

⁹ In the OECD dataset the correspondence across 15 countries to the two ratios is still stronger for the bottom half ($R^2=0.87$) than for the top half ($R^2=0.67$) but differences are small. However, definitions and years of observation are widely different. Note that levels may also differ from the Russell Sage project outcomes (see Table 3), especially for the Netherlands, in spite of a similar approach. It may be that the ECHP's household-based data are better at capturing the small jobs than the establishment survey of Dutch Statistics.

¹⁰ From this perspective better pay and especially high pay, defined for example symmetrically to low pay as over and above 1.5 times the median wage (cf. Salverda *et al.*, 2001), may deserve separate scrutiny.

Figure 1 Decile ratios of wage earnings and the low-paid as % of all employees, 2001

Measurement

The incidence of low pay is best measured from microdata to detect possible spikes in the earnings distribution especially when the LPT is close to the minimum wage, where there often is a high concentration of individuals earning the same wage¹¹. Such comparable long-run data on the level, evolution and composition of low-wage employment are scarce. The OECD has assembled the useful dataset on which Table 1 is based, which in many cases also specifies low-wage incidence. Unfortunately it has two serious drawbacks. First, it covers only full-time workers, yet part-timers play a critical role in low paid employment. Second, as we have already seen, the OECD data are based on very different definitions of earnings and cover different time periods from country to country.

It is preferable to use hourly wages since they allow the inclusion of part-timers. In addition, one can distinguish between measurements based on a head-count (HC) and those based on a full-time equivalent (FTE) basis. The latter weights jobs by the hours worked, not only part-time jobs but also full-time jobs, which show significant variation in working hours both within and across countries. The two approaches complement each other.

Stylised facts

¹¹ The incidence below a threshold situated well above the minimum wage may be less sensitive to spikes and allow a rough estimation through linear interpolation, as in the case of the US.

Recently results of an extensive international comparison initiated by the Russell Sage Foundation have become available. The study has used data from five national monographs on the UK, France, Germany, Denmark and the Netherlands, adding data from the ECHP and the PSID for a comparative volume (Schmitt *et al.*, 2009) which will be published later this year. We think that the research provides the most comprehensive, detailed and internationally comparable picture of low pay available to date.

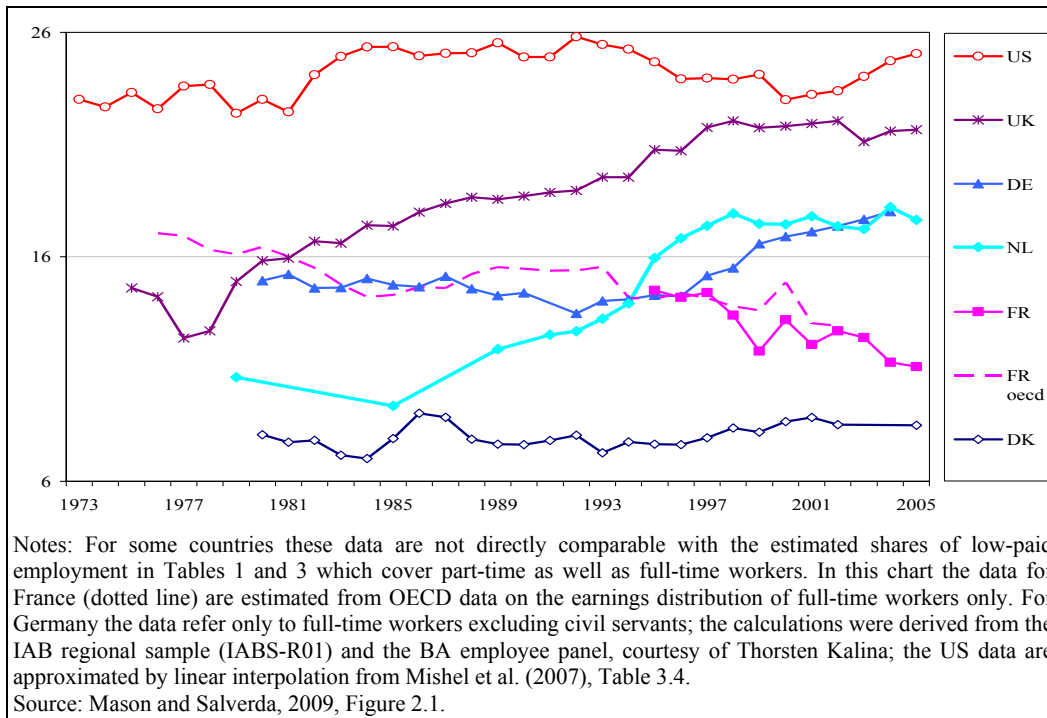
Table 3 Incidence (%) of low pay among employees* and working-age population, five countries, 2003–2005

	Denmark	France	Germany	Netherlands	United Kingdom	United States
% employees below low pay threshold, head count	8.5	11.1	22.7	17.6	21.7	25.0
% population below low pay threshold, head count	6.2	6.4	11.8	11.2	13.6	16.3
Year	2005	2005	2005	2005	2005	2003-05
Data sources	CCP / IDA	INSEE, Enquête Emploi	German Socio-Economic Panel	CBS, Loonstructuuronderzoek	ONS, Annual Survey of Hours and Earnings	BLS, Current Population Survey
*) Excluding apprentices in Denmark and Germany. Source: Mason and Salverda (2009), Table 2.1.						

Perhaps the most immediately striking finding is the high incidence of low-wage employment found for Germany in recent years. It is approaching the US level and is above the UK level (Table 3). With about a quarter of all their employees low paid, these three countries find themselves at the high end of a wide range starting at around 10 per cent for Denmark and France. Figure 1 summarises these data¹² and extends them to eight other countries which also present very divergent pictures, with a relatively low incidence in five of them (Austria, Belgium, Finland, Italy and Portugal) and a higher incidence – albeit still below 20 per cent – in the other three (Greece, Ireland and Spain). In other words none of the additional countries suffer from low pay incidence as high as in Germany, the UK and the US.

Figure 2 Evolution of rate of low-wage employment (%) in six countries, 1973–2005

¹² With somewhat higher levels for Denmark and Germany as apprentices are included.



Equally striking are the different experiences of countries since the early-mid 1970s (Figure 2). Denmark has been at the low end for many years while France has been gradually moving down there. Perhaps surprisingly, given widespread concern about increasing inequality in the US, the incidence of low pay there has remained pretty stable over the entire period. By contrast, there have been secular increases in the incidence of low pay in the UK, Germany and the Netherlands. Relating the incidence among employees to the working-age population puts Germany and the UK again at some distance below the US, reflecting lower employment rates in the two European countries.

Data available from the OECD earnings database¹³ for the other eight countries suggest stability of the incidence at a low level for Belgium and Finland and some decline from the highest level for Ireland. A comparison of ECHP for 2001 and 1995 paints a similar picture together with a stable low level for Italy and a fall to the bottom of the league table for Portugal.

There is an important relationship between part-time employment and low pay and any comparative study that focuses solely on full-timers is necessarily incomplete and misleading.

¹³ Website version of September 2008, last updated October 2007.

Table 4 indicates that, with the exception of Italy, the probability of being low paid increases when individuals' weekly working hours decline. Very high incidence rates of around 60 per cent are reached for the smallest (shortest hours) jobs in Denmark, Germany, Netherlands and US, while they are 50 per cent in Ireland and the UK. The more substantial part-time jobs (weekly hours between 15 and 35) show a very high rate for the US and as a result part-time jobs in general in that country are more often low paid than not (54%). Thus part-time work is an important component of all low wage work, ranging from around 15% of all low-wage jobs in Greece and Italy up to half in Ireland and the UK and no less than two-thirds in the Netherlands. Obviously on a full-time equivalent basis the contribution of part-time employment to low-wage employment is considerably less though still significant in many countries (varying between a 9% and 42% share).

Table 4 Low pay and part-time employment, 2001

	AT	BE	DK	FI	FR	DE	GR	IE	IT	NL	PT	ES	UK	US
<i>Incidence of low pay among part-time employees (% head count)</i>														
PT15	27	38	61	28		61	45	54	9	62	36	22	51	60
PT35	14	13	10	22	20	28	15	31	9	25	30	22	38	53
PT	16	16	19	23	20	38	18	35	9	34	31	22	41	54
FT	13	12	10	8	15	19	18	14	10	14	10	17	15	17
All	13.2	12.5	11.8	10.3	15.4	23.1	17.8	19.5	10.1	22.5	11.0	18.2	22.0	23.5
<i>Share of part-time employment in low-wage employment (%)</i>														
head count	22	29	38	34	21	35	14	49	15	64	19	20	49	39
fte	12	14	19	20	14	17	7	29	9	42	11	10	28	14
<i>Concentration of part-time employment in low-wage employment (overall share = 100)</i>														
head count	122	124	160	221	132	164	102	179	88	153	278	122	189	228
fte	116	100	120	215	126	154	93	183	84	160	301	110	204	n.a.
Note that, in contrast to most other outcomes based on ECHP, those working less than 15 hours have been included here, using the variable PE005 (not available for France where small jobs are trivial in number). PT15 - small part-time jobs < 15 hours a week; PT35 - substantial part-time jobs 15–35 hours a week; PT - part-time jobs from both categories taken together; FT - full-time jobs defined as 35 hours or more. No detail is available for small jobs in France but their overall employment share is tiny. Source: See Figure 1.														

Notwithstanding these major differences in the incidence of low pay across countries, the basic composition of low-wage employment is strikingly similar. Young people, women and minorities show high concentrations of low pay, as do workers in agriculture, retail, hotels and catering, and personal services.¹⁴ These observations are confirmed by the multivariate analysis discussed in the next section.

¹⁴ Where enough detail is available a few parts of manufacturing are also included, especially textiles.

The share of self-employment in total employment has declined considerably in many countries but still varies substantially, between lows of 8 to 9 per cent in the US and Denmark to very high shares in Greece and Italy (Table 5, row 1). It tends to be concentrated in low-wage sectors. The contrast in this respect between the US and Europe as a whole suggests that some of the self-employed in Europe may take the role that low-wage employees have in the US. It is important to keep this caveat in mind since this paper focuses on employees only.

Table 5 Self-employment and low pay, 2001

	AT	BE	DK	FI	FR	DE	GR	IE	IT	NL	PT	ES	UK	US
<i>Share of self-employed in employment</i>	17	16	9	17	14	15	43	20	33	17	22	18	14	8
<i>Share of low paid among self-employed</i>	15.8	17.4	14.6	14.4	27.0	30.8	25.9	31.6	16.6	23.7	23.1	26.4	23.0	34.2
<i>Share of low paid among all employed including self-employed</i>	13.6	13.2	10.6	10.8	17.3	22.9	21.1	20.6	12.9	19.1	13.4	19.3	20.2	24.4
<i>Change compared to the share among employees only</i>	+0.4	+0.8	+0.4	+0.8	+1.6	+1.4	+3.6	+2.8	+1.9	+0.9	+2.7	+1.5	+0.5	+0.9
On FTE basis. The incidence of low pay among the self-employed is estimated combining, across 9 industries, the incidence of low pay among employees found in ECHP with the hours worked by self-employed found in EU-KLEMS. Source: Authors' calculations from ECHP and EU-KLEMS.														

Table 6 Low pay and personal characteristics, 2001

	AT	BE	DK	FI	FR	DE	GR	IE	IT	NL	PT	ES	UK	US
All	13	13	12	10	15	23	18	20	10	23	11	18	22	24
<i>Incidence of low pay among categories</i>														
youth	42	29	62	41	57	70	59	36	35	75	19	40	49	56
adult women	13	15	7	9	17	26	18	21	9	22	14	21	26	21
adult men	3	8	3	6	8	10	10	11	7	8	5	10	8	12
adult women:men	4.0	1.8	2.1	1.6	2.2	2.5	1.8	1.9	1.3	2.7	2.7	2.1	3.3	1.7
consumer services	14	17	22	12	24	38	24	24	14	42	14	18	44	42
low skilled	34	22	38	18	19	47	27	31	14	48	14	26	33	60
<i>Shares of categories among low paid</i>														
youth	49	13	63	35	30	35	32	37	30	45	29	30	34	40
adult women	39	53	24	40	46	43	37	39	34	37	50	41	51	38
adult men	12	34	13	24	25	22	31	24	36	18	21	29	15	22
adult women:men	3.2	1.5	1.9	1.7	1.9	2.0	1.2	1.6	0.9	2.1	2.4	1.4	3.4	1.7
consumer services	37	35	42	39	32	31	38	37	33	38	39	32	47	52
low skilled	51	47	40	60	16	52	47	44	42	75	12	21	25	28
Source: See Figure 1.														

3. Probability of being low paid and earnings mobility

Table 6 depicts the probability of being low paid according to a number of personal characteristics and according to an individual's industry and occupation. Danish and Dutch youths have particularly high incidences of low pay and account for massive shares in low-wage employment. Leaving aside these extreme cases, in all countries youths are more likely to be low paid than other groups. Among adult workers, women are more likely to be low paid than men, though their relative disadvantage differs from country to country. At one extreme Italian, Finnish and American women are 30 to 70% more likely to be low paid; at the other extreme Austrian and British women are 3 to 4 times more likely.

Do these findings stand up to further multivariate scrutiny when controlling for various personal and job characteristics? Table 7 presents the results of an exercise applying the five-probit model developed by Jenkins and Cappellari (2004) which accounts best for the problems involved in studying mobility, particularly endogeneity of initial conditions, selection into employment and sample attrition¹⁵. It is based on all available waves of the ECHP (1994-2001) and waves of PSID over the same period¹⁶ to generate a sufficient number of observations needed for the analysis of earnings transitions.

The results basically bear out the received wisdom derived from the descriptives of low pay. The (relative) risks of being low paid are clearly higher for youths, women, the low skilled, for those in lower status occupations and in certain service industries in all countries. Women do less badly than elsewhere in Denmark and Italy and, Ireland; they do worst in Austria, Germany, France and the US. By contrast, age effects vary considerably across countries. Youths do worst in Denmark and Finland and best in the US. Older workers, aged 45 to 65, present a very varied picture: between at par with youths in Germany on the one hand and being (usually only slightly) better off than prime-age employees in about half of the countries on the other.

¹⁵ Blázquez and Salverda (2009) discuss these issues in more detail.

¹⁶ Unfortunately, PSID has no waves for the years 1998 and 2001 and therefore 2-years transitions had to be used. A quick check that dropped the same years for the UK analysis on ECHP found no fundamental differences. In addition, the US occupational classification is not identical to the ISCO used by ECHP and in the table the US results correspond to categories 1-19, 20-21, 30-39, 40-49, 50-59, 60-64 and 90-99, 70-89 (of the CNEF dataset) respectively.

Table 7 Individual probabilities of being low paid, 1995–2001

	AT	BE	DK	FI	FR	DE	GR	IE	IT	NL	PT	ES	UK	US
Female	0.505	0.437	0.186	0.350	0.458	0.474	0.360	0.239	0.194	0.430	0.364	0.371	0.412	0.456
<i>Age</i>														
≥30 & <45 yrs	-0.371	-0.403	-0.633	-0.788	-0.552	-0.309	-0.522	-0.413	-0.412	-0.597	-0.217	-0.381	-0.313	-0.250
≥45 & <65 yrs	-0.167	-0.286	-0.728	-0.801	-0.422	-0.004	-0.550	-0.427	-0.545	-0.346	-0.234	-0.467	-0.186	-0.329
<i>Education</i>														
Secondary	-0.272	-0.185	-0.433	-0.346	-0.090	-0.363	-0.095	-0.160	-0.115	-0.426	-0.201	-0.206	-0.244	-0.342
Tertiary	-0.276	-0.577	-0.712	-0.636	-0.389	-0.661	-0.238	-0.334	-0.125	-0.857	-0.396	-0.383	-0.320	-0.629
Part-time	0.019	0.055	0.055	0.101	-0.017	0.071	-0.096	0.136	-0.200	0.292	0.219	-0.085	0.170	0.130
Temporary contract	0.128	0.150	0.041	0.226	0.348	0.005	0.265	0.207	0.282	0.334	0.256	0.251	0.169	n.a.
Tenure ≥ 5 yrs	-0.169	-0.132	-0.056	-0.025	-0.223	-0.137	-0.111	-0.020	-0.105	-0.023	-0.027	-0.048	0.002	n.a.
<i>Occupation</i>														
Legislators, senior officials and managers.	-0.072	-0.456	-0.076	-0.205	-0.090	-0.042	-0.080	-0.075	-0.032	-0.076	0.178	-0.201	-0.186	-0.181
Professionals	-0.068	-0.327	-0.171	-0.569	-0.267	-0.134	-0.079	-0.290	0.011	-0.168	-0.061	-0.235	-0.356	-0.166
Technicians and associate professionals.	-0.018	-0.075	-0.074	-0.031	-0.114	-0.011	0.038	-0.179	0.017	-0.174	-0.078	-0.031	-0.180	-0.049
Service workers shop/market sales workers	0.309	0.378	0.461	0.258	0.455	0.302	0.166	0.311	0.286	0.311	0.381	0.279	0.529	0.319
Craft and related trade workers	0.199	0.362	0.247	0.239	0.246	0.234	0.270	0.219	0.310	0.155	0.370	0.197	0.211	0.202
Plant and machine operators and assemblers	0.260	0.344	0.266	0.363	0.342	0.156	0.119	0.149	0.166	0.285	0.159	0.178	0.494	0.045
Elementary occupations	0.407	0.420	0.403	0.579	0.527	0.304	0.311	0.285	0.413	0.386	0.401	0.306	0.620	
<i>Sector of activity</i>														
servic1	0.077	0.449	0.177	0.241	0.147	0.216	0.120	0.208	0.083	0.144	0.050	0.206	0.453	0.389
servic2	0.041	0.062	0.071	0.178	0.015	0.060	-0.027	-0.013	0.063	0.085	-0.104	0.146	0.061	-0.015
servic3	-0.054	0.167	0.133	0.247	-0.014	0.041	-0.066	0.022	-0.054	-0.021	-0.056	0.060	0.041	0.110
Low pay in previous year	1.308	1.442	1.281	1.197	1.303	1.371	1.023	1.064	1.116	1.695	1.731	0.856	1.617	1.242
Constant	-0.781	-0.917	-0.487	-0.709	-0.729	-0.766	-0.463	-0.588	-0.886	-0.688	-1.557	-0.710	-1.379	-1.043

Notes: Bold values are significant at the 5% level. The occupational classification for PSID differs from ECHP; for available waves of PSID see footnote 17. The three services industries are: 1. trade and hotels and catering, 2. transportation and other private business services, 3. public services.
Reference category: low-skilled males aged 16 to 30 and working full-time in a permanent job as a clerk outside the services sector who were not low paid in the year before.
Source: Authors' calculations on ECHP and PSID, with many thanks to Maite Blázquez and Daniella Brals.

The low-skilled do particularly badly in the Netherlands and Denmark, followed by Germany, Finland and the US. Being part-time increases the probability of being low paid in about half of the countries, particularly in the Netherlands. In Italy and Spain it actually lowers the risk while in several other countries it has no significant effect. Temporary employment has no significant effects in Denmark and Germany, but contributes importantly to low pay in France and the Netherlands and the other countries. Longer job tenure lowers the chances in half of the countries and has no significant effects elsewhere. The four obvious occupational

categories incur higher probabilities in all countries, as do workers in private consumer services: trade¹⁷, hotels and catering and personal services (not significantly in two countries), particularly in the US, UK and Belgium. Most important in all countries is state dependence: being low paid in the previous years contributes more than anything else – least in Spain and most in the UK and the Netherlands.

Table 8 Annual transition chances into and out of low-pay and high-pay states, 1995–2001

	AT	BE	DK	FI	FR	DE	GR	IE	IT	NL	PT	ES	UK	US
<i>Low pay t-1</i>														
Remaining in low pay	0.600	0.502	0.488	0.377	0.492	0.601	0.535	0.538	0.468	0.619	0.593	0.409	0.580	0.532
Escaping to high pay	0.258	0.336	0.293	0.335	0.344	0.256	0.290	0.284	0.368	0.249	0.296	0.359	0.276	0.411
Leaving to non-employment	0.142	0.172	0.229	0.314	0.171	0.145	0.182	0.182	0.166	0.136	0.117	0.243	0.148	0.079
<i>Better pay t-1</i>														
Remaining in better pay	0.894	0.867	0.887	0.857	0.870	0.895	0.850	0.870	0.873	0.903	0.891	0.836	0.870	0.869
Falling to low pay	0.033	0.052	0.030	0.038	0.048	0.035	0.053	0.047	0.033	0.042	0.034	0.051	0.061	0.081
Leaving to non-employment	0.074	0.081	0.083	0.105	0.082	0.070	0.097	0.082	0.094	0.055	0.076	0.113	0.069	0.050
Notes: Better pay is the complement of low pay and therefore a much larger category so results cannot be compared between the two earnings bands. Results may be sensitive to measurement error as a precise low-pay threshold was used without a margin of error. See footnote 17 for a remark about the waves of PSID. Source: See Table 7.														

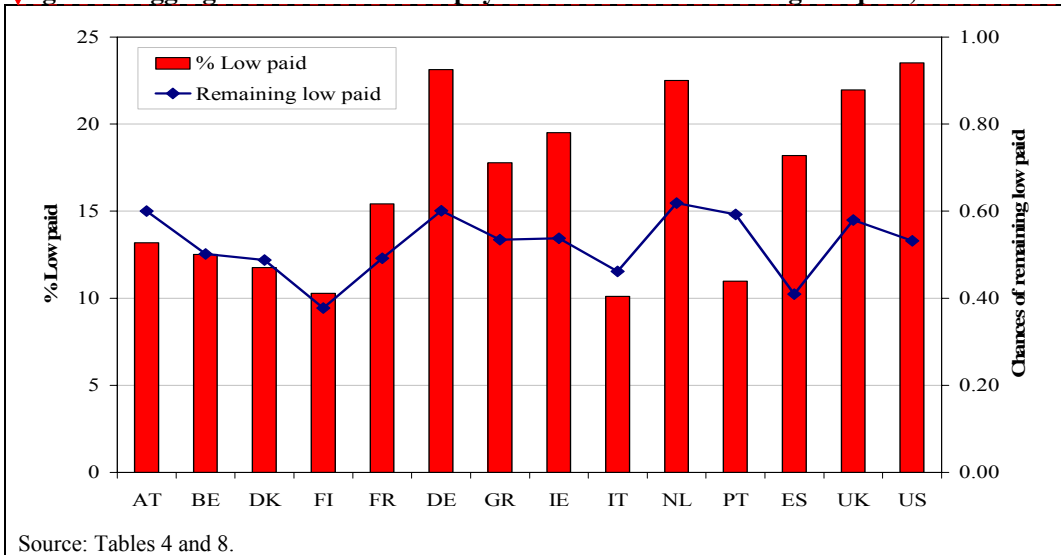
We move on to consider how easy it is to leave low pay status. The probability estimates shown above allow us to assess the likelihood of earnings (im)mobility on an annual basis - the percentages remaining in the same category of low (or better) pay, moving to the other pay category or leaving employment altogether.

It turns out that there is comparatively little difference between the countries in the extent to which employees remain in a low-paid job (Table 8). The likelihood is lowest, at around 40%, in Spain and Finland. In the other countries it ranges from 47-49% in Italy, Denmark and France to 60-62% in the Netherlands, Germany and Austria. Interestingly there is little difference between the US, which has a very high incidence of low pay, and Denmark which has a very low incidence. However, the type of transition, to either a better-paid job or non-employment, shows much more variation internationally. Notably, the chances of moving up the earnings ladder are higher in the US while, unsurprisingly, dropping out to non-employment is relatively unusual.

¹⁷ Unfortunately, retail trade and wholesale trade are not treated separately in ECHP.

Figure 3 Aggregate incidence of low pay and the risk of remaining low paid, 2001

Deleted: ¶



The likelihood of remaining in a better-paying job shows little difference across countries. US workers are slightly more likely to fall back from better pay to low pay than European workers. Transitions from better pay to non-employment are within a narrow band, again with the US at the lowest level. These drop-out chances are always below those of the low paid.

Nevertheless, the risk of remaining low paid may bear some relationship to a country's incidence of low pay as Figure 3 suggests ($R^2 = 0.22$ for a linear correlation), though there are clearly also other factors at work, such as perhaps the nature of the distribution of earnings below and around the low-pay threshold. Clearly, any causality could run in either direction. An important issue for further research is to understand the earnings increase that people need to cross the threshold and how it differs from country to country.

Table 9 Earnings distribution among the low paid, head count, 2001

	AT	BE	DK	FI	FR	DE	GR	IE	IT	NL	PT	ES	UK	US
Coeff. of variation	0.29	0.14	0.22	0.13	0.25	0.35	0.13	0.14	0.14	0.36	0.14	0.17	0.17	0.41
Decile 1 as % of LPT	39	71	50	70	46	33	66	68	67	32	66	60	61	22
Decile 5 as % of LPT	79	87	71	89	81	69	86	90	86	70	90	83	81	67
Decile 9 as % of LPT	97	97	95	99	97	97	96	97	97	95	98	98	96	93
D9:D1	2.48	1.38	1.91	1.41	2.10	2.99	1.46	1.44	1.46	2.98	1.50	1.64	1.59	4.33
mean as % of LPT	73	84	72	86	76	67	83	85	83	66	86	81	80	63
mean as % of overall mean	45	52	47	53	45	42	48	50	50	41	41	45	47	33
Overall-Decile 1 as % of LPT	95	96	97	101	90	66	88	90	100	70	100	86	83	58

Notes: head-count figures; 1% of tails were clipped at both ends of the distribution; LPT = Low-pay threshold
Source: Authors' calculations on ECHP and PSID, with many thanks to Daniella Brals.

This brings into play the within-distribution of the low-wage segment and how it compares to the rest of the earnings distribution. Table 9 indicates that the low-wage tails are much longer in some countries (US, NL, DE) than others (BE, FI, GR, IE, IT, PT, UK). In other words, in the latter group of countries there is more compression of the earning distribution just below the threshold. In Finland, Ireland and Portugal half of all low paid are found at no more than 10% below the threshold. Those at the mean of low pay would need, on average, a pay rise of 12% to reach the threshold. This contrasts with an average 44% increase needed in the US, Germany, the Netherlands and Denmark. The US stands out as a country with very low low pay and a very wide low-wage distribution, the first decile of low-wage earnings being situated at only 22% of the threshold and the mean of low wages being no more than one-third of the overall mean. We will return to this when discussing the role of the minimum wage.

Deleted: ¶

4. Why is the picture so different from country to country?

There is an abundance of potential explanatory factors, economic and non-economic, for the incidence and evolution of low pay. Often labour-market institutions such as collective bargaining arrangements or minimum wage and employment protection legislation are emphasised while economic factors receive less attention. Earlier we presented new stylised facts for various countries but mainly in cross-section comparison. Lack of long-run data prevents a full analysis of the determinants of low pay. Instead we use the new results here to take a fresh look at several possible explanations, in an attempt to sharpen the questions for further research. We start with the economic context of low pay.

Economic effects: aggregate level, skills, industry composition and consumer demand

We find no *prima facie* evidence that at the aggregate level countries with a low incidence of low pay bear the cost of it in terms of lost competitiveness and/or lost employment. A time-series comparison of the *OECD Economic Outlook's* Competitiveness Indicators with the low-pay data available for six countries from Figure 2 gives little reason to think that a country's higher incidence of low pay as such is a significant contributing factor to increased competitiveness.¹⁸ More importantly, there appears to be also no obvious correspondence across time between the incidence of low pay in a country and the total employment rate. Focusing on employment outcomes for employees in the market sector, where one may expect any effects to be best detected, the picture is mixed (see Table 10). At first sight the link seems to hold for Denmark – both employment rate and low-wage incidence trending downward - but the trend magnitudes are negligible. Germany shows a negative correlation as do France and the UK, while there is no correlation for the US. This leaves only the Netherlands as an example of significant simultaneous growth of employment and low-wage incidence. However, this observation comes with a caveat. On balance, better-paid employment per capita (FTE) tended to decline (Salverda, 2008a, 52, and 2008b, 313) which does not sit easily with rapidly increasing educational attainment, and low pay is actually

¹⁸ Note that the competitiveness indicator shows substantial volatility. Simple correlation between the two variables is never strong and in the US, Germany and the Netherlands it is even negative. In Denmark and France it is positive but small. In the UK the correlation is positive and larger (0.19) but its significance is minute ($R^2 < 0.10$).

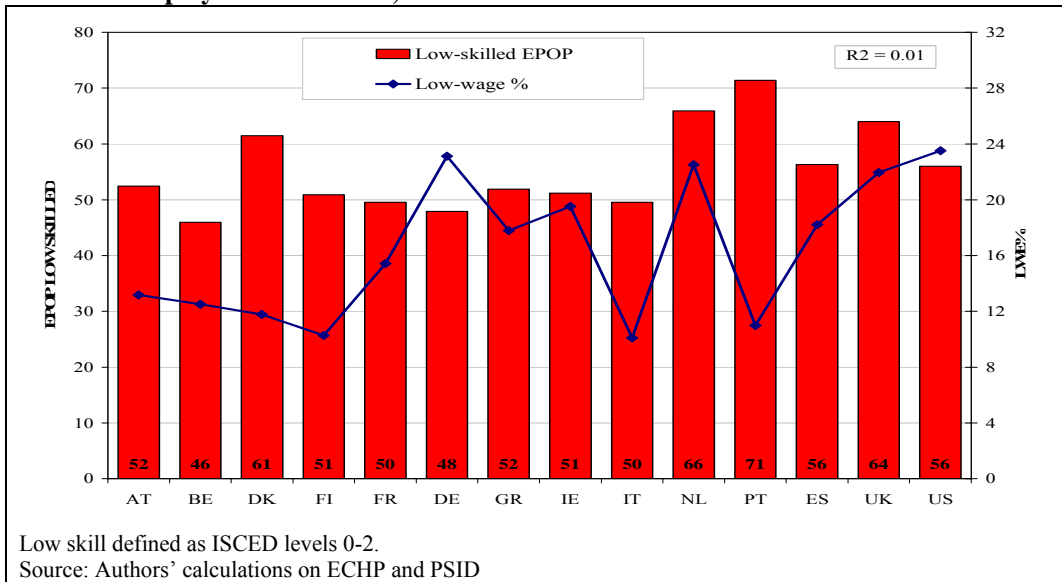
spreading to people with higher levels of education. Thus increased low-wage employment may simply reflect general wage moderation policies.

Table 10 Correlations of FTE market-sector employees-population ratio (15–64) with low-wage share among employees, 2000=100

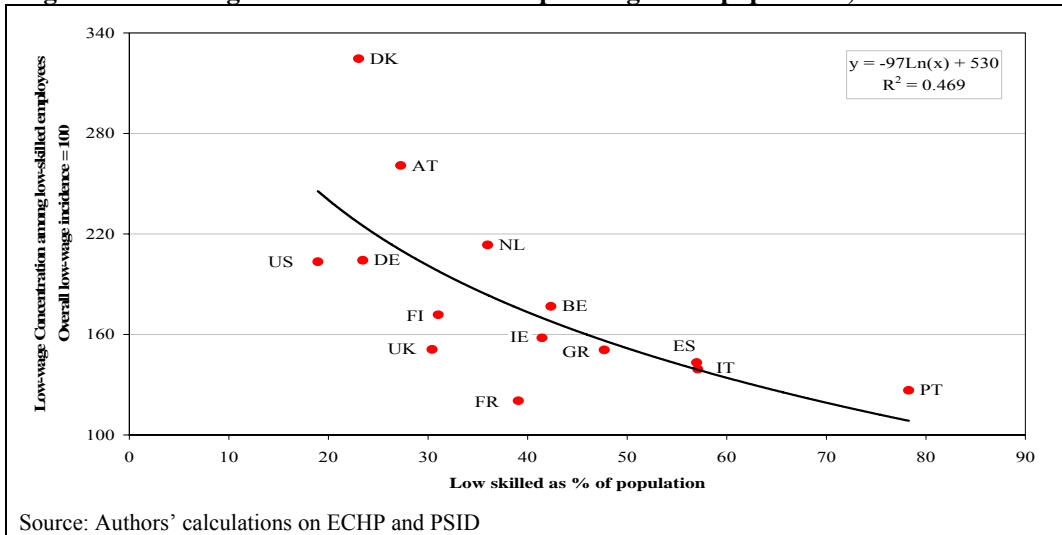
	Coefficient	R2	Effects	Period
DK	0.47	0.55	Very little movement for both	1980-2002
DE	-0.31	0.39	Negative	1980-2005
FR	-0.13	0.41	Negative	1995-2005
NL	0.36	0.80	Both considerable movements	1979, 1985, 1989, 1991-2005
UK	-0.52	0.59	Negative	1975-2005
US	0.12	0.01	Uncorrelated	1973-2005

Notes: Full-time equivalent employment-population ratio
Source: Authors' calculations on EU-KLEMS database for employment, OECD *Economic Outlook* and Labour Force Survey for working-age population, and data underlying Figure 2.

Figure 4 Employee-employment rate for low-skilled population and low-wage employment incidence, 2001



A cross-country comparison for 2001 fares no better. Employment rates are very high in Denmark and very low in France in spite of similar levels of low-wage employment in the two countries. Conversely Denmark and the US have similar overall employment rates but massively different and enduring incidences of low pay.

Figure 5 Low-wage concentration and the upskilling of the population, 2001

Perhaps more surprisingly¹⁹, any direct link between low-wage incidence and the employment rate of the low-skilled segment of the workforce, again a category where effects should be best visible (Figure 4), is virtually absent. Instead, though some of the international differences in the low-skilled employment rates may have to do with the importance of part-time employment and youth employment (as in Denmark and the Netherlands), the relative size of the low skilled population seems to be a significant factor. The smaller it is, the more the low-skilled are at risk of low pay, as illustrated by Figure 5.

We now turn to the effects that sectoral composition might have on the incidence of low-wage jobs.

First, Table 11 presents the results of a shift-share analysis of low-wage employment, decomposing the differences in the aggregate incidence of low pay for each of the 13 European countries compared to the US. Clearly, the effects of the industrial structure of employment are minor for all countries and situated within a narrow band. With one exception all European countries continue to exhibit a smaller incidence of low pay within industries than the US. The exception is Germany where aggregate incidence would slightly exceed that of the US if it had the American industrial structure. Unfortunately, the industrial breakdown by industries used in this exercise is rather limited because of data availability –

¹⁹ But compare, for example, Nickell and Bell (1995) who showed that the employment performance of the American low-skilled was no better than the European. See also Glyn and Salverda (2000).

for example manufacturing, utilities and construction are lumped together in one category and so are wholesale trade and retail trade.

Table 11 Shift-share analysis of international differences in low-wage employment shares compared to US, 2001

	Level	Decomposition of differences			
	%	Total difference	Incidence in industries	Industrial structure	Interaction of both
AT	13.2	-10	-10	-1	1
BE	12.5	-11	-8	-3	0
DK	10.3	-13	-10	-2	-1
FI	10.0	-13	-13	-2	1
FR	15.7	-8	-7	-2	1
DE	21.5	-2	1	-3	0
GR	17.5	-6	-6	-1	1
IE	17.8	-6	-6	0	0
IT	11.0	-13	-12	-1	1
NL	18.1	-5	-3	-3	0
PT	10.7	-13	-13	-1	1
ES	17.8	-6	-6	0	0
UK	19.8	-4	-2	-2	0
US	23.5	-	-	-	-

Notes: Calculated over 9 industries only; FTE basis, compared to US, 2001, ECHP and CPS based
Source: Authors' calculations on ECHP and CPS (courtesy of John Schmitt).

However, a more disaggregated picture for *average* wages and employment across 32 industries can be derived with the help of the EU-KLEMS dataset (Table 12). The industrial structures of employment in Europe, defined as industry shares in total hours worked by employees, are closely comparable to the US, though, unsurprisingly, less so for countries such as Portugal, Spain and Greece. The important finding is that the European employment structures are always substantially closer to the US pattern than the corresponding structures of wages. The employment structures of Austria, the UK, Germany, France and the Netherlands, which with correlation coefficients between 0.92 and 0.96 are most comparable to the US, are accompanied by rather dissimilar wage structures (0.61–0.80). In other words, different national wage outcomes are not necessarily incompatible with similar employment outcomes across industries. This raises questions about the relevance of institutions underlying wage formation for understanding differences in economic performance. Either the effects of specific institutions may not be negative or, if they are, they may be compensated for by other institutions as suggested by, for example, Amable (this issue).

Table 12 Correlations of European interindustry structures* to the US, 2005

	AT	BE	DK	DE	ES	FI	FR	GR	IE	IT	NL	PT	UK	US
<i>Employment (number of hours worked by employees)</i>	0.96	0.88	0.87	0.94	0.83	0.89	0.94	0.80	0.87	0.90	0.92	0.74	0.95	1.00
<i>Wages (average hourly compensation of employees)</i>	0.75	0.74	0.78	0.61	0.71	0.67	0.72	0.57	0.43	0.82	0.74	0.65	0.80	1.00
* 32 industry percentage shares in national employment. Source: Authors' calculations on EU-KLEMS														

Notwithstanding these findings, there may still be trade-offs between wage inequality and employment within the low-wage segment itself. Unfortunately, no direct, comparable data on low pay are available at this level of disaggregation but, again, the EU-KLEMS database may help to shed some light. It allows us to examine industries identified as having relatively low average wages²⁰ – this includes those already mentioned as having a high incidence of low pay (agriculture, retail trade, hotels and catering, and personal services) together with a few manufacturing industries such as textiles and leather. Panel 1 of Table 13 pictures the low-wage segment as a whole. Relative wages were in the same ball park of 60 to 70% for all countries in 1979 (except Greece). Since then they have fallen in Portugal and the US to a level of around 50% of the national average, well below the other countries. At the same time the employment shares in these two countries now exceed those of the other countries, except Spain, though they moved in opposite directions – decreasing in Portugal and increasing in the US. In most other countries, the shares remained stable or fell somewhat, and they are relatively small in many Continental countries.

It is important to distinguish between services and goods production. In the case of services the US is exceptional (see Panel II) for the evolution of wages and productivity and their ratio. However, this is less obvious for jobs growth since the employment shares of low-wage services are also found to have increased for all European countries. In some cases (particularly Greece and Italy at over 6%, but also Austria and Germany at over 4%,) the growth has been as strong as in the US while in other cases (Denmark and Finland at less than 1%) growth was minimal. Substantial level differences, however, remain for some countries, with Belgium, Denmark and the Netherlands trailing considerably behind all others with shares between only 13% and 15%.

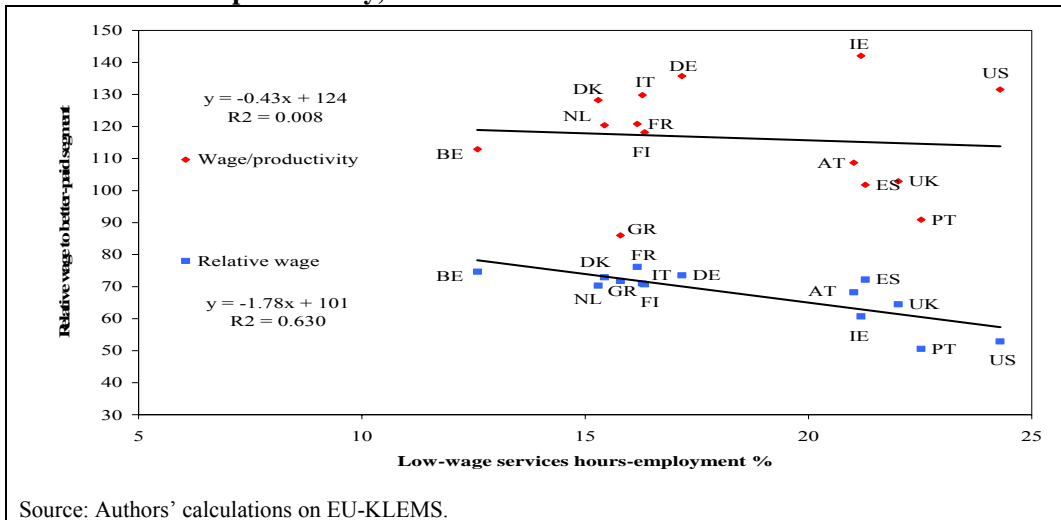
²⁰ For goods production: agriculture and fishing, textiles and leather, other manufacturing and recycling, and for services: car sales and retail trade, hotels and catering, and other community, social and personal services.

Table 13 Low-wage industries: wages, employment and productivity, 1979-2005

	AT	BE	DK	DE	ES	FI	FR	GR	IE	IT	NL	PT	UK	US
I. Low-wage services and goods together														
<i>Relative wage, % of mean wage in rest of economy</i>														
1979	71	69	71	75	70	70	68	93	64	71	74	57	59	60
1991	69	79	74	76	67	73	74	78	63	64	79	58	62	57
2005	68	74	72	73	67	69	74	68	62	68	73	48	64	54
<i>Shares in total employee hours (%)</i>														
1979	24.9	15.5	20.8	20.0	28.9	24.6	20.3	24.8	26.6	26.9	18.3	38.2	22.9	26.1
1991	24.8	15.3	19.0	19.4	26.4	21.0	19.4	24.6	27.4	25.2	18.1	34.8	22.8	26.6
2005	24.0	15.1	18.5	19.8	27.4	19.7	19.4	23.0	23.8	24.1	18.6	33.1	24.3	27.2
II. Low-wage services only														
<i>Relative wage, % of mean wage in rest of economy</i>														
1979	72	76	77	78	86	72	76	99	62	87	70	49	56	60
1991	69	83	76	79	75	76	76	74	64	69	75	63	61	57
2005	68	75	73	74	72	70.7	76	72	61	71.0	70	51	65	53
<i>Share in total employee hours (%)</i>														
1979	17.1	9.7	14.2	13.1	15.0	15.5	13.0	9.8	18.2	10.1	13.7	19.8	16.4	20.5
1991	19.3	11.0	14.0	14.4	17.4	15.9	14.6	12.9	20.9	13.3	14.1	18.5	18.6	22.4
2005	21.0	12.6	15.4	17.2	21.3	16.3	16.2	15.8	21.2	16.3	15.3	22.5	22.0	24.3
<i>Relative productivity, % of average productivity in rest of economy</i>														
1979	75	56	73	68	88	72	64	122	59	69	53	46	60	38
1991	67	64	74	65	71	72	66	91	55	62	58	60	60	38
2005	63	67	62	57	97	68	61	74	43	55	56	52	61	42
<i>Relative wage to relative productivity in rest of economy (ratio)</i>														
1979	97	138	106	121	106	103	120	84	107	128	130	112	98	159
1991	106	131	105	132	109	109	117	83	120	115	129	108	101	149
2005	109	113	120	136	102	118	121	86	142	130	128	91	103	132
III. Low-wage goods production only														
<i>Relative wage, % of mean wage in rest of economy</i>														
1979	68	57	59	70	52	65	55	89	67	61	86	66	66	59
1991	66	68	70	69	52	63	67	83	58	58	91	51	67	57
2005	67	69	69	69	50	63	62	59	72	62	84	42	63	59
<i>Share in total employee hours (%)</i>														
1979	7.8	5.8	6.6	6.9	13.8	9.1	7.3	15.6	8.4	16.8	4.6	18.4	6.4	5.6
1991	5.4	4.3	4.9	5.0	9.1	5.1	4.9	11.7	6.5	11.9	4.0	16.3	4.3	4.2
2005	3.0	2.5	3.1	2.7	6.1	3.3	3.2	7.2	2.6	7.8	3.3	10.6	2.3	2.9
<i>Relative productivity, % of average productivity in rest of economy</i>														
1979	55	51	62	51	72	65	51	85	69	54	68	33	65	55
1991	57	61	73	48	66	56	55	70	53	52	75	42	59	49
2005	60	68	62	54	56	49	52	45	36	53	59	39	56	56
<i>Relative wage to relative productivity in rest of economy (ratio)</i>														
1979	121	113	94	143	73	102	113	104	95	119	126	197	102	107
1991	115	111	95	158	78	114	131	120	109	115	121	124	113	116
2005	122	101	111	130	91	129	121	131	206	116	145	114	114	106
*) Productivity defined as value added per hour worked.														
Source: Authors' calculations on EU-KLEMS.														

The position of the US in low-wage goods production (Panel III) is not so exceptional. Strong employment declines in all countries have led to levels that are now virtually identical at around 3% of employment, apart from the four Mediterranean countries which are in another stage of economic development. The US relative wage for goods is in the same ballpark as the other countries; it has witnessed the same employment shift as the other countries and wages are in line with productivity levels.

Figure 6 Correlations of low-paying services employment share to relative wages and relative productivity, 2005

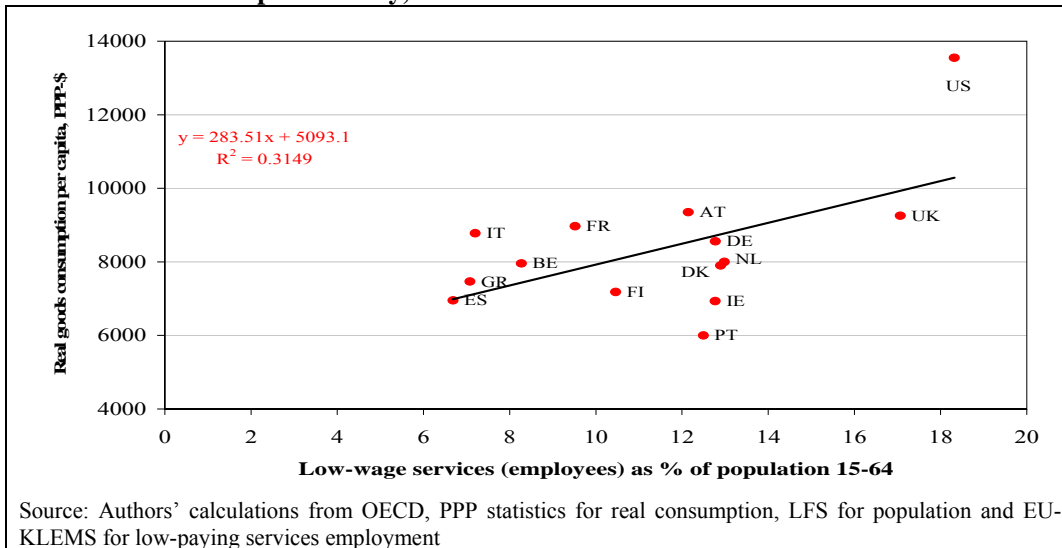


International differences in the size of the low pay segment are concentrated in services and can be substantial (up to 12% points vis-à-vis the US level of 24%). At first sight their levels seem to confirm conventional wisdom, being inversely correlated with relative wage levels (Figure 6, lower line). However, the American employment performance of low-wage services may have come at a cost especially in terms of lagging productivity. Relative productivity is found to be significantly lower (38–42%) compared to all other countries except Ireland. This is consistent with the idea that less productive labour is brought into employment when institutional barriers for low pay are lowered. However, once wages are controlled for productivity no sensible correlation is left (upper line). This seems to indicate that the higher level of US employment is not the result of better profitability. Putting it more generally, the possibility of paying low wages may not in itself provide an incentive for employment growth. In fact, some of the causality may be running in the opposite direction. Low-wage services, which are mainly catering to consumers, may depend on product demand in the economy instead of the supply side. Glyn *et al.* (2007) have shown in detail that wages in the low-wage sector of distribution (retail trade, hotels and catering), notably those of the low skilled, for the US are not out of line with the European countries of comparison – France, Germany, the UK and the Netherlands. Instead, levels of goods consumption²¹ – which is the output of the distribution sector – were found to be the dominating influence in

²¹ In a PPP-based comparison. Note that goods consumption per hour worked in retail provides an internationally comparative measure of the sector's productivity. It appears to be uncorrelated with the incidence of low pay.

explaining the international differences in distribution employment. Extending to the 14 countries studied here, Figure 7 indicates how goods consumption per capita significantly affects the level of distribution employment which is generally low paid. This consumption depends in turn on the level of consumer incomes – much higher in the US – and the rate of goods consumption out of income – again much higher in the US than in many European countries.

Figure 7 Correlations low-paying services employment per capita to goods consumption and retail productivity, 2005



Institutional effects: collective bargaining, minimum wages and employment protection

The original country studies (USA, UK, Germany, France, Netherlands and Denmark) for the Russell Sage Foundation found that an important determinant of the incidence of low pay was the inclusiveness or exclusiveness of pay-setting institutions (Bosch *et al.*, 2009). By inclusiveness is meant the existence of mechanisms, formal or informal, to extend terms and conditions negotiated by workers with strong bargaining power to workers with less bargaining power. Countries with more inclusive wage-setting institutions experienced lower incidences of low pay. Also of importance was the extent to which there was a tradition of “solidaristic” attitudes towards wage determination – meaning general acceptance of relatively narrow earnings dispersions, particularly across educational levels for full time men. We consider if the same approach can apply to the additional countries covered here.

Table 14 Bargaining coverage, union density and employer association, % of employees, and mandatory extension of collective agreements, 1980-2000

	Levels								Changes up to 2000			Formal extension
	1980		1990		1994/96		2000		BC	UD	EAR	
	BC	UD	BC	UD	EA	BC	UD	EAR	1980	1980	1994/96	
AU	98	56	98	46	100	95	35	100	-3	-21	0	No, not needed
BE	90	56	90	51	72	90	55	72	0	-1	0	Yes
DK	69	76	69	71	39	90	71	52	21	-5	13	No
DE	91	36	92	33	72	68	23	63	-23	-13	-9	Few and decreasing
SP	76	9	76	13	74	80	16	72	4	7	-2	Yes
FI	95	70	95	72	42	90	74	60	-5	4	18	No, not needed
FR	85	18	95	10	74	90	6	74	5	-12	0	Yes, very high and stable
GR	-	-	-	-	-	-	27	70	-	-	-	Yes
IR	-	-	-	-	38	-	35	60	-	-	22	No
IT	85	49	83	39	38	80	34	51	-5	-15	13	No
NL	76	35	81	26	79	80	26	85	4	-9	6	Yes, very high and stable
PT	70	61	79	32	34	80	24	58	10	-37	24	Yes, possibly decreasing
UK	70	50	47	39	54	30	29	40	-40	-21	-14	No
USA	26	22	18	16	0	14	12	0	-12	-10	0	No

Bold figures are highest of the two or three density in the particular year.
 BC – bargaining coverage; UD – union density; EAR – employer association rate (peak organisations only).
 Sources: trade union density: *OECD, 1997:71; Freeman, 2007: employer density: data for 1996/7, Traxler 2004; for 2000, European Commission 2004.*

Inclusiveness is achieved in different ways in different countries, but the essential starting point is the structure of collective bargaining. The important comparator for the purposes of measuring pay-setting inclusiveness is coverage of workers by collective bargaining (Table 14). Taking the 2000 figures, all Continental countries basically have a very high level of coverage - between 80% and 95% of the national workforce. The only exception is Germany which has seen coverage fall from the same high level in 1980 and 1990 to 68%. The relationship between this coverage and union density is different from country to country. Density varies greatly. In 2000, Denmark and Finland were at one extreme (71–74%) and Spain (16%), the US (12%) and France (6%) at the other. Identical, high levels of coverage can go together with very different levels of union density. For example, France exhibits a very high coverage despite very low union membership. In the US and the UK, by contrast, coverage is not much greater than density. This international variation reflects differences in collective bargaining arrangements. Whereas bargaining coverage fell significantly in the 20 years up to 2000 in the US, Germany and dramatically in the UK, it increased substantially in Denmark and Portugal and was relatively stable in the other countries. It is in the US, the UK and Germany where we have seen the highest incidence of low pay. In several countries

coverage stayed high in spite of a fall in union membership. In many cases the membership rate of employer associations seems to correlate better with bargaining coverage.

Membership rates of employer associations –institutions limited to Europe and almost unknown in the US – exceeds union density except in the two countries with the highest rate of worker organisation, Denmark and Finland. In the US and the UK collective bargaining essentially takes place only at the level of the firm or organisation and there is no extension to other workers. In other countries employer associations are important partners in (industry-level) collective wage negotiations. In Germany historically there was industry-level bargaining covering the vast majority of workers with the consequence that many who were not union members benefited from a collective agreement. Thus workers with a weaker position in the labour market received protection under the umbrella of stronger union presence in other industries or companies. In recent years, however, union density in Germany has fallen and many employers have withdrawn from such industry agreements, with the consequence that bargaining coverage has fallen. Union density may be the prime determinant of bargaining coverage only in Denmark and Finland, and even there the role employer associations seems to be increasing. At the same time centralisation and coordination of collective bargaining across the national economies has declined in many countries since the 1970s, not only in Germany and the UK where low-wage employment grew, but also in Austria, Denmark, Portugal and Spain where it did not (OECD 2006: 81).²²

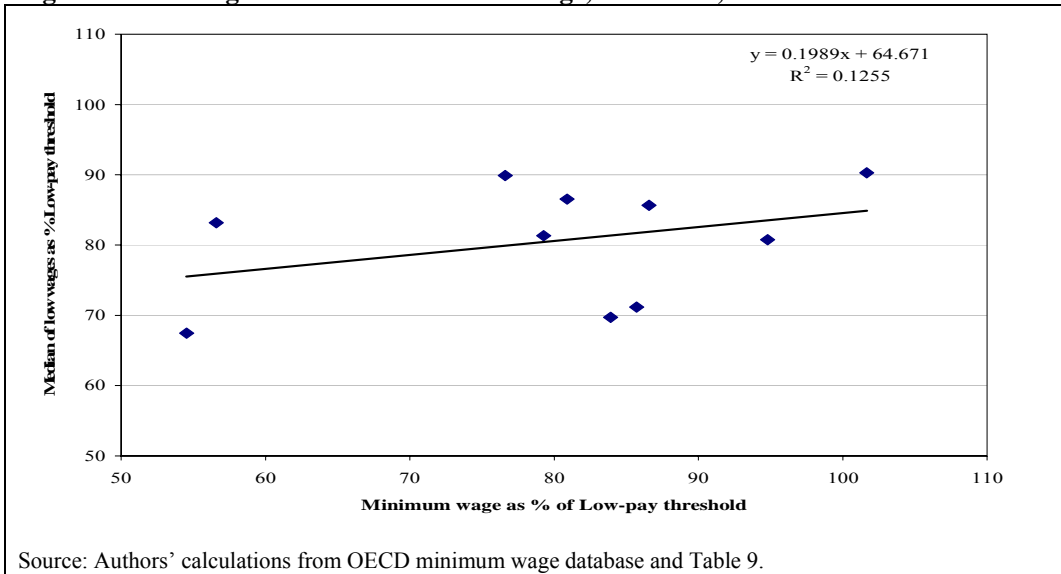
As the last column of Table 14 shows legal rules involving mandatory extension of negotiated wages to other firms and workers in the same industry may contribute to high bargaining coverage in many countries but notably not in Austria, Denmark or Finland. Although union density is tiny in France and average in the Netherlands, collective agreements are extended by law and by social custom such that about 90% coverage is achieved. In Denmark, by contrast, high coverage is achieved more directly via extremely high union density and presence at the workplace where compliance with collective agreements can be enforced. Notably, agreement extension is of limited significance in Germany.

Coverage on its own is not necessarily enough to avoid a high incidence of low pay. A high minimum wage in France is critical. By contrast, without a minimum wage Germany offers

²² In combination with the Russell Sage Foundation country studies. In the case of France we corrected the values of both the OECD indicators, for centralisation and coordination respectively. Industrywide collective bargaining is predominant and there are also tripartite national agreements which point to a value of 3.5 instead of 2 for all three periods, whilst the high level of industry bargaining and its extension by the state point to 3.5 instead of 2 for coordination.

little protection to workers no longer covered by collective bargaining. In Denmark it is not just union density which is important; so are long-held attitudes towards solidaristic wage bargaining, shared by many employers. In other words, bargaining inclusiveness can be bolstered or weakened by other institutions. In this context, in addition to minimum wage legislation, employment protection legislation (broadly defined), product market regulation and social benefits are important. In addition, there are significant differences between countries as to how far certain groups are excluded from mainstream pay setting. In Germany, for example, mini-jobbers and temporary workers can be, and are, treated differently by employers. The same applies to temporary workers in the Netherlands, and to small part-time jobs up to 1993. In France, by contrast, inclusiveness allows for few exceptions.

Four of the 14 countries in our sample have no minimum wage. Among the other ten the US was the first to introduce it, in 1938, while two others – the UK and Ireland – did so only recently. The presence of a formal minimum wage provides no automatic protection against low pay as the case of the US illustrates, nor does its absence automatically promote a high incidence of low pay as the case of Denmark demonstrates. The “generosity” of the minimum relative to the low-pay threshold varies significantly across countries. At one extreme, Spain and the US, the minimum wage is low – only slightly more than half the low-pay threshold. At the other, France and Portugal, it is high – at about the same level as the threshold. The ten cases show no obvious relationship between the level of the minimum wage and the aggregate incidence of low pay. It may, however, affect the distribution of low pay, compressing it more or less depending on its level relative to the low-pay threshold. As a first approach to the effect a minimum wage may have on the tail of low wages, Figure 8 pictures for the ten countries the minimum wage and the median of low wages, both as percentages of the low-pay thresholds. The minimum wages only weakly compresses the distribution of low pay and often substantial parts of the low-wage tail are found below the minimum wage. This is hardly surprising since no two minimum wages are equally structured, with the exception perhaps of the Irish and British ones. Legislation and regulations vary dramatically from country to country (Vaughan-Whitehead, 2008a) and so does enforcement. For example in the Netherlands there is an elaborate and frequently used system of youth minimum wages which are much lower than the adult rate and it has the highest age (23 years) at which the full rate starts to apply (Salverda, 2008b); the latter is used for the figure. Legal definitions of the relevant wage diverge importantly: hourly, weekly or monthly; including tips or overtime earnings; taking household characteristics into account (for example, Greece)

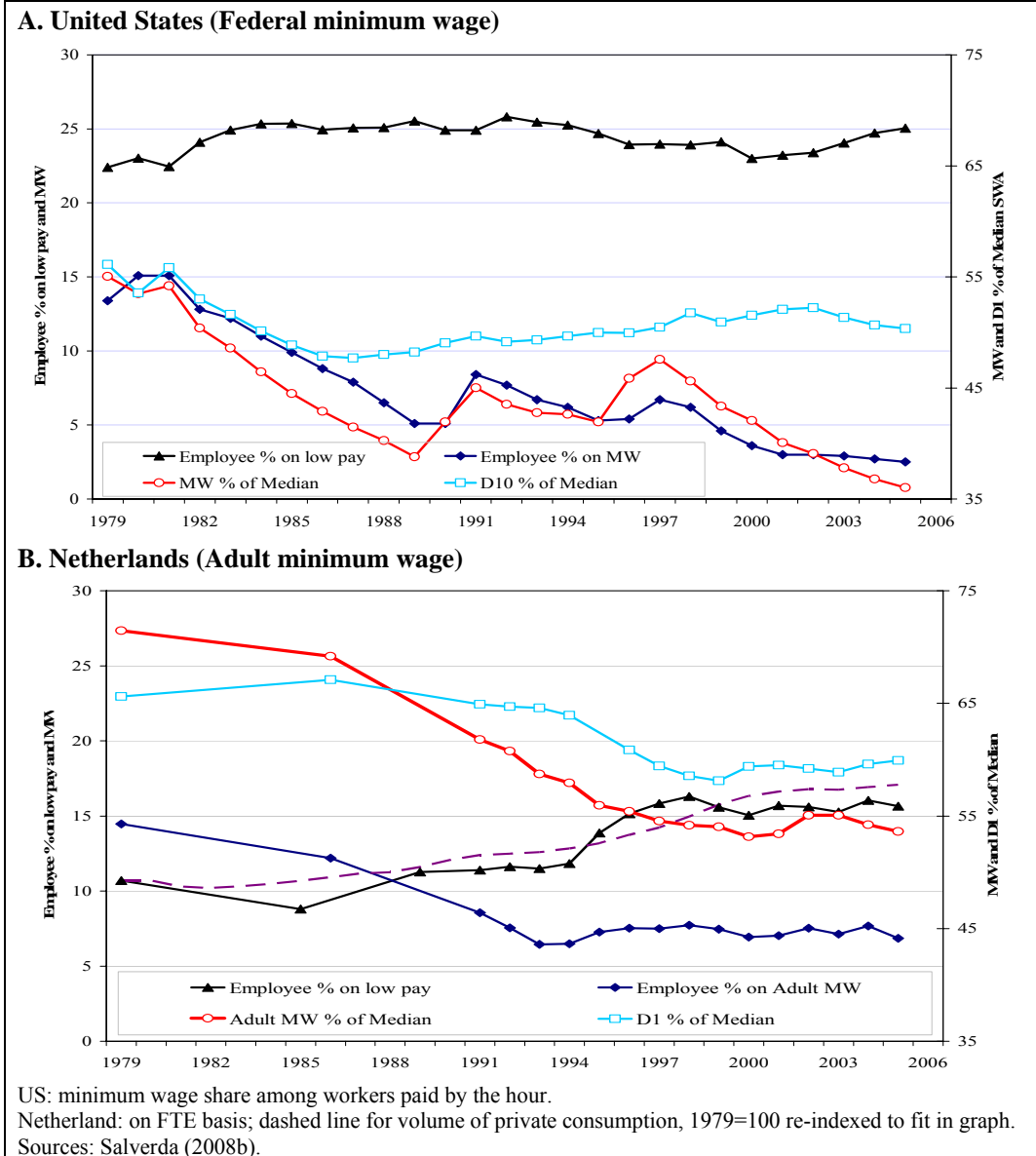
Figure 8 Low-wage median and minimum wage, % of LPT, 2001

For most countries extremely limited information is available over a longer time span about the evolution of the minimum wage, together with the incidence of low pay, relative to the rest of the earnings distribution. Figure 9 covers the only two countries for which data are available – the US and the Netherlands.

In both countries the minimum wage has suffered a strong decline since 1979. As a percentage of the low-pay threshold it fell by 19%pts in the US and by 17%pts in the Netherlands. It fell from about the level of the first decile in the US to far below, and from well above that decile in the Netherlands to about the same decile. Simultaneously the employment incidence of the minimum-wage fell by 11%pts in the US, and by 6%pts in the Netherlands.²³

²³ Note that for the Netherlands the adult minimum wage is used. This implies that many youths are included who earn above their age-related youth minimum wage. The employment incidence of the formal minimum wages declined from 9 % in 1979 to 4% in 2005. Note also that in the US, with the decline of the federal minimum wage, various state minimum wages have increased and their coverage of the workforce has shot up very quickly in recent years, up to 60–70% (Mishel *et al.*, 2009, Figure 3AC).

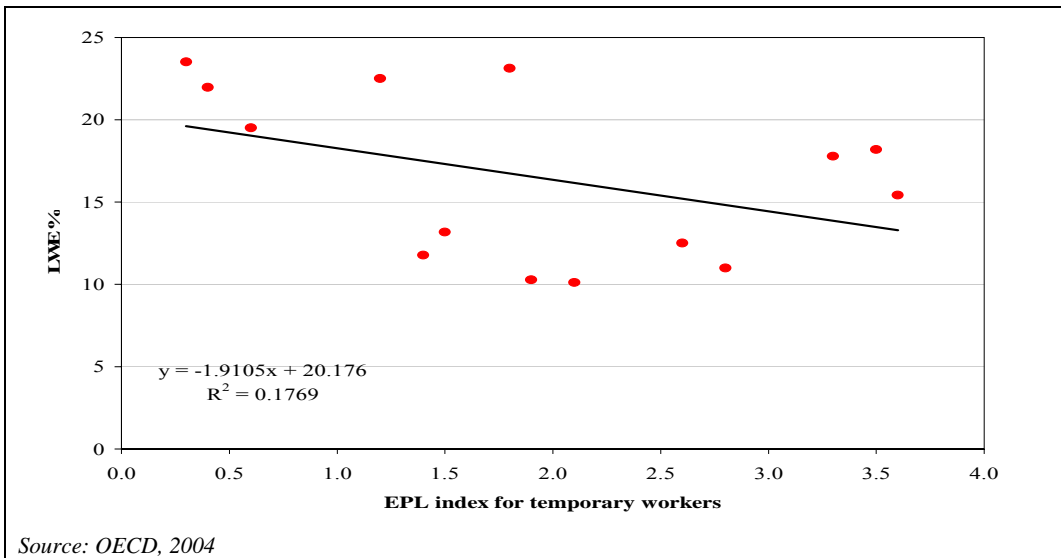
Figure 9 Relative minimum wage and first decile, minimum-wage employment share and low-wage employment share, 1979-2005



Interestingly, the effects on the incidence of low pay diverge substantially. In the US this remained basically unchanged, at the high level of about 25% of all employees. The decline of the minimum wage first widened the low-earnings tail as a whole until the mid-1980s, but subsequently seems to have lost its significance but for the very low end of the distribution - the bottom 5%. The fall of the adult Dutch minimum wage from 71% to 54% of the median

has also widened the tail of low wages²⁴. In contrast with the US, the incidence of low pay did go up, though only when most of the decline of the minimum wage was already over – it may have created the opportunity to pay lower wages which materialised only later. Low-wage incidence has more or less stabilised at a higher level since the mid-1990s. Clearly, the jury will remain out on this thin evidence. Nevertheless, we can conclude that the experiences of both countries throw up the intriguing question of how falling minimum wages will affect low-wage employment. It does not seem clear that a lower wage necessarily encourages more employment at that price..

Figure 10 Strictness of employment protection legislation (EPL) for temporary employment, 2003, and low-wage incidence, 2001.



According to the OECD's EPL indicator, the strictness of employment protection legislation varies from country to country. EPL for temporary workers appears to bear some relationship to the incidence of low pay: the stricter the legislation the less frequent is the payment of low wages (Figure 10). The correlation with EPL strictness for regular workers has the same sign but is less strong ($R^2=0.07$). The gap between the two types of EPL, which might serve to indicate the inclusiveness of such regulations, shows no correlation at all with the incidence of low pay. It should be noted that the EPL indicator is based on formal legal provisions and does not necessarily reflect actual implementation.²⁵ In France this is where low union

²⁴ Effects are shown for full-time equivalent employment to control for the exceptional growth of part-time jobs.

²⁵ Salverda (2008a, 103) criticises the indicator for its fixed weighting scheme which allows no variation over time or across countries.

density has its impact – the French case study researchers for the Russell Sage project found many examples of employer avoidance in individual establishments.

Finally, we compare three countries: the two extremes, Denmark with a stable *low* incidence and the United States with a stable *high* incidence, and in the middle the Netherlands, whose incidence was and is more comparable to Denmark but which has seen it increase significantly²⁶. How have the three countries managed to arrive at roughly similar employment rates of 75%? Again, the EU-KLEMS employment data can provide some clues. The US has an advantage for market-sector employment, which is almost entirely based on low-wage services. Denmark attains the same level of total (head-count) employment by working fewer hours on average and employing more people in health care, social work and education. The Netherlands does so by record-high part-time employment and much higher self-employment, which hide stagnating health and education and many fewer low-wage services. Interestingly, hourly wages in Danish health care and social work fell relative to the national average (by 5 percentage points since 1979) while in the US they gained significantly (by 10 percentage points).

²⁶ Germany could not be included as data problems due to unification thwart long-run comparisons.

5. Conclusions

We have explored one important dimension of earnings inequality – the incidence of low pay, which was shown to mirror inequality in the lower half of the earnings distribution. Starting with data from research for the Russell Sage Foundation on the US, France, Germany, Denmark, the Netherlands and the UK, we have augmented this body of stylised facts on low pay by adding eight more European countries. However, the data expansion is still much too limited to allow a full analysis of the implications of low pay for economic performance or of the explanations for the differences between countries in the incidence of low pay. Instead we have tried to dispel some common misperceptions and to raise questions for further investigation in an area which will remain high on the research and policy agenda (Machin, 2008).

The incidence of low pay varies dramatically from country to country, as do trends in the incidence. The extreme cases, Denmark and the US, have hardly moved for 30 years but in between some countries have undergone rapid change. Significant growth of low-paid employment was found not just for the UK but particularly also for Germany and the Netherlands. The composition of the low paid, however, shows strong similarities across all countries. Part timers, the young, women and minorities are disproportionately represented. Similarly low pay tends to be found in the same industries and occupations. However, there are some important differences. For example, Danish and Dutch youths suffer a much higher incidence of low pay and account for a greater proportion of the low paid than do youths in the other countries - youths in the US do relatively well in this respect. The relative position of adult women varies significantly, but only in Denmark is their incidence low and very close to that of adult men. The relative position of less skilled workers also shows a lot of variation across countries, being worst in Denmark and Austria. The smaller the proportion of the less-skilled in a population, the stronger the concentration of low pay among them. Multivariate analysis confirms these descriptives.

A 14-country analysis of earnings mobility found, in cross country regressions, a mild negative relationship between mobility out of low pay and its national incidence. Absolute probabilities of leaving low pay, however, do not vary much from country to country.

At the aggregate level it does not appear that countries with a small incidence of low pay bear a cost in terms of employment rates, whether for all employees or for the less skilled. This is the case whether comparing countries at any given point in time or examining time trends within the very few countries for which this can be done. To an extent countries seem able to accommodate generosity towards those in the lower reaches of the labour force by adaptation of the sectoral composition of their employment, as the Danish example shows: compensation for fewer jobs in private consumer services with more in public care –it seems with some help from declining wage levels for the latter. This points to the much neglected role of product demand as argued by, for example, Andrew Glyn *et al.* (2007).

Extending beyond the six countries in the RSF study, the pay setting institutions of an economy have a crucial role in determining the incidence of low pay. The key is their inclusiveness, particularly of collective labour agreements. This is achieved in different ways in different countries, but a common feature is either wage bargaining at a higher level than that of the company and/or mechanisms of wage leadership for extending collective agreements to broader groups of workers, be it formally or informally. In some countries bargaining is bolstered by minimum wage legislation, though it is clear that the mere presence of a minimum wage offers little protection; to the contrary in the US and the Netherlands. Its level, its universal application and its enforcement are essential. In all countries the precise effects of the formal collective bargaining system will depend upon how effectively the rules of the system are enforced at the level of the individual employer. This is where union presence at the workplace can be important, as for example in Denmark where no statutory minimum wage and no mandatory extension of collective agreements apply. Employer organisation is often as important as union density, if not more so, for understanding the coverage of collective agreements. Thus Germany has joined the US and the UK as a country suffering from a high incidence of low pay. Declines in union density and employer organisation there have reduced the coverage of agreements and, in the absence of mandatory extension and a national minimum wage, workers at the low end of the market have started to suffer. All other European countries have managed to maintain coverage in spite of hugely different and often declining union density levels.

Further research will be needed to fully consider how this story plays out against broader institutional forces as well as against economic factors. The roles of product demand and its impact on the sectoral composition of employment, of employers as wage bargainers, of social security and employment protection rules in absence of minimum wage protection, are

all important candidates for further investigation. So is the relationship between the incidence of low pay on the chances of escaping from it. For the moment it appears that, in one sense, countries have a choice as to how they treat workers at the lower end of their labour markets. The macro trade-offs so often cited by economists are not binding. In another sense, of course, they do not that choice in that it is difficult to copy the institutions of other countries which have evolved in a complex socio-cultural framework, often over long periods of time. It is easier to destroy benign institutions than it is to build them. Nor can one simply copy an economic structure that may itself be the consequence and supporter of particular institutional forms. In short, a small incidence of low pay may be a choice for a country but it is not an easy one.

References

- Atkinson, A.B., 2008. *The Changing Distribution of Earnings in OECD Countries*. Oxford University Press.
- Atkinson, A.B., and T. Piketty, editors, 2007. *Top Incomes*. Oxford University Press.
- Bazen, S., M. Gregory and W. Salverda, editors, 1998. *Low-Wage Employment in Europe*. Edward Elgar
- Blázquez, M., and W. Salverda. 2009. 'Low-Wage Employment and the Role of Education and On-The-Job Training.' *LABOUR*, Vol. 23 Special Issue "Training and Job Insecurity", March 2009, 5–35.
- Bosch, G., and C. Weinkopf, editors, 2008. *Low-wage Work in Germany*. Russell Sage, New York.
- Bosch, G., K. Mayhew and J. Gautié, 2009. "Industrial Relations, Legal Regulations, and Wage Setting". In: Schmitt and Gautié, Chapter 3.
- Caroli, E., and J. Gautié, editors, 2008. *Low-wage Work in France*. Russell Sage, New York.
- Danziger, S. and P. Gottschalk, editors, 1993. *Uneven Tides, Rising Inequality in America*, Russell Sage, New York
- Davis, S.J., 1992. *Cross-country Patterns of Change in Relative Wages*, NBER, Cambridge MA, Working Paper 4085.
- Erikson, C. and A. Ichino, 1994. *Wage Differentials in Italy: Market Forces, Institutions, and Inflation*, NBER, Cambridge MA, Working Paper 4922.
- Fotoniata, E., and T. Moutos, 2008. "Greece: Neglect and Resurgence of the Minimum Wage". In Vaughan-Whitehead, Chapter 7.
- Freeman, R.B. and L.F. Katz, editors, 1995. *Differences and Changes in Wage Structures*, University of Chicago Press.
- Glyn, Andrew, and Wiemer Salverda, "Does Wage Flexibility Really Create Jobs?" *Challenge* Vol. 43 No 1, 32–43.
- Glyn, A., J. Möller, W. Salverda, J. Schmitt and M. Sollogoub, 2007. "Employment Differences in Distribution: Wages, Productivity and Demand". In: Gregory *et al.*, 2007, 141–175
- Gregory, Salverda and Schettkat, editors. 2007. *Services and Employment, Explaining the U.S.-European Gap*. Princeton University Press.
- Harrison, B., and B. Bluestone, 1990. *The Great U-turn: Corporate Restructuring and the Polarizing of America* Basic Books.
- Jenkins S & L. Cappellari, 2004. *Modelling Low Pay Transition Probabilities, Accounting for Panel Attrition, Non-Response and Initial Conditions*, ISER working papers 2004-08, Institute for Social and Economic Research.
- Karoly, L.A., 1993. "The Trend in Inequality among Families, Individuals, and Workers in the United States: A Twenty-five Year Perspective". In: Danziger and Gottschalk, 19–97.
- Katz, L.F., G.W. Loveman, and D.G. Blanchflower, 1995. "A Comparison of Changes in the Structure of Wages in Four OECD countries". In: Freeman and Katz, 25–66.
- Lloyd, C., G. Mason and K. Mayhew, editors, 2008. *Low-wage Work in the United Kingdom*. Russell Sage, New York.
- Lucifora, C., and W. Salverda, 2009. "Low Pay". In Salverda *et al.*, 257–283.
- Machin, S., 2008. "An Appraisal of Economic Research on Changes in Wage Inequality". *LABOUR*, Vol. 22 Special Issue "The Evolution of Labour Market Inequalities", 7–26.
- Mason, G., and W. Salverda, 2009. "Low Pay, Working Conditions and Living Standards". In: Schmitt and Gautié, Chapter 2.
- Mishel, L., J. Bernstein and S. Allegretto, 2007. *The State of Working America 2006-2007*. Economic Policy Institute and Cornell University Press.
- Mishel, L., J. Bernstein and H. Shierholz, 2009. *The State of Working America 2008/2009*. Economic Policy Institute and Cornell University Press.
- Nickell, S.J., and B. Bell, 1995. "The Collapse in the Demand for the Unskilled Across the OECD", *Oxford Review of Economic Policy*. Vol. 11 No 1, 40–62.

- OECD, 1996. *Employment Outlook 1996*. Paris.
- Salverda, W. 1998. "Incidence and Evolution of Low-wage Employment in the Netherlands and the United States 1979–1989." In: Bazen *et al.*, 25–62.
- Salverda, 2008a, "Low-wage Work and the Economy". In: Salverda *et al.*, Chapter 2.
- Salverda, 2008b, "The Netherlands: Minimum Wage Fall Shifts Focus to Part-time Jobs". In: Vaughan-Whitehead ed., Chapter 10.
- Salverda, W., B. Nolan, B. Maitre and P. Mühlau, 2001. *Benchmarking Low-Wage and High-Wage Employment in Europe and the United States*. Report to the European Commission, DG Employment and Social Affairs, Brussels. (www.uva-aias.net/uploaded_files/regular/draftdef0-1-1.pdf)
- Salverda, W., M. van Klaveren and M. van der Meer, editors, 2008. *Low-wage Work in the Netherlands*, Russell Sage, New York.
- Salverda, W., B. Nolan, and T. Smeeding, editors, 2009. *The Oxford Handbook of Economic Inequality*, Oxford University Press.
- Schmitt, J. and J. Gautié, editors, 2009. *Low-wage Work in the United States and Europe*. Russell Sage, New York (forthcoming).
- Van Klaveren, M, W. Salverda and K. Tjidsens, 2009. "Retail Jobs in the Netherlands: Low Pay in a Context of Long-term Wage Moderation", *International Labour Review* (forthcoming)
- Vaughan-Whitehead, D., editor, 2008. *The Minimum Wage Revisited in the Enlarged EU*. ILO, Genève (forthcoming Palgrave).
- Vaughan-Whitehead, D., 2008a. "Minimum Wage Revival in the Enlarged EU: Explanatory Factors and Development". In: Vaughan-Whitehead, 1–53.
- Westergård-Nielsen, N., editor, 2008. *Low-wage Work in Denmark*. Russell Sage, New York.