

IFN Working Paper No. 700, 2007

# **The Design and Effects of Collectively Agreed Minimum Wages: Evidence from Sweden**

Per Skedinger

# The design and effects of collectively agreed minimum wages: Evidence from Sweden

by

Per Skedinger<sup>\*</sup>

February 20, 2007

## Abstract

Minimum wages in Sweden are collectively agreed and differ by industry. Within agreements, the rates are also highly differentiated. Minimum wages are higher in Sweden than in any of the countries with statutory rates considered in this study. This is line with the view that minimum wages are higher than otherwise when unions are involved in minimum wage setting. The reported results for Sweden do not support the suggestion that adverse employment effects are modest in systems with collectively agreed rates. This runs counter to the hypothesis that unions and employers have a good sense of what constitutes a relevant market wage for unskilled workers and use this information to set minimum wages at appropriate levels.

---

<sup>\*</sup> Research Institute of Industrial Economics, Box 55665, SE-102 15 Stockholm, Sweden, phone: +46 8 665 45 53, e-mail: per.skedinger@ifn.se. I would like to thank Peter Fredriksson, Bertil Holmlund and Erik Mellander for comments on an earlier version of this paper and Gülay Özcan for research assistance. Financial support from IFAU and Marianne och Marcus Wallenbergs Stiftelse is gratefully acknowledged.

# 1 Introduction

Most industrialised countries regulate low wages by statutory minimum rates, while a smaller number of countries – Austria, Germany, Italy, Switzerland and the Nordic countries – rely on collective bargaining with little or no government intervention (OECD, 1998). Collectively agreed minimum wages may also exist alongside a national minimum, as in France and Spain. Countries with collectively agreed minimum rates seem to share certain characteristics, namely widespread coverage of collective agreements and, in most cases, a high or medium level of centralisation of bargaining.

Minimum wages in collective agreements tend to be much more differentiated than in countries with statutory minimum wages. Not only do the agreed rates differ by industry, they may also be dependent on age, tenure, occupation or region. Systems with collectively agreed minimum wages are thus rather complex, and it is not straightforward to get a clear picture of the overall level of minimum wages. The level of complexity is well illustrated by the Swedish labour market, where 283 agreements were formed in 2004, most of which contained clauses regarding (differentiated) minimum wages (National Mediation Office, 2005).

Very little research seems to have been performed on the effects of collectively agreed minimum wages. This stands in sharp contrast to the vast research output for countries with statutory rates. In a recent survey of the “new minimum wage research” since the early 1990s, only one of 86 cited works dealing with employment effects originates from a country with collectively agreed minimum wages (Neumark & Wascher, 2006).

Despite the lack of evidence, some researchers have argued that negotiated rates, since they are applied voluntarily by employers, should be associated with only mild employment effects (see, e.g., Bazen, 2000). It has also been pointed out that it is possible that unions and employers have a good sense of what constitutes a relevant market wage for unskilled workers and use this information to set minimum wages that are associated with weak distortionary effects on the labour market (Neumark & Wascher, 2004). Others have put forward the hypothesis that unions in European countries use increases in the minimum wage as a launch pad for their wage demands leading to a larger

wage spill-over effect and a more adverse effect of the minimum wage on employment than in the United States (Dolado et al., 2000). Since workers move up the wage scale with age and tenure under collectively agreed minimum wages, spill-overs may be even larger in such systems. Neumark & Wascher (2004) argue that the presence of unions in the negotiating process may result in a higher minimum wage than otherwise, which could affect employment adversely. It thus seems to be an empirical issue whether employment effects are more adverse or not with collectively agreed minimum wages.

Due to the complexity of the collectively agreed minimum wage systems, much of the information about these systems in available surveys may not be very reliable. This is certainly the case for the description of Swedish minimum wages; for example, the assertion in Dolado et al. (1996, p.325) that "[i]n Sweden...nobody actually receives the minimum" seems to be based on evidence from a few manufacturing sectors and is not correct for other industries, like services, where minimum rates tend to be binding. In the same survey, the Swedish minimum wage bite, i.e., the ratio of minimum wages over average wages, is underestimated in relation to countries with statutory rates. The questionable information on Swedish minimum wages in Dolado et al. (1996) has also been quoted in later surveys (e.g., Dolado et al., 2000) and used as input in econometric research on, e.g., the cross-country employment effects on minimum wages (Neumark & Wascher, 2004).

This article focuses on the minimum wage system – its design and potential effects – for a single country, namely Sweden. However, much of the discussion should be relevant also for other countries with collectively agreed minimum wages. The overview of the Swedish system provides a background for a concluding discussion of the workings of, and challenges facing, countries with collectively agreed minimum wages.

## **2 Bargaining over minimum wages**

Minimum wages in Sweden are not regulated by law, but subject to bargaining between employers and unions and part of collective agreements. The agreement period is typically 1–3 years. Agreements apply to all firms that are members of a signatory employer association in the industry, whether the workers are unionised or not. Non-member firms may sign an auxiliary

agreement (*hängavtal*) with the union, in which case workers in those firms become covered by the collective agreements. Approximately 90 per cent of all workers are covered by the collective agreements, which puts Sweden among the countries with highest coverage in the world. Coverage tends to be relatively high also in low-paid sectors in Sweden, such as hotels and restaurants and retail. In general, the minimum wages are specific to the negotiating area and nationwide.

In the collective agreements, contractual wage increases as well as minimum wage levels are negotiated for various worker categories. The contractual wage increases consist of general as well as local increases, defined in SEK per hour or month. General wage increases apply to all workers in a given job or occupational group in the whole industry, while local increases accrue to workers on an individual basis. On top of the contractual wage increases, there is also wage drift, i.e., locally negotiated wage increases. Traditionally, wage drift has occurred mainly in manufacturing industries and it has assumed more modest proportions in services.

Like the contractual wage increases, minimum wages are typically not subject to local bargaining.<sup>1</sup> The minimum rates are defined as SEK per hour or month for various categories of workers, depending on negotiating area. Rates may differ depending on occupation, age, work experience, location and other characteristics. In 2004, 283 collective agreements were formed, most of which contained clauses regarding (differentiated) minimum wages (National Mediation Office, 2005). In 2005, 74 agreements were concluded (National Mediation Office, 2006).

Within each agreement the minimum wages are, or have been, subject to a number of worker and workplace characteristics. While the agreed minimum wage levels tend to increase every year, changes regarding differentiation occur less frequently. The most common forms of differentiation are based on occupation, work experience, age and region.

---

<sup>1</sup> An exception is the agreements for certain occupations among local government employees, where minimum wages may differ by municipality.

The Labour Court (*Arbetsdomstolen*) supervises the enforcement of the minimum wages. In practice, much of the monitoring of employers' compliance to the minimum rates is performed by the unions. In case of non-compliance, the employer has to refund any arrears. A common cause of non-compliance is that the employer has not (yet) adjusted wage rates in accordance with the latest agreement.

### 3 The evolution of minimum wages

Due to the large number of collective agreements, the description in this section focuses on seven agreements for manual workers, namely the "Engineering Agreement" (*Teknikavtalet Metall*, formerly *Verkstadsavtalet*), the "Construction Agreement" (*Byggnadsavtalet*), the "Slaughter-house Agreement" (*Slakteri- och charkuteriavtalet*), the "Bakery Agreement" (*Bageriavtalet*), the "Retail Trade Agreement" (*Detaljhandelsavtalet*), the "Hotels and Restaurants Agreement" (*Hotell- och restaurangavtalet*) and the "Local Government Agreement" (*Kommunalavtalet*). The selected agreements include negotiating areas for both manufacturing and service industries, both private and public sectors, as well as some of the largest agreements on the Swedish labour market. The six unions that are signatory parts of the seven agreements had 1,227,000 members in 2002 (Kjellberg 2003), which amounts to 74 per cent of the total membership of the Swedish Confederation of Trade Unions (*Landsorganisationen, LO*).<sup>2</sup>

The period of study is 1970–2006. The presentation is based on a "prototype worker" in order to achieve comparability of minimum rates across agreements and years. The characteristics of the prototype worker are the following: at least 20 years of age, with no work experience and working in an unskilled occupation in a non-metropolitan area. A worker with these characteristics is expected to have the lowest minimum wage for an adult worker in each agreement.

The evolution of minimum rates for the prototype worker is described in real terms as well as in relation to average wages (a measure known as the

---

<sup>2</sup> The Food Workers' Union (*Livsmedelsarbetareförbundet*) is signatory part of both the Slaughter-house Agreement and the Bakery Agreement.

“minimum wage bite” or the “Kaitz index”). In addition, the degree of differentiation of minimum wages (in relation to the prototype worker) is shown, with respect to occupation, age and work experience. The presentation does not consider regional differentiation, as its use has been limited in the selected agreements. The section concludes with an international comparison of minimum wages.

### **3.1 Real minimum wages and the minimum wage bite**

*Figure 1* shows the real minimum wage per hour, in 2006 prices, for the prototype worker in the selected agreements during the period 1970–2006. (For the Local Government Agreement, information is available only for 1995–2006.) The minimum rates are deflated with the consumer price index and reflect the purchasing power before taxes for a prototype worker on the lowest rate.

According to the figure, real minimum wages increased markedly during the 1970s and remained fairly stable up to the mid-1990s. Since then minimum wages have increased again, but to varying degrees across agreements. Since 1995, the real value of the minimum wage has increased mainly in the service sectors. In Hotels and Restaurants the increase amounts to 44 per cent, and in Retail 41 per cent. In 2006, the highest minimum wage is to be found in the Bakery Agreement, 93.21 SEK (about 10 euros), while the lowest is in Engineering, 76.76 SEK (about 8.5 euros). The minimum wage is expressed as a monthly wage in the Local Government Agreement and this wage has been re-calculated to an hourly wage in the figure, under the assumption of a 40-hour work week. The minimum monthly rate in this agreement is 13,800 SEK in 2006, and the re-calculated hourly minimum is 78.86 SEK.<sup>3</sup>

---

<sup>3</sup> Many workers who are affected by the Local Government Agreement work less than 40 hours per week and also have additional holidays (SALAR, 2005). Hence the re-calculation to an hourly wage is likely to understate the minimum wage in this agreement as compared to the other agreements in this study.

*Figure 2* relates the minimum wage to average wages in the corresponding industry for the period 1970–2005.<sup>4</sup> The highest minimum wage bite in 2005, 86 per cent, is in the hotels and restaurants industry, while construction and engineering exhibit the lowest, 58 and 63 per cent, respectively. It is thus to be expected that more workers are affected by minimum wages in the first-mentioned sector. Since the beginning of the 1980s, there is a trend decrease in the minimum wage bite in engineering, from a peak of about 80 per cent. In other industries, changes in the bite have been smaller. During recent years, there is a tendency to an increasing bite in the two private service sectors, hotels and restaurants and retail. The increases in the bite are, however, smaller than the increases in real minimum wages (in *Figure 1*).

### **3.2 Differentiation of minimum wages**

In the selected agreements, the most common criteria used for differentiation of minimum wages for adult workers have been occupation, experience, age and region over the period 1970–2006 (Skedinger, 2005). In total, the number of criteria for differentiation has decreased from 20 to 13 in the six agreements that can be followed during the whole period (i.e., excluding Local Government). In those agreements, it is mainly differentiation by region that is no longer used.

The most common criterion is experience, which is used in all six agreements at present, and occupation, which is used in all agreements except Retail. Experience is defined in somewhat different ways in the agreements: sector- or occupation-specific experience or tenure on the present job. Differentiation by occupation tends to be based on grouping of occupations, according to required responsibility and skill levels. A typical example is the Engineering Agreement, where four occupational groups have been used since 1983. Group 1 includes "jobs that require insignificant or little effort in a fairly good work environment and are performed according to detailed instructions and routines". Group 4 includes "skilled jobs with great demands on judgement, responsibility".

As far as the use of differentiation by age is concerned, the picture is mixed. This type of differentiation has not been used at all in some agreements,

---

<sup>4</sup> The industries in the data on average wages do not in all cases correspond exactly to the industries in the agreements. For example, data are not available for average wages in bakeries and slaughter-houses, so data for the food industry as a whole have been used.



and has been used throughout the period in others. In yet other agreements, age differentiation has been introduced or abolished during the period. To the extent that differentiation has been used, it has mainly been limited to two groups – workers over and under 19 years of age, respectively.<sup>5</sup>

The discussion so far relates to the use of various criteria for differentiation and says little about whether the *degree* of differentiation has increased or decreased. We now turn to this issue. *Figure 3* shows the degree of differentiation by *occupation*. The minimum wage for the prototype worker, with an unskilled job, is related to the minimum wage for a skilled worker (with the same characteristics as the prototype worker in other respects). The larger is the relative minimum wage for the prototype worker, the less is the degree of differentiation.

In *Figure 3* differentiation by occupation is most evident in the Construction Agreement, where the minimum wage for an unskilled worker is exactly 70 per cent of the corresponding wage for a skilled worker (during 1997-2005).<sup>6</sup> There is also relatively much differentiation in the Engineering Agreement. In the Slaughter-house Agreement, the minimum wage for the prototype worker has even been higher than for the skilled worker, up to 1984.

No common trend is visible in the figure – the degree of differentiation by occupation has decreased in some agreements and increased in others. The changes that have occurred have consisted of both gradual, small changes over a long period and the occasional, large shift. One example of the latter is the decrease in the relative minimum wage for unskilled workers in the Engineering Agreement in 1984 from 100 to 83 per cent.

The degree of differentiation by *experience* is presented in *Figure 4*. The minimum wage of the prototype worker, without experience, is related to the minimum wage of a worker with one year's experience. As in the previous

---

<sup>5</sup> Differentiation by age for non-adult workers, i.e., workers below the age of 18, is not considered in this section. Such differentiation is used in most of the selected agreements.

<sup>6</sup> The Retail Agreement, which has not contained any differentiation by occupation during the period, and the Hotels and Restaurants Agreement, where each occupation had a separate minimum wage up to 1992, are not shown in the figure. See Skedinger (2005) for details regarding the latter agreement.

figure, differentiation is relatively pronounced in the Construction Agreement. The smallest degree of differentiation is in Hotels and Restaurants and Retail.<sup>7</sup> There is a tendency towards increased differentiation, i.e., decreasing minimum wages for inexperienced workers. Consequently, there is no large increase of the relative minimum wage for the prototype worker in any of the agreements. Instead, the relative minimum wage has decreased in agreements like Bakery, Slaughter-house and Construction. During recent years, however, relative minimum wages have remained fairly stable.

*Figure 5*, which also includes the Local Government Agreement, shows differentiation of minimum wages by *age*. The minimum wage for the prototype worker, who is 20 years old, is contrasted to the minimum wage for an 18-year-old. Again, Construction displays the largest degree of differentiation, with a 40 per cent higher minimum wage for the 20-year-old in 2004. A notable development occurred in the Hotels and Restaurants Agreement in 1993 (to which we will return when discussing the effects of minimum wages). In this year, differentiation by age increased markedly as the minimum wage for the 18-year-old was reduced to 44.90 SEK per hour, from 51.90 SEK the previous year, at the same as the minimum for the 20-year-old increased to 52.85 SEK. This is an example of a nominal (minimum) wage reduction, which is extremely rare in collective agreements in Sweden and should be seen against the background of rapidly increasing unemployment in the first half of the 1990s. Apart from the early 1970s, there is an overall tendency towards increasing differentiation in the agreements, although one of them (Retail) differs, albeit modestly, in this respect.

The overall impression from Figures 3–5 is that minimum wages are differentiated, but that there are differences across agreements, both with respect to the degree of differentiation and its development over time. Differentiation is most pronounced in the Construction Agreement, but it is not obvious that this has repercussions on wage formation and employment in this sector, as probably few workers earn the minimum wage. There is a trend towards more differentiation by experience and age, while the picture is more diverse regarding differentiation by occupation. The first observation is well in

---

<sup>7</sup> The Engineering Agreement, in which no differentiation of the type considered in the figure has been used during the period, is excluded. However, differentiation based on experience more or less than two years has been used in this agreement since 1988.

line with the studies pointing to more wage dispersion in general since the early 1980s (see Edin & Holmlund, 1995). A possible explanation of the second observation, regarding differentiation by occupation, is that skill requirements have increased in certain industries, like engineering and construction, while the distinction between different occupations has become more blurred in other sectors.

*Figure 6* displays a formal measure of the dispersion of minimum wages in the agreements, namely the coefficient of variation, for the period 1974–2005 (excluding the Local Government Agreement). This measure is independent of wage inflation and is based on the (unweighted) minimum wages in Figures 3–5.<sup>8</sup>

On the one hand there is a discernible trend towards increasing dispersion of minimum wages *within* agreements (where minimum wages differentials across agreements are held constant)<sup>9</sup> in Figure 6. Since the end of the 1990s, the dispersion has not increased, however. On the other hand, there is no trend in the dispersion of minimum wages for the prototype worker *between* agreements since the end of the 1970s.

For a number of reasons, the increased dispersion of minimum wages within agreements does not necessarily imply that wage dispersion has increased to the same extent. Firstly, and as mentioned previously, few workers are likely to be earning minimum wages in some of the agreements. It is also in those agreements, namely Engineering and Construction, where minimum wage dispersion has increased the most. Secondly, a school reform in the early 1990s, that involved an extension of the length of education for many teenagers, has probably reduced the number of 18-year-olds in the labour force relative to older workers. An increased differentiation of minimum wages by

---

<sup>8</sup> It should be noted that the differentiation of minimum wages in the agreements is more complex than can be described in a few figures or by a single measure of dispersion, especially regarding differentiation by experience.

<sup>9</sup> The time series for skilled workers in the Slaughter-house Agreement, which does not start until 1981, has been excluded in the calculation of the coefficient of variation. Inclusion of this series does not affect the results for 1981–2005 significantly.

age, as defined in this study, is thus likely to affect fewer workers today than before the 1990s.

### 3.3 International comparisons

How do Swedish minimum wages relate to the rates in other countries? *Table 1* shows the minimum wage bite for Sweden and some other industrialised countries. Sweden is compared to countries for which available information is considered to be reliable, namely countries with statutory minimum wages.<sup>10</sup> In contrast to the bite in Figure 2, the denominator in Table 1 consists of wages in the manufacturing sector as a whole. Another difference is that the bite is based on median, not average, wages, which should make cross-country comparisons more reliable, as the countries vary a great deal regarding the degree of wage dispersion.

According to the table, minimum wages are highest in Sweden, followed by Australia and France. The Swedish bite is between 60 and 72 per cent, depending on industry.<sup>11</sup> In countries like the UK and the US, the minimum wage bite is considerably lower, 43 and 32 per cent, respectively. Table 1 also presents information on differentiation by age, namely the age limit for receiving a full minimum wage. Most countries, among them France and the US, have less of differentiation than Sweden in this respect. In Sweden, the limit is between 18 and 20 years of age. Some countries, notably the Netherlands and the UK, reduce minimum wages also for workers who are older than 20 years.

Thus, for young workers in some industries the bite in Sweden is overstated in relation to, e.g., France. For workers with more skills than is required for the lowest minimum wage (for a 20-year-old) the opposite holds: the bite for these workers is understated in Sweden, since minimum wages are more differentiated also in the skill dimension.

---

<sup>10</sup> Available surveys of minimum wages tend to report minimum wages and the minimum wage bite in the form of single figures. Since there are many different rates in countries with collectively agreed minimum wages, such exact figures should be regarded with some skepticism, at least in cases when no details on computations behind the figures are presented. However, there is reason to believe that minimum wages are higher in countries with collectively agreed rates than in countries where regulation is by law.

<sup>11</sup> Dolado et al. (1996) report a minimum wage bite of 52 per cent for Sweden in 1992. The calculations behind this figure, which is not confirmed by this study (cf. Figure 2) or other sources that have been consulted, are not accounted for by the authors.

## 4 Effects of collectively agreed minimum wages

The description so far can be summarised as follows: Minimum wages in Sweden are agreed in collective agreements, differentiated within agreements to a large and increasing extent, and rather high relative to countries with statutory minimum wages. What effects might these aspects of the minimum wage system have on important labour market outcomes, like employment and wage dispersion?

Skedinger (2006) analyses employment effects in the hotels and restaurants industry during the period 1979–1998. As demonstrated in Figure 2, this is the industry with the highest minimum wage bite in Sweden (86 per cent in 2006). So, if any adverse effects of minimum wages exist, they are likely to show up in hotels and restaurants. In the analysis, the approach in Abowd (2000a, 2000b) and Kramarz & Philippon (2001) is used and modified. This approach utilises a “natural experiment”, based on the position of individual workers in the wage distribution. Employment outcomes in a “risk group” that is potentially affected by minimum wage changes, i.e., individuals with a wage near the minimum, are compared to outcomes for a control group.<sup>12</sup> A distinction is made between the possibility of an increased *outflow* from employment due to real minimum wage increases (between two consecutive years) and the possibility of an increased *inflow* because of real minimum wage decreases. The two flows are not necessarily symmetric.

---

<sup>12</sup> The control group is defined as employees with the same minimum wage as the risk group and wages within an interval just above the wages of the risk group (as in Abowd, 2000a, 2000b and Kramarz & Philippon, 2001), alternatively as a group within the same wage interval as the risk group, but with a lower minimum wage. The latter approach is feasible due to the differentiation of minimum wages.

The results in Skedinger (2006) indicate that real minimum wage increases are associated with an increased probability of job separations, relative to the control group. To a certain extent, the probability of job accessions also increases when real minimum wages decrease. The estimated effects are relatively large; an increase of the minimum wage by 10 per cent tends to decrease the employment probability in the risk group by about 5 per cent.<sup>13</sup> As minimum wages are more binding in hotels and restaurants than in other industries, these results may represent an upper bound of the employment effects in Sweden. Another notable result in the study is that *no* employment effect is found for teenagers (aged 18–19) during the period 1993–1998. A possible explanation of this finding is the introduction of age-differentiated minimum rates in 1993 (as seen in Figure 5). This change in the design of the minimum wage system reduced the rates for teenagers in the industry considerably.

Results in Edin & Holmlund (1994) also point to negative employment effects of minimum wages. The study uses data aggregated by industry and concerns 18-year-old workers in manufacturing during 1972–1991.

What about spill-over effects? With increasing minimum wages, say, firms may wish to substitute workers with higher marginal productivity for lower-productivity workers, thereby increasing demand and wages for the former group. There may also be a ripple effect if high-wage workers increase their wage claims, in order to restore wage differentials. Effects of minimum wages on the wage distribution have been analysed by Edin & Holmlund (1994) and Östros (1994). Data aggregated by industry (for manual workers in the engineering, sawmills, paper and wood industries and for non-manual workers in mining and manufacturing) are used for the period 1971–1992. The two studies examine to what extent increasing minimum wages have contributed to the increasing relative wages for young workers that have been observed (especially during the first half of the 1970s). The results suggest that both minimum wages and the labour supply of young workers, i.e., the size of the population cohorts, have contributed to increasing wages for this group. The effects of minimum wages are larger for manual than for non-manual workers;

---

<sup>13</sup> It should be noted that the implied elasticity (–0.5) is conditional on previous employment, and is thus not directly comparable to the unconditional elasticities that are typically estimated in the literature. However, conditional elasticities may be of specific interest, since they concern the individuals who are most likely to be affected by minimum wages.

the wage elasticities, which are dependent on age group, are 0.6 and 0.05–0.2, respectively.

## 5 Concluding comments

There are no statutory minimum wages in Sweden. The minimum rates are collectively agreed and differ by industry. Within agreements, the rates are also highly differentiated, mostly by occupation, experience and age. Swedish minimum wages are relatively high by international standards. The minimum wage bite in Sweden, which ranged from 60 to 72 per cent in 2004, is higher than in any of the statutory systems considered in this study.

The results seem to support the view that minimum wages are higher than otherwise when unions are involved in minimum wage setting. There is not much evidence on the effects of minimum wages in countries with collectively agreed rates, but the reported results for Sweden do not suggest that employment effects are modest in such systems. Results for hotels and restaurants in Skedinger (2006) indicate negative employment effects, as well as evidence for various manufacturing industries in Edin & Holmlund (1994). This runs counter to the hypothesis that unions and employers have a good sense of what constitutes a relevant market wage for unskilled workers and use this information to set minimum wages at appropriate levels.

The high minimum rates in Sweden may well be influenced by politically determined factors, such as the generosity of unemployment benefits and social assistance. In a bargaining framework, a high degree of generosity in these respects is expected to lead to a higher floor for minimum wages, but there is not much empirical evidence available on this issue.

It has been argued that wage spill-overs may be larger in systems with collectively agreed minimum wages, since workers move up the wage scale with age and tenure. There is some Swedish evidence indicating the presence of wage spill-overs (Edin & Holmlund, 1994, Östros, 1994), but the results are confined to young workers and little is known about effects further up the wage distribution. However, the results are in line with statements by representatives of unions as well as employer organisations (Andersson & Kainelainen, 2007;

Kommunal, 2003; Svenska Dagbladet, 2003), to the effect that minimum wage hikes contribute to increasing other wages. If wage-spillovers are stronger under collectively agreed rates, this may contribute to more adverse employment effects.

It is not an easy task to assess the influence of collectively agreed minimum wages on the functioning of the labour market. Not only are such systems highly complex, as shown in this study. Collectively agreed rates may also tend to co-exist with other institutions, such as strong reliance on active labour market policies and stringent labour standards regarding work hours and work rules, which are also likely to affect the workings of the labour market.

Is the Swedish model, with no government involvement in minimum wage setting, sustainable in the face of increasing competition from low-wage countries? The accession to the European Union of new member states from Central and Eastern Europe seems to pose specific challenges to systems with collectively agreed minimum wages in the old member states. Firms operating temporarily with their own personnel in other EU countries should, according to the posted workers Directive of 1996, adhere to the minimum wage legislation of the host country. However, Sweden has no statutory minimum wages. Neither are the rates in the agreements legally extended to non-covered sectors. So, at present, it seems unclear how to interpret the Directive regarding minimum wages for a country like Sweden (Jacobsson, 2004).

The labour dispute in the EU Court between the Latvian company *Laval un Partneri* and Swedish trade unions that put the company under blockade, and subsequently out of business, is the first in its kind in the post-enlargement EU (Woolfson & Sommers, 2006). The main alternatives to the current system are statutory minimum wages or legally extending the rates in the agreements to uncovered sectors, as in Finland and Norway. The latter alternative represents a smaller deviation from the traditional Swedish model of industrial relations.



## References

Abowd, J M, F Kramarz, T Lemieux and D N Margolis (2000a), "Minimum Wages and Youth Employment in France and the United States", in Blanchflower, D och R Freeman (eds), *Youth Employment and Joblessness in Advanced Countries*, University of Chicago Press.

Abowd, J M, F Kramarz, D N Margolis and T Philippon (2000b), "The Tail of Two Countries: Minimum Wages and Employment in France and the United States", IZA DP No. 203.

Andersson, D and A Kainelainen, A (2007), "Vem vinner på lägre löner?", Confederation of Swedish Trade Unions (LO), Stockholm.

Bazen, S (2000), "The Impact of the Regulation of Low Wages on Inequality and Labour-Market Adjustment: A Comparative Analysis", *Oxford Review of Economic Policy*, 16, 57–69.

Dolado, J, F Kramarz, S Machin, A Manning, D Margolis and C Teulings (1996), "The Economic Impact of Minimum Wages in Europe", *Economic Policy*, 317–357.

Dolado, J J, F Felgueroso and J F Jimeno (2000), "The Role of the Minimum Wage in the Welfare State: An Appraisal", *Swiss Journal of Economics and Statistics*, 136, 223–245.

Edin, P-A and B Holmlund (1994), *Arbetslösheten och arbetsmarknadens funktionssätt*, appendix 8 to Långtidsutredningen 1994. Fritzes, Stockholm.

Edin, P-A and B Holmlund (1995), "The Swedish Wage Structure: The Rise and Fall of Solidaristic Wage Policy?", in Freeman, R and L Katz (eds), *Differences and Changes in Wage Structures*", University of Chicago Press.

Jacobsson, G (2004), "Oklart rättsläge för svenska kollektivavtal i EU", *LO-tidningen*, December 3, 2004.

Kjellberg, A (2003), "Arbetsgivarorganisationer och fackföreningar i ett föränderligt arbetsliv", in von Otter, C, (ed), *Ute och inne i svenskt arbetsliv*, National Institute for Working Life, Stockholm.

Kommunal (2003), "Höjd lägstatlön gynnar alla", Municipal Workers' Union, Stockholm.

Kramarz, F and T Philippon (2001), "The Impact of Differential Payroll Tax Subsidies on Minimum Wage Employment", *Journal of Public Economics*, 82, 115–146.

Low Pay Commission (2005), *National Minimum Wage. Low Pay Commission Report 2005*, London.

National Mediation Office (2005), *Avtalsrörelsen och lönebildningen 2004. Medlingsinstitutets årsrapport*. National Mediation Office, Stockholm.

National Mediation Office (2006), *Avtalsrörelsen och lönebildningen 2005. Medlingsinstitutets årsrapport*. National Mediation Office, Stockholm.

Neumark, D and W Wascher (2004), "Minimum Wages, Labor Market Institutions, and Youth Employment: A Cross-National Analysis", *Industrial and Labor Relations Review*, 57, 223–248.

Neumark, D and W Wascher (2006), "Minimum Wages and Employment: A Review of Evidence from the New Minimum Wage Research", WP No. 12663, NBER, Cambridge, MA.

OECD (1998), *Employment Outlook*, OECD, Paris.

Östros, T (1994), "Do Minimum Wages Matter? The Case of Swedish Mining and Manufacturing", in Holmlund, B (ed), *Pay, Productivity, and Policy. Essays on Wage Behavior in Sweden*. Trade Union Institute for Economic Research (FIEF), Stockholm.

SALAR (2005), "Rätt uppgifter om lönevillkor", Swedish Association of Local Authorities and Regions, Stockholm.

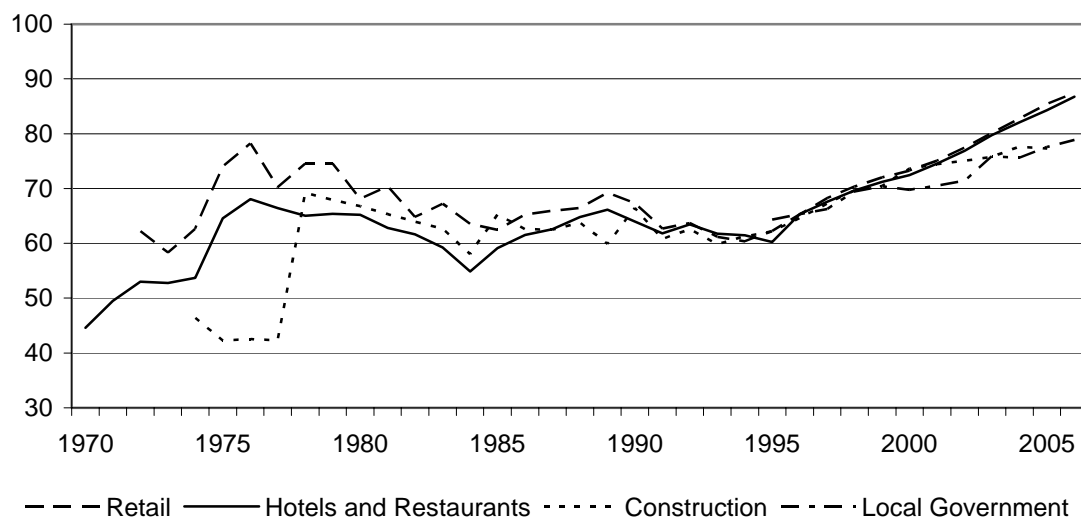
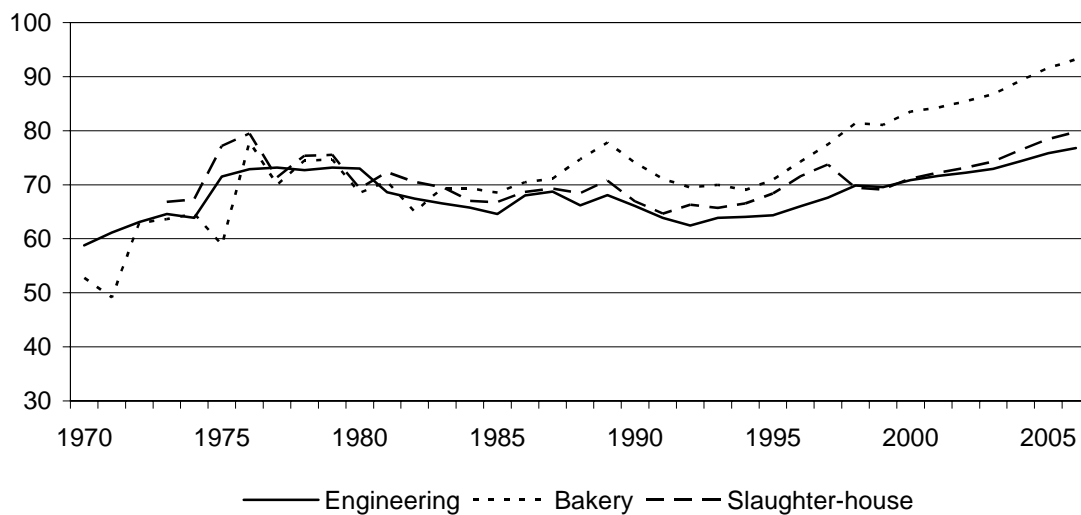
Skedinger, P (2005), "Hur höga är minimilönerna?", Rapport 2005:18, Institute for Labour Market Policy Evaluation, Uppsala.

Skedinger, P (2006), "Minimum Wages and Employment in Swedish Hotels and Restaurants", *Labour Economics*, 13, 259–290.

Svenska Dagbladet (2003), "Att höja minimilönerna är helt fel väg att gå. Högre lägstalöner riskerar snedvrída lönebildén, varnar Svensk Handels vice vd", *Svenska Dagbladet*, November 18, 2003.

Woolfson, C and J Sommers (2006), "Labour Mobility in Construction: European Implications of the Laval un Partneri Dispute with Swedish Labour", *European Journal of Industrial Relations*, 12, 49-68.

**Figure 1.** Real minimum wages for adult, unskilled workers in various collective agreements, 1970–2006. SEK per hour, 2006 prices



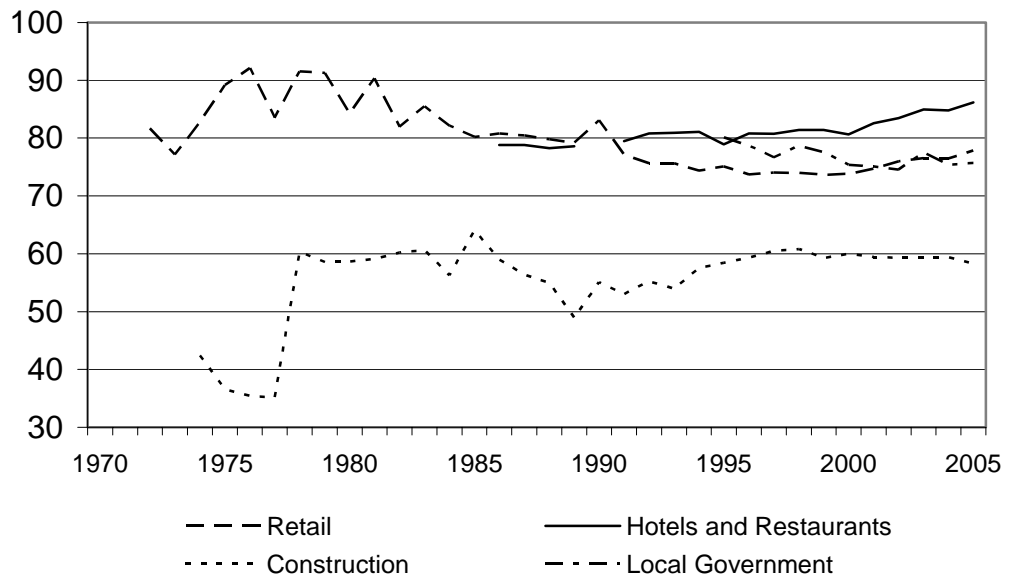
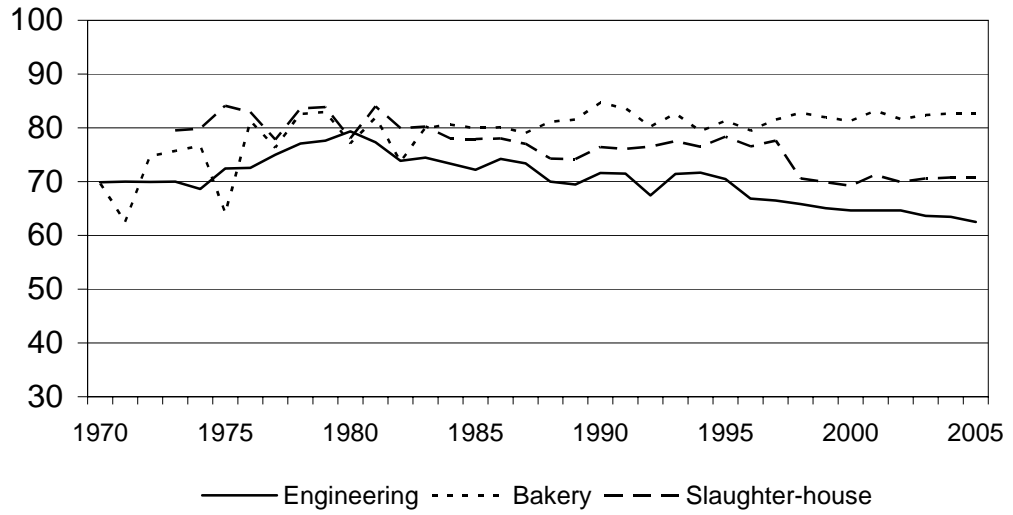
Notes:

- (i) The minimum rates apply to a prototype worker with the following characteristics: 20 years of age, no work experience, and with an unskilled job in a non-metropolitan region (Västerås).
- (ii) Unskilled jobs are defined as the following occupations: Engineering Agreement: Jobs that require insignificant or little effort in a fairly good work environment and are performed according to detailed instructions and routines; Slaughterhouse Agreement: Labelling, packing of cans in cardboard boxes and various light work. Bakery Agreement: Unskilled bakery work (e.g., chocolate dipping, bread counting and packing); Construction Agreement: Workers without a certificate of skills; Retail Agreement: Shop assistants and similar jobs; Hotels and Restaurants Agreement: Unskilled work for which no previous training is required and training normally takes place on the job (e.g., restaurant assistants). Local Government Agreement: Assistant personnel with no high-school (sixth form) vocational training.
- (iii) The minimum wages refer to the month of September each year up to 1989, and the month of May for later years, with the exception of the Local Government and the Hotels and Restaurants Agreements. December is the month in the former agreement and September is the month in the latter, for all years.
- (iv) The minimum wages include compensation for piece rates when applicable.
- (v) The monthly minimum wages in the Local Government Agreement have been re-calculated to hourly wages.

Sources:

- a) Nominal minimum wages: Various collective agreements.
- b) Consumer price index: Statistics Sweden.

**Figure 2.** Minimum wage bite for adult, unskilled workers in various industries, 1970–2005. Per cent



Notes:

(i) Minimum wage bite = (Minimum wage / Average wage in the industry) x 100.

(ii) Average wages in the private sector are the sum of time rate and piece rate compensation (*A-lön*), for manual workers. For the local government sector, average wages refer to members of the Swedish Municipal Workers' Union who are employed full-time.

(iii) Average wages in the following industries have been used (with ISIC92 codes within parentheses). Engineering Agreement: Engineering (28-35, 38); Slaughter-house Agreement and Bakery Agreement: Food product, beverage and tobacco industry (15-16); Hotels and Restaurants Agreement: Hotels and restaurants (H); Retail Agreement: Wholesale and retail trade; repair of vehicles (G); Construction Agreement: Construction (F); Local Government Agreement: Full-time employees in municipalities.

See also notes to *Figure 1*.

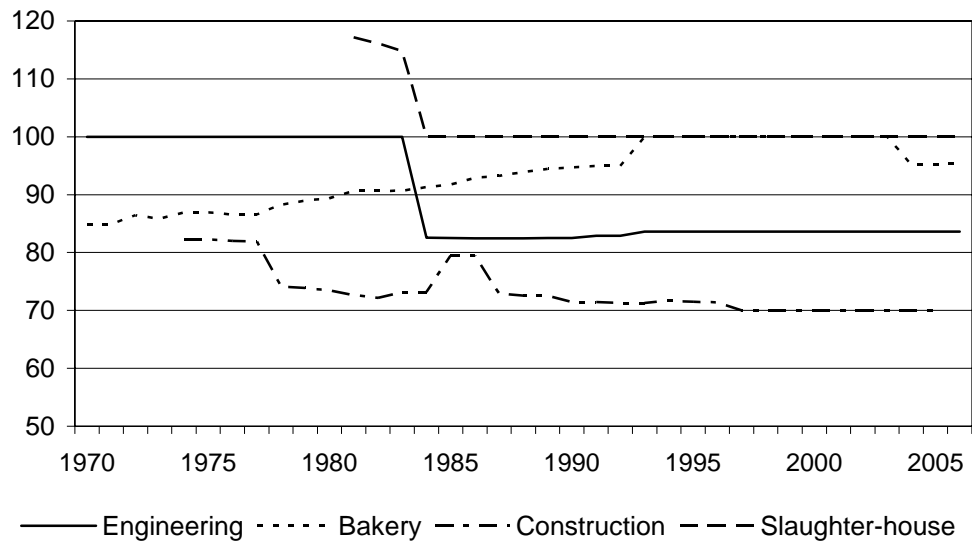
Sources:

a) Average wages: Statistics Sweden and the Municipal Workers' Union.

b) Minimum wage bite: Own calculations.

See also sources in *Figure 1*.

**Figure 3.** Differentiation of minimum wages by occupation, for adult workers in various collective agreements, 1970–2006. Per cent.



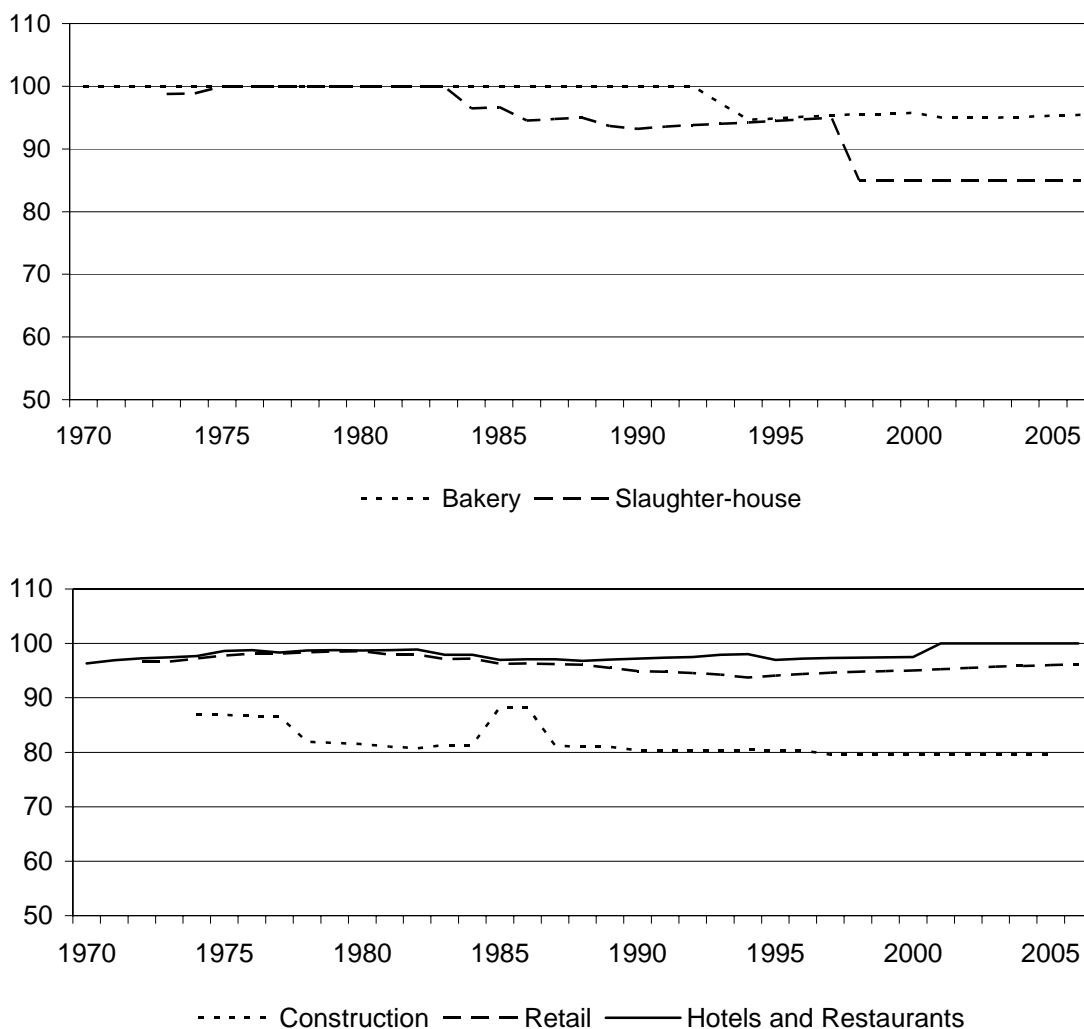
Notes:

(i) Differentiation = (Minimum wage, unskilled worker / Minimum wage, skilled worker) x 100.

See also notes and sources in *Figure 1*.

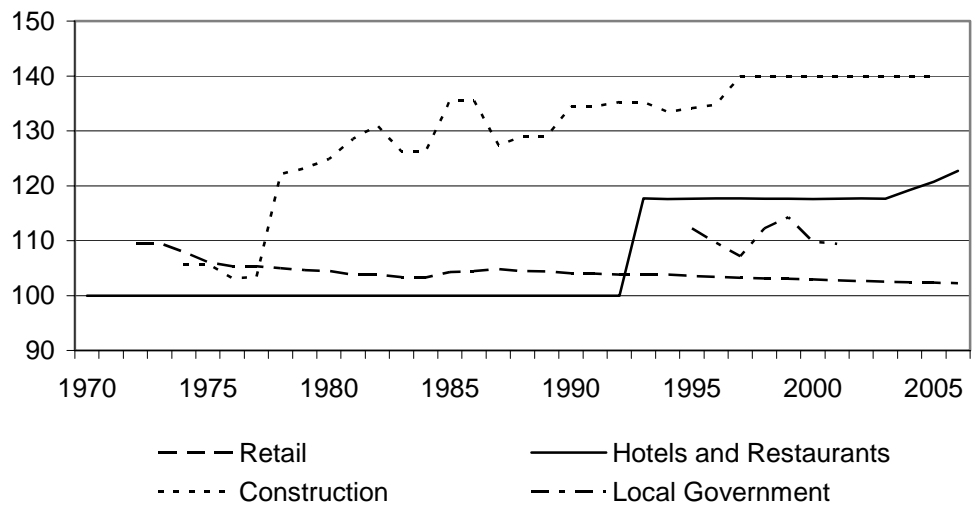
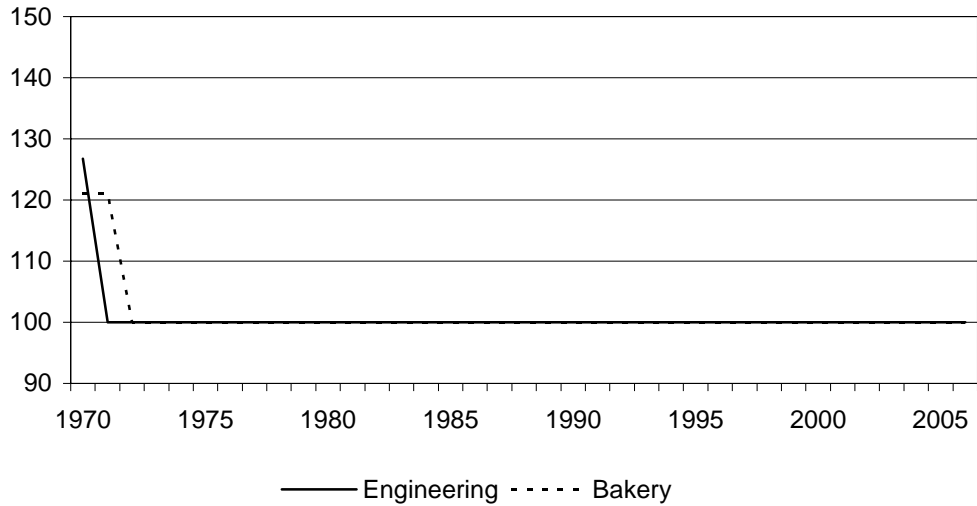


**Figure 4.** Differentiation of minimum wages by experience, for adult, unskilled workers in various collective agreements, 1970–2006. Minimum wages for a worker with no experience relative to a worker with one year’s experience. Per cent



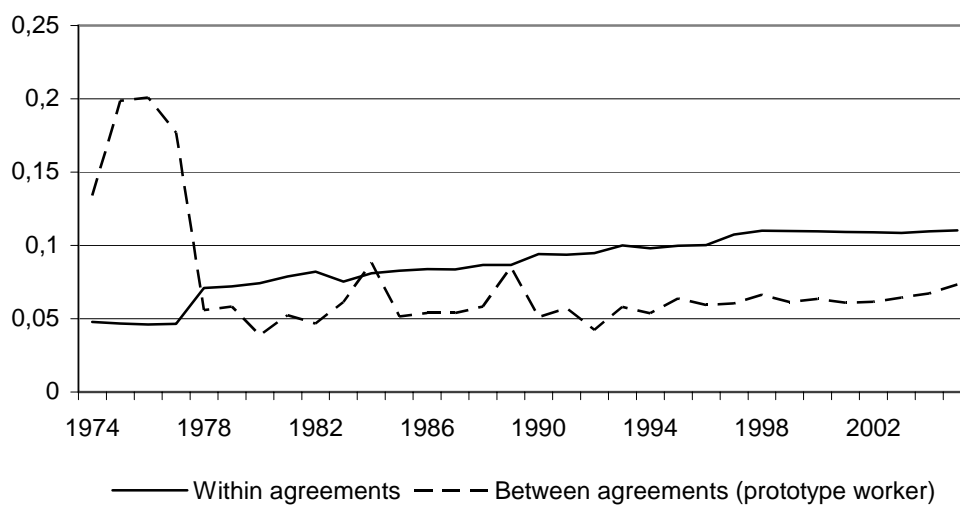
Notes: (i) Differentiation = (Minimum wage, no experience / Minimum wage, 1 year’s experience) x 100. See also notes and sources in *Figure 1*.

**Figure 5.** Differentiation of minimum wages by age, for adult, unskilled workers in various collective agreements, 1970–2006. Minimum wage for a 20-year-old worker relative to an 18-year-old worker. Per cent



Notes: (i) Differentiation = (Minimum wage, 20-year-old / Minimum wage, 18-year-old) x 100. See also notes and sources in *Figure 1*.

**Figure 6.** Dispersion of minimum wages within and between various collective agreements, 1974–2005. Coefficients of variation



Notes:

(i) Coefficient of variation = Standard deviation / Mean.

(ii) The dispersion measure is based on the (unweighted) minimum wages in Figures 3–5, adding the Hotels and Restaurants Agreement and excluding the Local Government Agreement and skilled workers in the Slaughter-house Agreement.

See also notes in *Figure 1*.

Sources:

Own calculations, see also sources in *Figure 1*.

**Table 1.** Minimum wage bite, in per cent, and age limit for full minimum wage, in various countries, 2004

Country	Minimum wage bite <sup>a</sup> (at full minimum wage)	Age limit for full minimum wage
Sweden	60–72 <sup>b</sup>	18–20 <sup>b</sup>
Australia	59 <sup>c</sup>	21
France	57	18
New Zealand	54	18
Ireland	52	20
Belgium	49	21
Greece	48 (56)	15
Netherlands	46 (50)	23
Great Britain	43	22
Canada	40 <sup>d</sup>	16
Portugal	38 (44)	16
Japan	34 <sup>d</sup>	None <sup>e</sup>
USA	32 <sup>c</sup>	None <sup>f</sup>
Spain	30 (35)	16

Notes:

(i) Minimum wages refer to the month of October.

(ii) Within parentheses is the minimum wage bite based on 2 extra monthly salaries (for full-time employees).

<sup>a</sup> (Minimum wage / Median wage in manufacturing) x 100.

<sup>b</sup> Interval for seven collective agreements (see text).

<sup>c</sup> Based on the federal minimum wage.

<sup>d</sup> Weighted regional average.

<sup>e</sup> Certain industries and regions may be exempt.

<sup>f</sup> Minimum wage reduced for employees below 20 years of age during the first 90 days of employment.

Sources:

Low Pay Commission (2005) and own calculations.