Number 70 • 2003

INSTITUTE FOR EMPLOYMENT RESEARCH IER

BULLETIN

Area cost adjustments for the public sector

Introduction

This Bulletin presents an overview of research undertaken by IER that attempts to estimate differences in staff costs faced by public sector employers in different parts of the country.[1] The main principle underlying the work is that area cost adjustments made for public sector workers should be based on comparisons with the private sector.

In 1996, IER was commissioned to review the procedures used by the Department of Health to assess the impact of labour market factors on NHS staffing costs. The results of the IER research were published in Wilson *et al.* (1996).[2] These have formed the basis for the estimates of the staff Market Forces Factor (MFF) used by the NHS in allocating funds to Health Authorities (HAs).

In 2001, the Department of Health decided it was opportune to reflect upon this new evidence and to reassess the approach used in assessing some of the cost elements of the formula used within the NHS, in particular the MFF. The results of this review are contained in Wilson *et al.* (2002).[3]

In 2002, IER was also commissioned by the London Weighting Advisory Panel to assist in its review of the London Weighting, the allowance traditionally paid to those who work in London in the public sector to compensate them for the additional costs of working in the capital. Specifically, IER was commissioned to provide estimates of the size of the premium in pay received by those who work in London in order to inform the GLA's deliberations about the appropriate size of the London weighting. The Advisory Panel also heard evidence from a variety of employers, employer organisations, trade unions, employees and other research organisations. The recommendations of the Advisory Panel, encompassing the results of the IER research, are contained in GLA (2002).[4]

Two approaches to area cost adjustments

The key issue is how to measure and adjust for unavoidable variations in staff costs faced by public sector employers in different parts of the country. In principle, two main methods of estimating these extra costs have been proposed:

- Specific Cost Approach (SCA);
- General Labour Market (GLM) Approach.

The Specific Cost Approach involves establishing how much goods and services cost within any particular geographical area. By comparing these costs across regions, adjustments can be made to pay to equalise differences in the cost of living that are found to exist. Although the SCA has considerable intuitive appeal, there are a number of reasons why it is very difficult, if not impossible, to put into practice.

Firstly, it is difficult to distinguish between avoidable and unavoidable costs. The availability of particular facilities such as entertainment may alter the patterns of expenditure across areas. Secondly, the SCA approach does not take into account the non-monetary costs and benefits associated with living and working within a particular location. Examples may include the environment or access to freely available public services.

The alternative GLM approach uses measures of spatial differentials in earnings in the labour market as an estimate of the external market pressures facing employers in different locations. The rationale for this approach is based on the theory of 'compensating wage differentials'.

[1] The research summarised in this Bulletin is referenced in subsequent footnotes. The views expressed are those of the author and should not necessarily be attributed to project sponsors. Contact: rhys.davies@warwick.ac.uk at IER.

[2] Wilson, R. A., Assefa, A., Briscoe, G., Elias, P., Green, A. E., McKnight, A. M. and Stillwell, J. (1996). *Labour Market Forces and NHS Provider Costs: Final Report.* Coventry: IER, University of Warwick, ISBN 0-9515763-3X.

[3] Wilson, R.A., Davies, R., Green, A., Owen, D. and Elias, P. (2002). *Spatial Variations in Labour Costs: 2001 Review of the Staff Market Forces Factor.* Coventry: IER, University of Warwick/Department of Health, ISBN 0-9515763-80.

[4] Greater London Authority (2002). *Report of the London Weighting Advisory Panel: London Weighting*. London, GLA, ISBN 1-85261381-5.

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Differences in wage rates, which employers are forced to offer in order to be able to attract and retain labour of a certain quality, can be partly explained by geographical differences in local market pressures. The primary influences determining these area effects are taken to be the relative key pressures in the local labour markets, for example, the level of unemployment and local housing and commuting costs, as well as other factors associated with working in a particular location.

Estimating compensating differentials

The key issue is how to calculate these spatial wage differentials advocated by the GLM approach. The first underlying principle is that cost adjustments made for the public sector should be based on comparison with the private sector. It is assumed that the private sector is free to set pay according to market forces in order to attract and retain workers of necessary quality in response to local labour market conditions. Therefore, geographical variations in private sector pay should reflect the relative amenities and dis-amenities associated with working within a given area. It is important to note that this approach does not suggest that workers in the public sector should be paid at the same rate as those in the private sector, merely that geographical variations in public sector pay should be based upon those observed in the private sector.

However, comparing crude wage differentials in the private sector across geographical areas would not be appropriate, since like would not be compared with like. For example, geographical variations in pay will also reflect differences in the industrial and occupational composition of employment.

A second underlying principle is therefore to take account of all other factors that influence pay so that the spatial wage differentials calculated only reflect the relative amenities and dis-amenities of working in a particular area. The most common approach is to use multivariate statistical techniques that attempt to control or 'standardise' for other factors that are likely to be important in determining an individual's earnings – such as an individual's educational qualifications, age, sex, occupation or industry of employment. The spatial wage differentials that remain after controlling for all other measurable differences in worker quality and job attributes should reflect the premium workers require to work in any particular area. We refer to these premiums as Standardised Spatial Wage Differentials (SSWDs).

The final issue surrounds the choice of data to be used in the estimation of SSWDs. The preferred source of information for the estimation of compensating differentials is the New Earnings Survey (NES).

The NES is the largest regular survey of pay conducted in the UK, with data being provided annually for a random sample of around 160,000 employees selected on the basis of National Insurance numbers. The NES is felt to have several advantages over other sources of earnings data for the purpose of estimating compensating differentials.

Firstly, it is the only survey where the collection of information on earnings is the primary objective. Secondly, it has a much larger sample size than other surveys, enabling compensating differentials to be estimated for relatively detailed geographical areas. Since the data are collected from administrative records of employers rather than being supplied by individuals, the accuracy of the data is likely to be greater. The other main source of such data is the Labour Force Survey (LFS). This is based on a much smaller sample but has the advantage of also including some indicators, such as qualifications held, that are not available in the NES. (The LFS is discussed more fully below).

Variations in staff costs across England

Figure 1 presents the geographical pattern estimated of SSWDs for England. This map uses the maximum level of geographical detail available with the New Earnings Survey, with England being divided into 119 NES areas. In order to estimate the SSWDs, it is necessary to arbitrarily select an area to act as a reference category.

The reference area that has traditionally been chosen for this analysis is Barking and Dagenham. SSWDs are then expressed as percentage differentials relative to this reference area. For example, the key to Figure 1 indicates that there are two areas that have SSWDs of between 0.2 and 0.25 - Tower Hamlets and the City of Westminster. These estimates therefore reveal that after having controlled for other factors that may be expected to have important influences on pay, gross hourly earnings of private sector employees working in the City of Westminster and Tower Hamlets are 20-25 per cent higher than those received by employees working in Barking and Dagenham.

The absolute values of the SSWDs presented in Figure 1 are dependent upon the area that is arbitrarily selected to act as the reference category. However, of greater importance are relative differences between areas and the general pattern of SSWDs estimated across the country. These patterns reveal very high SSWDs in Central London, extending westward into Berkshire with lower, but still high, SSWDs in the western part of the South East. SSWDs decline with distance away from this area of high wages, with higher wage rates in Bristol, Derby, Leicester, the Mersey-Humber belt, York, Teesside and Tyne & Wear. The lowest SSWDs occur in the more remote rural areas, especially in the South West peninsula encompassing Torbay, Cornwall and Devon.

The primary influences determining these SSWDs are taken to be the relative key pressures in the local labour markets. In general, one would expect that these factors would tend to vary rather smoothly from one area to the next, so that their level in one local area will usually be more similar to other areas nearby than to more distant areas.

A particular criticism of the SSWD approach has arisen due to the problems of 'cliff edges'. This refers to a situation where neighbouring geographical areas that are perceived to have similar local labour market pressures are estimated to have sharply differing compensating differentials. Such a situation could simply be due to random variations in the NES sample rather than the 'genuine' pattern of wage rate variation over space.

To overcome these difficulties, the 2001 review conducted on behalf of the Department of Health suggested that some type of smoothing mechanism could provide a useful refinement to the

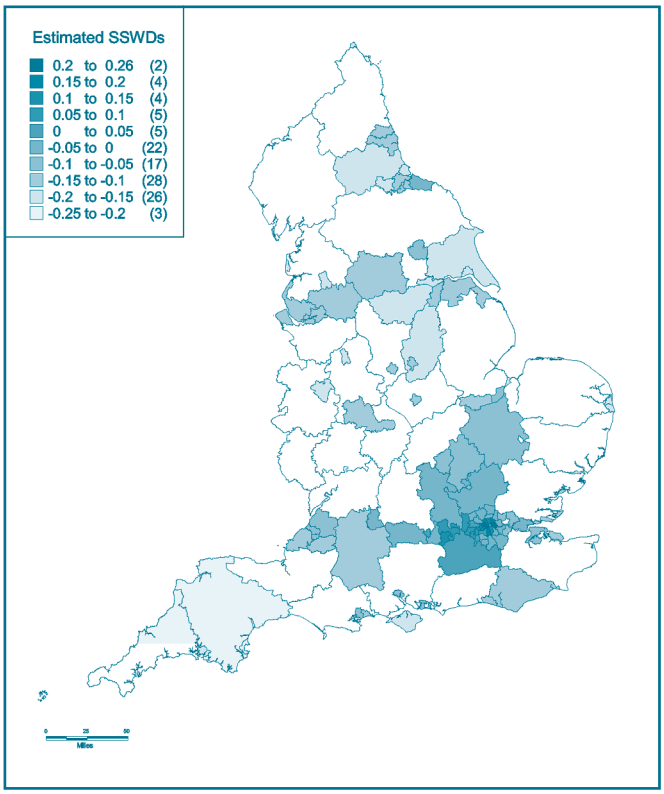

Figure 1: Standardised Spatial Wage Differentials for England

estimation of compensating differentials. Descriptions of these smoothing methodologies are complex and are considered in detail in Wilson *et al.* (2002). The recommended approach is based on a weighted averaging of own and neighbouring areas' compensating differentials, the weights depending upon population size and the distance between areas. Population weighting ensures that more populous areas exert greater influence than areas of small populations. Distance weighting ensures that greater weight is given to nearby areas and allows for a greater deterrence effect of distance on commuting to job opportunities.

The effect of employing these smoothing mechanisms on the estimated pattern of SSWDs is shown in Figure 2. The pattern of very high SSWDs extending westward from Central London into the urban areas of Berkshire, Surrey and Buckinghamshire occurs again. SSWDs decline with distance from London, but an axis of higher SSWDs extending through the Midlands into North West England and West Yorkshire is now evident. SSWDs decline with distance away from this area, with the lowest values recorded in peripheral rural areas.

In the Midlands, the SSWD is higher in Warwickshire than the former West Midlands Metropolitan County. Stoke-on-Trent again has a low SSWD. In Northern England, SSWDs are high in the Mersey-Humber axis and in Tyne & Wear, and particularly high SSWDs occur in York and Redcar.

Scrutiny of the London Weighting

In 2002, IER was commissioned by the London Weighting Advisory Panel to assist in its review of the London Weighting. The general aim of the project was to conduct additional analyses to inform the GLA's deliberations about the appropriate size of the London Weighting. The main features of the empirical analysis were to consider the utilisation of alternative sources of data, to present separate analyses for those working in the public and private sectors and to consider three separate geographies for London, distinguishing Inner London, Central London and Outer London.

As described above, the NES is the preferred source of information for the estimation of compensating differentials for detailed geographical areas across England. However, there are problems with utilising the NES as a source of information on earnings. In particular, its coverage of low paid workers is incomplete. Selected employees are largely traced via their tax records, so those who do not pay tax because of low earnings are much less likely to be supplied.

The main alternative source of information about earnings is the Labour Force Survey (LFS). The quarterly LFS available from Spring 1992 covers a sample of approximately 60,000 households. The LFS is generally recognised to be a good source of earnings data, particularly on groups of employees such as part-time workers and the low paid who are under-represented in the New Earnings Survey. One component of the GLA research was therefore to consider how SSWDs estimated for the London area may vary depending on the source of data used.

SSWDs estimated for the London area are presented in Table 1. These figures show the percentage differential in gross hourly earnings for employees in London relative to those elsewhere in England after having controlled for other personal and job characteristics. Firstly, it can be seen that the sizes of SSWDs

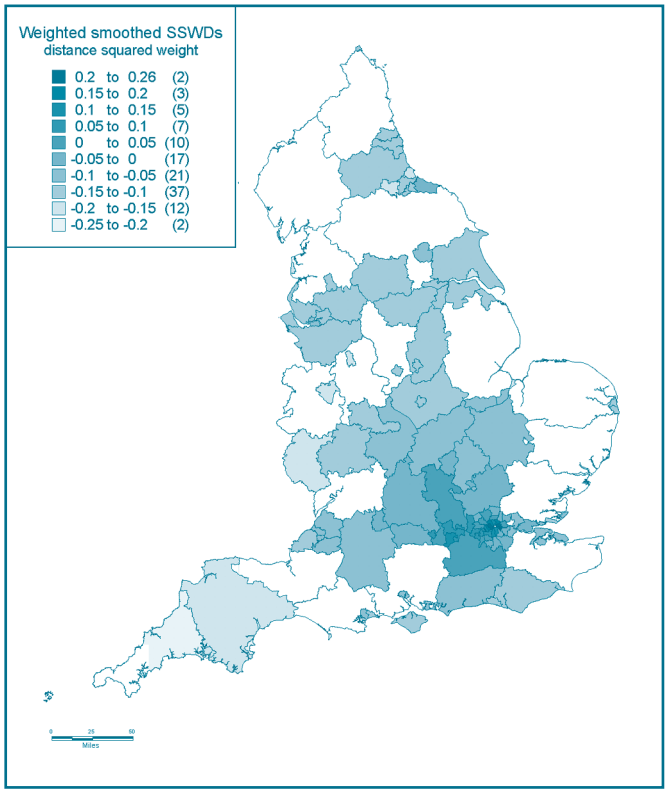

Figure 2: Smoothed Standardised Spatial Wage Differentials for England

derived from the NES are very similar to the size of those estimated utilising LFS data. Considering results derived from the LFS, it can be seen that private sector employees working within Greater London earn 27 per cent more than those employed in the private sector elsewhere in England. This is compared to an estimated 25 per cent when using the NES data.

The more detailed geographical schema demonstrates the differences in hourly earnings exhibited by those employed in different areas of London. Again considering the position of those employed in the private sector, those employed in Outer London are estimated to earn approximately 11-15 per cent more than those employed elsewhere in England. Those employed in Inner London are however estimated to earn approximately 36-37 per cent more than those employed elsewhere in England. Further differentiation indicates that those employed in Central London are estimated to earn approximately 41-44 per cent more than those employed elsewhere in England.

Wilson *et al.* (1996) recommended that the City of London should be excluded from the estimation of compensating differentials and that this area be given an SSWD equivalent to other adjacent Central London boroughs. The rationale for this treatment is because of the special factors operating in the City of London.

For example, the City of London is characterised by the concentration of international organisational headquarters. Individuals who work within these establishments may be expected to differ in terms of their personal characteristics (eg. they may be career minded and ambitious). The higher earnings that should be attributed to the personal characteristics of individuals working within the City may instead be mistakenly attributed to a compensating premium paid for working within the locality. The failure to adequately control for these personal and job characteristics would result in an overestimation in the size of the SSWD for the City.

To consider these issues, Table 1 examines the sensitivity of the estimated SSWDs for London to the inclusion/exclusion of the City. This analysis is restricted to the NES since the level of geographical detail available within the LFS does not permit the exclusion of the City of London from the analysis of these data. It is estimated that excluding the City of London reduces the compensating differential for Central London from 41 per cent to 37 per cent. Excluding the City of London reduces the compensating differential for Greater London from 25 per cent to 22 per cent. Naturally, it can be seen that the effect upon the size of estimated SSWDs of including the City of London is dampened down when this area is subsumed within more aggregate area definitions. The ability to exclude the City of London from the analysis again underlines the NES as being the preferred source of information upon which to base estimates of compensating differentials.

One of the underlying principles of the analyses presented in this Bulletin is that cost adjustments made for the public sector should be based on comparison with the private sector. It is therefore interesting to compare the premium currently received by these two groups of employees for working in London, given that those employed in the public sector within Greater London face the same advantages and disadvantages of working in this area as those employed in the private sector. It is evident from Table 1 that those employees in the public sector are compensated less for working within Greater London compared to employees in the private sector, particularly when considering the position of those employed within Inner London and Central London.

Considering results based upon the NES and excluding private sector employees working in the City, the premium received by public sector employees working in Inner and Central London is approximately 10 percentage points lower than that received by private sector employees. For Outer London, estimates indicate that allowances currently paid in the public sector produce a London premium comparable to that of the private sector.

Conclusion

External market pressures lead to variations in staff costs faced by employers in different geographical areas. Failure by public sector employers to take these pressures into account may lead to an inability to recruit and retain employees of sufficient quality to deliver key services.

After standardising for different personal and job characteristics, analysis reveals a corridor of relatively high wage costs extending westward from Central London into the urban areas of Berkshire, Surrey and Buckinghamshire. Lower wage costs occur in more remote rural areas, especially in the southwest peninsula. The premium received by public sector employees in Inner and Central London is currently 50 per cent lower than that received by private sector employees. For Outer London, the evidence suggests that allowances currently paid in the public sector produce a London premium at least as great as that which workers in the private sector are paid.

	Labour Force Survey		New Earnings Survey		
	Private Sector	Public Sector	Private Sector	Private Sector (Excl. City)	Public Sector
Central London	44%	26%	41%	37%	26%
Inner London	36%	23%	37%	33%	24%
Outer London	15%	13%	11%	11%	15%
Greater London	27%	19%	25%	22%	20%

Table 1: Standardised Spatial Wage Differentials for Greater London

For details of related IER research see the IER website: www.warwick.ac.uk/ier