

FINAL REPORT

**FEFC: REVIEW OF
GEOGRAPHICAL
AND
INSTITUTIONAL
FACTORS:
STAFFING COSTS**

**Prepared for:
The
Further
Education
Funding Council**

By the

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1. INTRODUCTION

A wide range of factors determine the wages paid to employees in Further Education (FE) colleges throughout England. Such factors include the differences in skills and abilities of employees, local labour market pressures and the relative differences in attractiveness of areas, for example some areas have a higher cost of living than elsewhere. The main objective of this study is to provide a rigorous analytical and statistical analysis of the size and compass of such ‘regional’ wage differences.

The scope of the study is to:

Project Tasks

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| <ul style="list-style-type: none"> • Define one or more geographical areas within which the staffing costs incurred by FE colleges are systematically higher than elsewhere • Review evidence considered by the London Costs Group, and any evidence on the general differential between personnel and pay costs in different areas of London, with particular reference to defining boundaries between such areas or zones • Review available evidence on staffing costs provided by FE colleges in response to a call for evidence from the Council • Undertake research as necessary to enable the Council to make properly informed judgements about the need for geographical zones and their relative weighting for funding purposes • Estimate the additional rate of funding that should be available to colleges within each area to compensate for any higher staffing costs. |
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This report is structured as follows. **Section 2** provides the conceptual and analytical basis for accurately identifying regional wage differentials. In particular, it describes the data sources and methodologies that are appropriate for calculating regional wage differentials. In **Section 3** Maxwell Stamp reviews the work of the FEFC on the determination of London weighting allowances, through the research by the London Costs Group (LCG). In the same section we also critically review information on labour cost differences in other public sector institutions, such as the NHS and Department of the Environment, Transport and the Regions (DETR). Finally, in **Section 4**, we estimate regional wage differentials and calculate weightings for the FE sector. In **Section 5** we conclude our work and provide recommendations.

2. CONCEPTUAL APPROACH

2.1 INTRODUCTION

In this section we consider the conceptual and statistical issues that will assist in determining the appropriate methodology for providing the best estimates of regional¹ weighting allowances for the FEFC funding allocation formula. The objectives of this section are:

- to provide a conceptual/theoretical understanding of what a regional pay differential is
- to show how the theory can be extended to form a statistical methodology that can provide reliable estimates of regional pay differentials
- to discuss the type of data set that is required to ensure that the calculation of FEFC regional weighting allowances is reliable.

We intend using this section as a benchmark by which we can assess the alternative regional weighting allowance approaches examined in Section 3.

2.2 REGIONAL WAGE DIFFERENTIALS: CONCEPTUAL ISSUES

A funding formula that does not take into account regional pay differences assumes implicitly that the cost of hiring comparable employees is the same throughout the country. In this case, colleges that are located in high wage areas will find it difficult to retain and recruit staff with the converse being the case in low wage areas. Thus, the main rationale for the introduction of a regional weighting allowance is to enable colleges to recruit and retain staff of comparable quality, independent of where colleges are located.

We conceptualise the above rationale for a regional weighting allowance by working through the following ‘thought experiment’. We have stated that the aim of a regional weighting allowance is to ensure that colleges of a similar type have the same opportunity to employ workers of a similar standard. What do we mean by a similar standard employee? In answering this question we look to the key factors that are likely to influence the pay of individuals.

¹ We use the terms ‘regional’ and ‘region’ in their general sense throughout this report and at some stages we will equally refer to areas in the same context. Hence, the term ‘region’ does not relate to the standard regions of the UK.

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These key factors include:²

- Age
- Gender
- Education
- Experience
- Level of Vocational Training
- Type of contract.

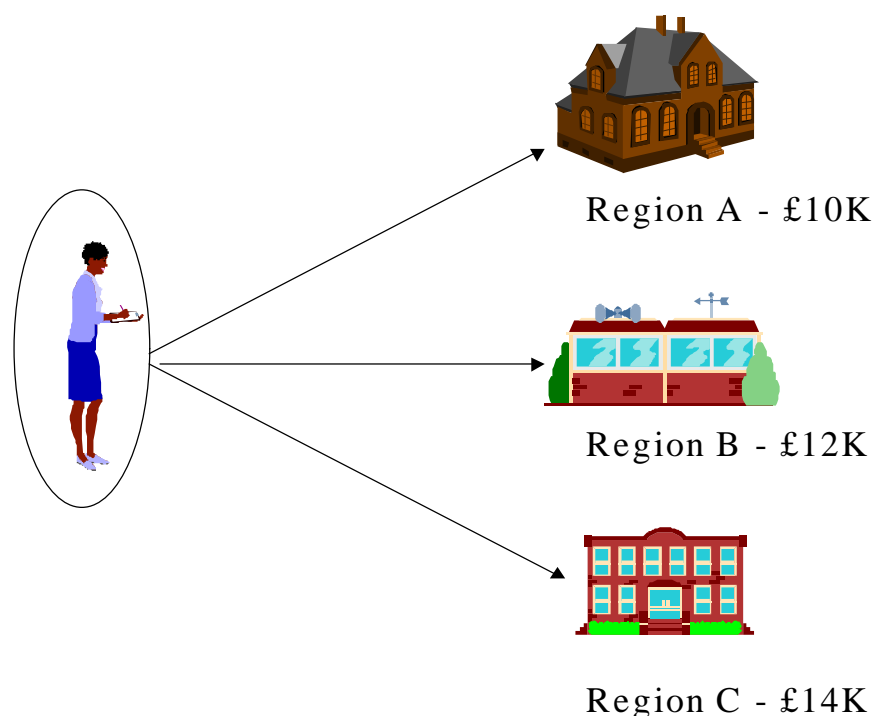
In Figure 2.1 we take a stylised individual with a given set of such characteristics. She is 35 years old, degree educated, has 10 years experience and is on a permanent contract. The question we ask is:

In order to retain this individual what pay would colleges of a similar type in each part of the country have to offer her?

Figure 2.1 shows the case for three colleges in three separate regions. In Region A, colleges could retain this employee with a remuneration of £10,000; in Region B, the remuneration would have to rise to £12,000; and in region C the remuneration rises further to £14,000. Thus, in Region B colleges will pay 20% more than the rate paid in Region A. In Region C colleges will pay 40% more. These percentage differences are the regional pay differentials.

² We accept that there are many factors that can influence an individual's pay. For example, there are a range of intangible factors that are not easily measured, such as the amount of effort individuals put into their work, and their motivation.

Figure 2.1 Regional Pay Differences



It is important to explain why such regional wage differentials exist. The economic theory of ‘compensating wage differentials’ states that if we examine the pattern of wages for a comparable worker we ought to see wage rates higher in some regions compared with others. There are two main explanations for why this is the case:

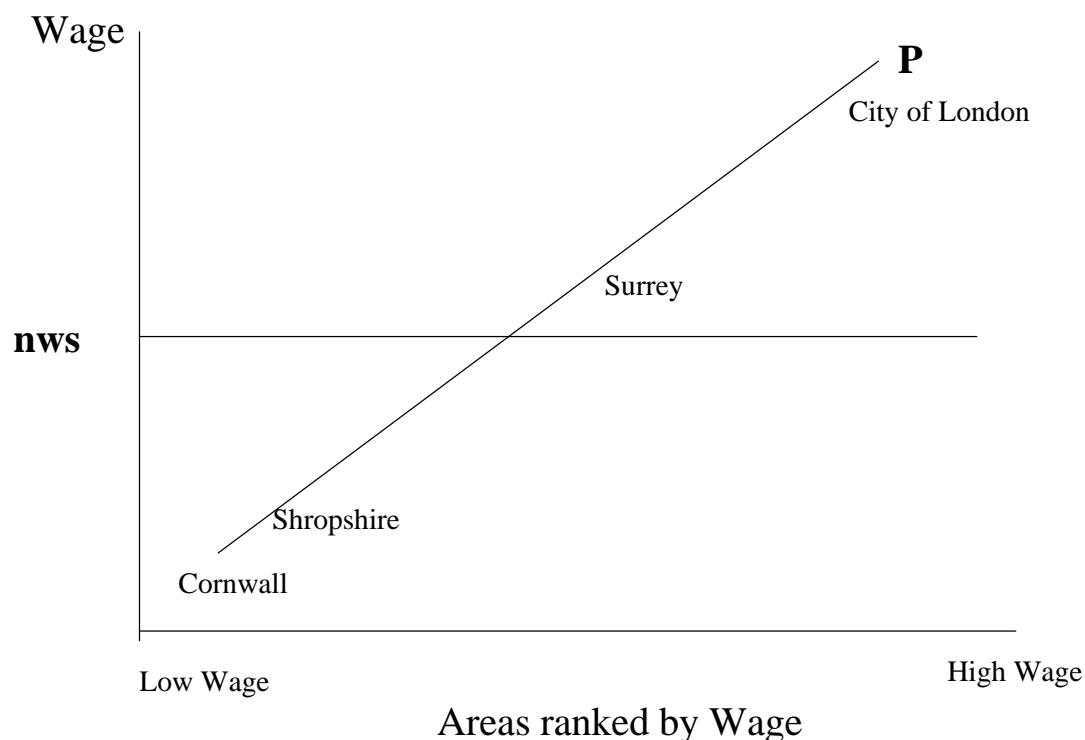
- wages in areas where the cost of living is high will have to be higher in order to attract and retain employees
- some areas are regarded as less attractive for employees to work in than others. Hence, employers in the less attractive areas will have to pay a premium in order to retain and recruit staff of a given standard.

To present this analysis more technically, we show in Figure 2.2 a ‘pay schedule’ (P) to reflect the differences in pay for a comparable worker across the country. The lower pay areas are below the horizontal axis and the higher pay areas above. On the vertical axis we show the wage that has to be paid in each area in order to retain and recruit an employee of the same standard. Thus, the pay schedule (P) plots the different wages this individual would receive in different parts of the country. In Figure 2.2 we also show, as an

illustration, the approximate positions of Cornwall, Shropshire, Surrey, and the City of London on the (P) schedule³.

Figure 2.2

Pay Schedules



We also draw in Figure 2.2 a schedule that depicts a flat national wage across the country – depicted as **nws**. It can be seen that in the lower pay areas, such as Cornwall and Shropshire, workers that are paid at the national wage rate will be paid above the ‘going rate’ for the area. At the other end of the scale, employers in Surrey and London will be paying below the ‘going rate’.

The reason for showing this diagram is to explain the likely market dynamics where there is a national wage; the effects of previous national wage agreements influence the current pay structure; or where union agreements dampen the influence of market pressures on regional wage differentials.

³ These are approximate positions that we borrowed from the DETR ‘Area Cost Adjustment Review’ study.

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The following effects are likely:

- employers in areas such as Cornwall and Shropshire are likely to find themselves in a position where they have a relatively large pool of workers willing to work for them because they pay above the ‘going rate’. These employers could take advantage of this high demand for jobs in their area by taking on only highly experienced and well-trained staff
- employers in Surrey or the City of London, who pay below the going rate, have a relatively smaller pool of workers to choose from, and will have significantly less opportunity to hire the quality of staff available to their counterparts in Cornwall and Shropshire.

This is not an exhaustive list of the likely responses of employers and employees. However, it is indicative of the types of adjustment that could take place. If this argument is accepted, it follows that comparable workers will receive different pay across the country, even under national pay scales or institutional pay arrangements of a similar type. This is because, although national wage rates are being paid, the quality of workers is likely to be higher for a given point on the scale in Cornwall or Shropshire than in Surrey or the City of London.

The key points that arise from this discussion on the conceptual issues are:

Conceptual Issues - Summary

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| <ul style="list-style-type: none"> • The appropriate method for providing accurate information on regional pay differences is to observe the ‘going rate’ across areas for a comparable worker • In the case where a sector has a national pay arrangement or a previous system of national pay scales continues to influence current pay arrangements, it is still possible to observe significant regional pay differences. |
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2.3 REGIONAL WAGE DIFFERENTIALS: QUANTITATIVE ISSUES

We have shown that the appropriate conceptual framework for accurately identifying regional wage differentials is to examine the going rates of comparable workers. In this section we show how this approach can be extended so that reliable statistical estimates can be made of regional wage differentials.

However, we start by briefly describing an approach that relies solely on information about wages. A source that is often referred to as a means of benchmarking regional pay data is the pay data held by *Income Data Sources* (IDS). Table 2.1 is a typical example of the regional pay differences picked up by the IDS.

Table 2.1 IDS Regional Pay Differences Data (1997)

	Central London	Inner ⁴ London	Outer London	Fringe
	£	£	£	£
Public Sector^a				
Craft Workers	1,708	564	393	
Educational Services		2,058	1,353	525
Fire Service		2,793		
Probation Services		2,253	1,194	
Community Services		2,052	1,350	525
Housing Association		2,052	1,350	525
Private Sector^b				
Britannia Building Society	3,650		2,250	
British Telecom		2,463	1,068	
Woolwich	3,450	2,850	1,250	800
Barclays Bank	3,400			700
Midland Bank	3,200			750

(a) Public Sector National Pay Structure. Source: *IDS, Pay in the Public Sector* (b) Company level data. Source: *IDS, Pay Benchmark Database* and *IDS London Allowances Study*.

In addition to examining the information available from the IDS survey we also contacted a number of companies and asked about their regional wage differentials. Only the NatWest Bank was prepared to provide us with information on pay. It claimed 'not to differentiate salaries on a regional basis' other than through a stratified set of allowances for London and the rest of the South East. Table 2.2 represents its regional pay differentials.

⁴ Central London can be broadly defined as covering Westminster and the City of London. Where there is no separate information for Central London then Inner London will also include Westminster and the City of London.

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Table 2.2 Regional Wage Differentials - NatWest

London - Miles From Charing Cross	Allowance
0-3	£3,600
3-6	£2,975
6-10	£2,350
10-16	£1,775
16-22	£1,475
Rest of South East	£825
BRISTOL	£500

However, relying on the differentials found in the *IDS Pay Benchmark Database and London Allowances Studies* and in the NatWest Bank pay data is problematic. For example, although the differentials are reliably recorded in the IDS data, it is not possible to know whether there is any variation in the characteristics of workers employed in the companies and institutions covered by the data set. Hence, it is not possible to know whether the workers in receipt of the higher allowances set out in Table 2.1 are in fact comparable with workers that are not receiving any allowance – they may well be significantly different. If they are not comparable workers, then it would be inappropriate to use this data for determining regional pay differentials.

An appropriate data set is one that, in addition to providing information on individuals' pay, also includes data on their characteristics, such as age, gender, qualifications etc. Table 2.3 provides a partial example of what this type of data set would look like. Other information we would like to see in this data set includes years in service, type of work and type of contract etc.

Table 2.3 Wage and Characteristics Data Set

Individual	Hourly Wage	Age	Gender	Qualifications	Area	College Type
A	£10	20	M	2 A levels	T	SF
B	£15	40	M	Degree	U	AC
C	£16	45	F	Doctorate	V	G
D	£20	38	F	5 GCSEs	X	G
E	£5	22	M	None	Y	TC
F	£5	19	F	3 GCSEs	Z	G
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The next step would be to carry out a statistical analysis on the type of data shown in Table 2.3 that would provide reliable and unbiased estimates of

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regional pay differentials. The generally accepted approach for providing such estimates is multiple regression analysis. Multiple regression analysis would estimate the quantitative relationship between pay and the factors that determine it.

The essential feature of the multiple regression approach is that it is able to correlate pay with the range of characteristics that is set out in Table 2.3 (plus any other relevant factors we might include). This means that it is able to simultaneously determine the influence of education, gender, etc on pay rates. Most importantly, having taken such characteristics into account, it is also able to isolate the effect on pay by the area in which the employee works.

Quantitative Methodology – Summary
<ul style="list-style-type: none"> • The use of data on regional pay differentials that does not provide information on the characteristics of workers is inappropriate for providing unbiased estimates of regional weighting allowances – the IDS regional pay data sources fall into this category • The ideal data set for estimating regional wage differentials is one that includes information on individuals’ pay and their characteristics, such as education levels, age, gender, etc and an indication of the area in which the employee works • The best tool for estimating unbiased regional wage differentials is multiple regression analysis – which takes into account the different characteristics of individuals in order to isolate the regional wage differential.

2.4 DATA SOURCES

Our examination of the literature on estimating wage differentials distinguishes between two types of study:

- a specific approach based on the actual pay of workers in the institutions in question
- a general labour market approach based on external data.

The specific approach requires the use of data that is based solely on the institution in question. Indeed, the data set described in Table 2.3 is an example of such a data set. In the case of the FEFC, if data were available at an individual employee level on pay and characteristics then this would be the ideal data source on which to carry out the statistical work. However, collection of data of this type for large multi-site institutions is rare. Thus, in

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general, researchers have looked for alternative approaches that can best represent the specific approach.

In such cases, where specific institutional data is unavailable, a preferred alternative to the specific approach is the general labour market approach. This approach is based on the following assumption:

If it can be assumed that Further Education (FE) workers are part of the overall labour market, and that the colleges that employ them face the same market pressures as other employers in trying to recruit and retain its workers, **then** evidence of the pay of a large sample of similar workers outside the FE sector will be a reliable substitute.

Thus, the general labour market approach assumes that outside evidence from the major government labour market surveys can provide reliable estimates of regional pay differences in the FE sector. These surveys include:

- The Labour Force Survey (LFS)
- The New Earnings Survey (NES).

However, it is argued that some public sector institutions are wholly or partially 'segmented' from the general labour market. For example, the public sector has a greater presence of trade unions and/or national wage bargaining arrangements. Under certain circumstances these arrangements can cause regional wage differentials to be more compressed in the public sector than in the private sector. If this is the case, then the use of general labour market evidence would be less appropriate and a statistical adjustment would be required to account for public/private sector differences.

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Data Sources – Summary

- Individual level data, based on the specific institutions in question, would be the ideal data source for estimating regional pay differentials – this is the specific approach – unfortunately, the availability of specific data is rare
- If the FE sector regards itself as competing in the open labour market for its employees, then a general labour market approach would be a reliable substitute for specific institutional data. Nationally representative general labour market data sources would include government surveys, such as the LFS and NE.
- Alternatively, as many public sector institutions are more unionised, or have national pay bargaining arrangements, a statistical adjustment may have to be made to the general labour market approach to account for public/private sector differences.

3. REVIEW OF REGIONAL PAY STUDIES

In this section we examine evidence from the following approaches to calculating regional pay differentials:

- The London Costs Group
- A study on public and private regional pay differentials
- Police and Teacher regional pay differentials
- A major review by the DETR on calculating labour cost differences across local authorities
- The NHS Executive's approach to calculating pay differences in the Health Authority areas.

The main objective of the section is to highlight the evidence and assess the approaches to calculating regional pay differences in terms of the calculation of weighting values and the approach to zoning.

3.1 THE LONDON COSTS GROUP

In the report prepared by the London Costs Group (LCG), entitled *A Proposal for the London Weighting Factor*, a new approach has been put forward to compensate colleges in the London area and its environs for higher costs incurred in employing and retaining staff. This proposal was introduced into the FEFC funding formula in 1998/9. In the following we discuss this proposal.

3.1.1 CURRENT LONDON WEIGHTING FACTOR FOR FURTHER EDUCATION FUNDING

The London Costs Group was established to carry out a study on the London weighting element, and several pieces of evidence were reviewed, including statistical information sources such as Regional Trends, IDS and Reed Employment Services regional salaries.

Furthermore, a general analysis of labour costs, and the costs of different staff groups across the college's main activities, was carried out (using a matched pairs study).

On the basis of collected evidence and studies, the London Costs Group concluded that the 'average salary paid by colleges in London was greater than that paid to non-London colleges and was also greater than the recommended

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London allowances for both Further Education teaching and administrative staff.

The London Costs Group recommended that the weighting factors used by the FEFC should be replaced by standard factors based on average college data and three zones.

The methodology for calculating the new London weighting factor is based on the following formula:

$$1 + (P \times (1+C) / I)$$

where

P = the additional pay per full-time equivalent employee

C= the on-cost for national insurance and superannuation arising from the additional pay

I = the average total income per full-time equivalent employee

C and I are based on the average of all colleges, and in the proposal put forward by the London Cost Group they should be fixed at 15 per cent and £29,200 respectively.

The London Costs Group suggested three zones:

- Inner London (boroughs formerly covered by the Inner London Educational Authority)
- Outer London (the remaining London boroughs)
- Fringe for areas outside the Greater London region where a London weighting factor was currently applied.

On the basis of London weighting factors provided by Income Data Services, the final outcome of the methodology proposed by the London Costs Group is:

Inner London	1.12
Outer London	1.06
Fringe	1.03

3.1.2 THE RESPONSE BY COLLEGES TO THE LONDON COSTS GROUP PROPOSAL

The proposals by the London Costs Group for the revision of London weighting factors were circulated among colleges and comments were invited.

Most of the comments came from colleges in the Greater London Region. These institutions pointed out the need to raise the London weighting factor to no less than 1.18 for inner London and 1.11 for outer London. The justifications for such a request were based on several statistical sources, including the New Earnings Survey and the Labour Force Survey. The arguments put forward by most colleges in London were:

- the higher salary costs related to the higher average gross annual earnings in London
- The additional cost of living for those recruited to work in the capital
- the difficulties in recruiting, including the extra cost of job advertising
- the need for higher security leading to greater staff costs.

A view was also expressed that there was a need to revisit the zoning issue to include the consideration of a flat rate for all London boroughs.

3.1.3 EVALUATION

The main data source used by the London Costs Group in the determination of its weighting allowances is the Income Data Services (IDS) benchmark estimations for London allowances. In Section 2 we have outlined the shortcomings of using the IDS benchmark data. It was pointed out that this approach does not take into account the potential differences in the characteristics of individuals, and is therefore unlikely to be comparing 'like with like'. We are also of the view that the determination of the zones, particularly outside London, is relatively arbitrary and based on past practice. Indeed, the study did not examine whether there was a case for regional pay allowances outside London.

LONDON COSTS GROUP'S SUMMARY

- The LCG proposals for a new set of weighting allowances is primarily based on pay information that does not take into account the characteristics of employees. Therefore, it is not clear whether the pay evidence is for comparable workers. The approach runs the risk of not comparing 'like with like'
- The approach to zoning is relatively arbitrary and the potential for regional pay differences outside London and the Fringe areas was not examined.

3.2 OTHER STUDIES

3.2.1 PRIVATE SECTOR AND PUBLIC SECTOR WAGE DIFFERENTIALS

In a recent study for the DETR, Elliot *et al* (see Table 5.5, Elliot et al., 1996) provide statistical results on regional pay differentials for both the private and public sectors. The statistical results are based on a regression analysis of pay taking into account age, gender, occupation, industry, years of schooling, tenure and qualifications. The calculations are based on a robust statistical methodology. The Elliot report indicates the following:

'public sector wage differentials are more compressed or 'flatter' than those observed in the private sector'

In other words if we were to observe a 25% pay differential between London and the rest of the country for private sector employees, we would expect to see a lower differential for public sector employees (say 15%). It is argued that this is due to a combination of the presence of national wage bargaining arrangements and/or the stronger trade union representation in the public sector.

We have recalculated the Elliot et al work using data that are more recent and a more precise definition of a public sector employee. As with the Elliot study, our study also shows high positive correlation between public and private sector wage differentials. Thus, areas with relatively high wages in the private sector also have relatively high wages in the public sector. This observation is reinforced by a high Pearson correlation coefficient of 0.88 (a value of 1 would indicate perfect correlation).

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The study also highlights that the public sector area wage differentials tend to be lower than the private sector estimates. It follows that an important lesson from this analysis is that public sector institutions may wish to exercise caution before calculating their regional weightings from the evidence in the private sector. This argument is stronger the more an institution is exposed to national wage scales or bargaining arrangements with unions.

Private and Public Wage Differentials – Summary

- Statistical evidence from rigorous statistical studies show that public sector wages for a comparable worker varies significantly across the country. This variation in public sector wages is closely correlated with private sector wages
- The pattern of public sector wages across areas, however, is likely to be more compressed when compared with the private sector as a result of the effects of trade unions and/or national pay scales covering a larger share of workers in the public than in the private sector
- A public sector institution will need to exercise care in assessing how integrated it is with local market forces. The greater an institution is exposed to local market forces the more appropriate will be the use of private sector evidence.

3.2.2 POLICE WAGE DIFFERENTIALS

In a study carried out by Maxwell Stamp on behalf of the DETR, we collected data from the Government Actuary Department (GAD) on the salary details of every police officer in the country in post on 1 May 1996.⁵ An objective of this work was to explore whether there is any significant variation in the pay of comparable police officers over and above the variation that would be expected due to London Allowances.

Using regression analysis we estimated a set of area salary differentials for each police force in England and Wales. Broadly, the estimates indicate that there is significant regional variation in earnings for police officers. Taking into account differences in age, gender and number of years in the service, the estimates indicate that the City of London and the Metropolitan Police have a

⁵ The data was collected as part of a strategic review of future pension implications. Each police force provided details on annual salary, length of service, age, sex and rank of each police officer. This information is available for over 120,000 police officers.

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salary premia of 9.8% and 7.8% respectively. For example, we would expect to see a 9.8% difference in the salary of a 26-year-old female constable in the City of London compared with the salary she would receive in Cornwall.

A key feature of this study is that outside London there is also significant variation. We found that in the Thames Valley, police officers are paid 3.8% more than in Cornwall. In Leicestershire, police officers are paid 3.7% more. This is a particularly interesting piece of information as police officers are paid according to extremely rigid pay scales with supposedly no room for variation outside London.

In assessing the pay to police officers it is always important to consider the role of housing allowances. We have also collected information on housing allowances for each police force. We know that police officers joining the police force after 1 April 1990 and before the 1 September 1994 receive a housing allowance⁶. Adding the housing allowances to police salaries indicates a greater variation in police remuneration. Of course these regressions cover a different sample of people as compared with the full sample. None the less, the City of London and the Metropolitan Police area salary differentials increase to 14% and 14.3% respectively. There is also greater variation in the area wage differentials outside London.

Police Wage Differentials – Summary

- Evidence presented above from a cross section of 120,000 police officers indicates that there is variation in police pay throughout the country. Therefore, even in an environment where regional pay variation is deliberately suppressed through a rigid national pay scale, there still remains evidence of police authorities in some areas paying more for a comparable worker than others
- Furthermore, when housing allowances are taken into account as part of a police officer's remuneration, then the area wage differentials are spread wider and the London effect increases significantly.

⁶ The arrangements are rather complicated for police officers who joined the police force before 1 September 1990 due to transitional rent relief for housing.

3.2.3 EDUCATION

Teacher records are supplied from the Database of Teachers Records (DTR) which is held by the DFEE and include individual staff information, and pay and ‘quality’ information.

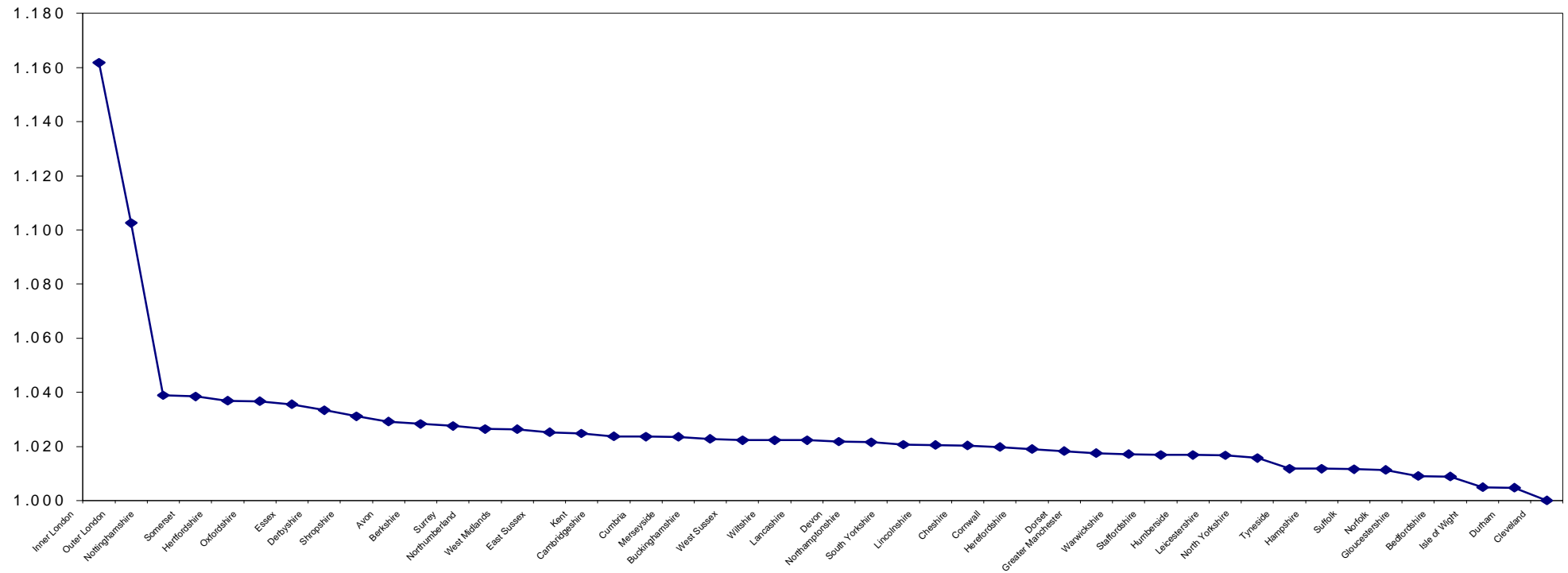
In Figure 3.1, average teachers’ salaries for Inner London, Outer London, metropolitan counties and shire counties are illustrated. Teacher salaries are adjusted by age in order to permit comparability. In addition, the lowest average salary (Cleveland) is set equal to 1.00. The bulk of the variation is explained by the London area, where salaries are on average 16% (Inner London) and 10% (Outer London) above the lowest salary area (Cleveland).

As in the case of police officers, teachers are paid according to national wage scales – although there is now greater opportunity for introducing local variation. Again, however, even in an environment where we would expect to see a compression of regional pay differentials, there still remains significant effects for London, and evidence of regional pay variation in the rest of the country.

Teachers’ Wage Differentials – Summary
<ul style="list-style-type: none"> • Evidence presented above from the Database of Teachers’ Records indicates that there is variation in teachers’ pay throughout England • London explains the bulk of variation, whereas outside Greater London the variation in wages is small • The wage differentials for teachers in this analysis only compares teachers of a similar age, and therefore the results may not be as robust as the police study.

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Figure 3.1 Wage Differentials for Teachers



3.3 THE REVIEW BY THE DETR OF LABOUR COST ADJUSTMENT ACROSS COUNCILS

3.3.1 AREA COST ADJUSTMENT

The need for compensating some local authorities for higher labour costs is not a recent idea. In 1977/78, on the basis of estimates using the New Earnings Survey (NES), some local authorities were compensated for the higher costs they incurred. The rationale of the adjustment was the same as today: to adjust the Rate Support Grant (RSG) system to reflect differences in labour costs required to provide a standard level of service (Elliot et al 1996).

In its first form, the system was aimed at compensating London's local authorities for their higher labour costs compared with the rest of the country. The NES was used to construct a ratio reflecting differences in average earnings and was based on some occupational groups which were considered to be relevant for local authorities. This ratio was then adjusted with information on the actual additional pay bill sustained by London local authorities to derive a London weighting.

Subsequently, by the beginning of the 1980s, the system for Labour Cost Adjustment (LCA) was reviewed. Changes to the previous system included a differentiation for areas in Greater London and the fringes. In addition to a territorial differentiation within the London area, the estimation methodology was also changed by relying solely on the NES data rather than on information on London weighting provided by local authorities.

3.3.2 THE CURRENT AREA COST ADJUSTMENT (ACA) METHODOLOGY

The present ACA methodology comprises two components:

- a labour cost adjustment, the LCA
- a business rate adjustment, the RCA.

In calculating the LCA, eight occupation groups are chosen to represent the general labour market within which the local authorities recruit. The pattern of regional variation is displayed by the weighted average of the eight occupations mapped across local authority areas in England. This pattern is used to reveal the relative costs of employing labour in the different areas of the country. Information on earnings and employment is taken from the New Earnings

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Survey (NES). Information on the characteristics of employees are **not** included in this approach.

The labour cost adjustment is calculated for six areas in the South East as a ratio to the rest of the country, which is treated as a single territory. The areas are the following:

London:

- City of London
- Inner London Boroughs
- Outer London Boroughs

Rest of South East:

- Inner fringe area
- Outer fringe area
- Other South East Districts

Once a ‘Standard Wage’ is calculated for each local authority, a Weighted Standard Wage is obtained. This is done by summing up each local authority Standard Wage multiplied by the proportion of the ACA area population, which is accounted for by the relevant local authority. Then, by dividing the WSW for each ACA area by the weighted standard average for the Rest of England, the relativities are calculated.⁷ It is rather complicated. The final outcome of this methodology for 1996/97 is illustrated in Table 3.1.

Table 3.1 Weighted Standard Wage for ACA Areas, 1996/97

ACA Area	Weighted Standard Wage	Ratio to the Rest of England	Ratio expressed as % above the Rest of England
City of London	13.5265	1.6728	+67.28
Inner London	10.4197	1.2886	+28.86
Outer London	9.2750	1.1470	+14.70
South East	8.7484	1.0819	+8.90
Inner Fringe	9.5096	1.1760	+17.60
Outer Fringe	9.1307	1.1292	+12.92
Other South East	8.5352	1.0555	+5.55
Rest of England	8.0862	1.0000	0.00

Source: Elliot *et al.*, 1996

⁷ In order to produce a reasonably smooth progression of standard wages across areas – particularly for the inner and outer fringe areas and the other south-east districts – a series of scaling factors are applied. For more detail see Elliot et al 1996 pages 18-19.

The labour cost adjustment is finally derived by multiplying the ratio of the Weighted Standard Wage in each ACA by the share of labour costs in each service block.

3.3.3 THE REGIONAL PAY PREMIUM (RPP) APPROACH

In 1995 the Department of Environment (DOE) launched a comprehensive review of the Area Cost Adjustment. The review included a lengthy process of consultation and several studies carried out by universities and private consultancies.

The review of the current system was launched to ‘resolve differences between authorities in the South East of England who benefit from ACA and those in the Rest of England who do not’ (Elliot et al 1996). A review of the current ACA methodology was requested to eliminate some perceived weaknesses in the current system. These weaknesses included:

- only eight occupations were used to calculate the labour cost adjustment and it was questioned whether these would represent the general labour market in a complete way
- the definition of Inner and Outer London areas was rather arbitrary
- standard wages are not controlled for many of the factors (age, education, length of services, etc) which affect wages in different areas.

The outcome of the independent review commissioned by the Department of Environment is the Regional Pay Premium (RPP) model. The RPP is a methodology that attempts to provide reliable estimates of regional pay differentials that can be translated into Area Cost Adjustment (ACA) factors.

The approach aims to estimate the ‘additions to pay that employers in different parts of the country need to offer in order to attract and retain employees of comparable quality’ (Elliot et al 1996).

The method used to provide these estimates is regression analysis using general labour market earnings data from the Labour Force Survey (LFS). Elliot et al argue that the labour markets in which local authorities operate are an integral part of the general labour market. Therefore, applying regression analysis on data from the general labour market will provide reliable estimates of the regional pay differentials for local authority workers.

The main innovation of the proposed RPP approach is the use of data for all employees regardless of whether they work within the private or the public

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sector. According to Elliot et al ‘the rates of pay in the general labour market identify the opportunity costs to employees of working for local authorities and therefore are the rates that local authorities need to pay to attract and retain labour of an appropriate quality’.

The approach is robust and meets the key requirements for estimating reliable regional pay differentials. Indeed, Maxwell Stamp’s research on this data shows that the estimated differentials are constant over time. The results from this approach are set out in a summary table in Section 3.4.

DETR Approach – Summary
<ul style="list-style-type: none"> • The current ACA methodology estimates London weighting factors through examining regional averages of pay over eight occupation groups in the New Earnings Survey. Its main weakness is that it does not take into account the characteristics of individuals and therefore may not be comparing the pay of comparable workers • The Regional Pay Premium (RPP) approach proposed by Elliot et al is a further extension of the general labour market approach and is based on the Labour Force Survey for a larger number of occupations (both private and public). The RPP approach provides a rigorous basis for estimating regional pay differentials.

3.3.4 NHS EXECUTIVE APPROACH

The system set up by the NHS Executive to distribute money to health authorities is based on a capitation formula which includes a Market Forces Factor (MFF). The capitation formula takes into account demand side indicators such as population size, age structure, health status and indicators of socio-economic conditions in each area.

The MFF takes into account varying staff costs across the country. Estimates of staff costs are based on regression analysis, using general labour market evidence from the New Earnings Survey (NES). Using the NES data, an area wage differential is estimated for each of the seventy-eight Health Authorities. A wide range of individual characteristics is included in the regressions – thus ensuring the ‘comparability test’ is passed. The staff MFF is therefore based on a variant of the general labour market approach. The NHS Executive approach provides robust estimates of regional wage differences.

An interesting aspect of the NHS Executive approach is the use of a cut-off point set out to ensure a flat schedule for the lowest 18 Health Authorities.

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The rationale of this cut-off point is that there are some Health Authorities that are paying above the local 'going rate'. Therefore, it would be appropriate to 'find the area where the going rate equated with the NHS pay rate and turn this, and areas with lower differentials, into a rest of England zone' (NHS Executive, 1997). The main results from the NHS Executive approach are provided in Section 3.4.

The conceptual basis for a cut-off point in the MFF Pay index was developed by the Review Team evaluating the Hospital and Community Health Services⁸ (HCHS) allocation model. It has particular relevance for those occupational sectors (like health and education) where national pay scales are widespread and wage geographical distribution is therefore more flat than in other sectors.

NHS Executive Approach – Summary

- The NHS Executive adopts a general labour market approach to estimate staff costs in the NHS using evidence from the New Earnings Survey. It is robust in its method
- A variant of the MFF methodology is the use of a cut-off point, set out to ensure a flat schedule for the lowest 18 Health authorities.

8

3.4 SUMMARY

In this section we have considered a range of studies and practices on calculating and estimating regional pay differences. Our main conclusions are:

Main Conclusions of the Review of Practices
<ul style="list-style-type: none"> • The London Cost Group (LCG) proposals for a new set of weighting allowances is primarily based on pay information that does not take into account the characteristics of employees – IDS data. Thus, it is not clear whether the evidence is for comparable workers. The approach runs the risk of not comparing ‘like with like’ • The LCG approach to zoning is relatively arbitrary and the potential for regional pay differences outside of London was not examined • Public Sector regional wage differentials tend to be ‘flatter’ than private sector wage differentials. This is likely to be more acute in public institutions with national wage scales or a greater presence of wage bargaining with unions – the evidence on both police and teachers provide support for this proposition • The research work on police and teachers’ pay also shows that, even in the case of sectors with a strong national pay scale framework, there still remains a significantly high differential for London, and there is evidence of regional pay differences outside London – these are relatively small but statistically significant • The RPP approach, developed as part of the DETR Review, provides a robust method for estimating regional pay differences. The approach is to use regression methods on pay data from the Labour Force Survey (LFS). This approach takes into account the characteristics of individuals that are likely to influence pay, such as age, qualifications etc • The NHS Executive has introduced a similar model to the DETR Review model. It is based on evidence from the New Earnings Survey. The Executive would have preferred to use NHS information on pay and employees’ characteristics but it was not sufficiently reliable. Nonetheless, the NHS Executive approach is also a robust method based on a general labour market model.

Table 3.2 (see overleaf) illustrates the results from the various approaches discussed in this section.

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Table 3.2. Results from different approaches to calculating wage differentials

	FEFC	FEFC	Teacher	Police	RPP	NHS
	Old	LCG				
	(1)	(2)	(3)	(4)	(5)	(6)
City of London	105/109	112.00	116.41	114.00	162.72	147.15
Camden	105/109	112.00	116.39	114.30	142.95	137.26
Greenwich	105/109	112.00	112.72	114.30	142.95	112.09
Hackney	105/109	112.00	115.80	114.30	142.95	138.78
Hammersmith/Fulham	105/109	112.00	111.55	114.30	142.95	130.89
Islington	105/109	112.00	112.14	114.30	142.95	135.66
Kensington/Chelsea	105/109	112.00	115.80	114.30	142.95	134.09
Lambeth	105/109	112.00	110.91	114.30	142.95	133.36
Lewisham	105/109	112.00	114.51	114.30	142.95	116.19
Southwark	105/109	112.00	113.42	114.30	142.95	138.21
Tower Hamlets	105/109	112.00	116.16	114.30	142.95	140.43
Wandsworth	105/109	112.00	114.65	114.30	142.95	122.86
Westminster	105/109	112.00	112.45	114.30	142.95	147.15
Total Inner London	105/109	112.00	113.89	114.30	142.95	133.39
Barking	103-107	106.00	109.53	114.30	131.31	115.50
Barnet	103-107	106.00	106.55	114.30	131.31	116.38
Bexley	103-107	106.00	105.53	114.30	131.31	114.29
Brent	103-107	106.00	115.41	114.30	131.31	122.40
Bromley	103-107	106.00	108.73	114.30	131.31	112.31
Croydon	103-107	106.00	105.82	114.30	131.31	117.64
Ealing	103-107	106.00	109.12	114.30	131.31	122.86
Enfield	103-107	106.00	108.10	114.30	131.31	116.56
Haringey	103-107	106.00	111.87	114.30	131.31	114.18
Harrow	103-107	106.00	107.68	114.30	131.31	116.10
Havering	103-107	106.00	105.97	114.30	131.31	110.79
Hillingdon	103-107	106.00	107.09	114.30	131.31	132.29
Hounslow	103-107	106.00	106.46	114.30	131.31	122.91
Kingston upon Thames	103-107	106.00	107.10	114.30	131.31	117.93
Merton	103-107	106.00	111.10	114.30	131.31	112.45
Newham	103-107	106.00	110.49	114.30	131.31	118.35
Redbridge	103-107	106.00	107.19	114.30	131.31	113.85
Richmond upon Thames	103-107	106.00	106.37	114.30	131.31	122.50
Sutton	103-107	106.00	106.98	114.30	131.31	118.20
Waltham Forest	103-107	106.00	105.66	114.30	131.31	106.91
Total Outer London	103-107	106.00	108.09	114.30	131.31	117.22
Greater Manchester			99.76		111.8	102.18
Merseyside MCC			100.34	98.20	112.91	103.30
South Yorkshire			100.06	98.10	107.79	100.00
Tyne and Wear			99.20		108.3	100.05
West Midlands			100.62	101.00	111.84	101.18
West Yorkshire			99.58	96.80	110.53	100.00

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	FEFC	FEFC	Teacher	Police	RPP	NHS
	Old	LCG				
	(1)	(2)	(3)	(4)	(5)	(6)
Berkshire			100.82		126.68	120.60
Surrey			100.74	102.80	125.94	120.45
Buckinghamshire			100.28		122.2	113.74
Hertfordshire			101.65	102.00	122.88	113.73
West Sussex	104.00	103.00	100.23	98.00	118.8	112.16
Oxfordshire			101.64		116.51	110.49
Bedfordshire			98.9	98.50	118.44	108.57
Hampshire			99.19	101.60	116.01	108.56
Essex			101.52	105.20	114.44	108.11
Wiltshire			100.23	104.50	113.35	107.46
Avon			100.89	98.50	115.38	107.42
Cambridgeshire			100.37	99.90	114.1	106.78
Kent	105.00	103.00	100.47	103.20	115.71	106.74
Cheshire			100.03	102.30	114.26	105.63
Northamptonshire			100.15	101.40	114.36	105.14
Gloucestershire			98.92	101.30	110.4	104.98
Cleveland			98.04	97.60	110.06	104.17
Suffolk			99.17	105.20	112.1	102.89
Dorset			99.83	99.00	110.07	101.53
Cumbria			100.35	96.40	109.86	101.41
Durham			98.50	99.50	104.96	100.44
East Sussex			100.51	98.00	115.75	100.15
Humberside			99.69	100.60	106.54	100.13
Derbyshire			101.31		106.75	100.00
Devon			100.18		105.56	100.00
Hereford & Worcester			99.90		107.54	100.00
Isle of Wight			98.52		104.47	100.00
Lancashire			100.22	96.90	106.59	100.00
Leicestershire	104.00	103.00	99.68	99.40	110.02	100.00
Lincolnshire			100.05	99.20	106.63	100.00
Norfolk			99.14	100.60	109.86	100.00
North Yorkshire			100.24	94.50	109.15	100.00
Northumberland			100.64	94.50	111.53	100.00
Nottinghamshire			101.86	97.60	111.18	100.00
Shropshire			101.09		105.73	100.00
Somerset			101.81	98.50	107.61	100.00
Staffordshire			99.69	100.00	105.98	100.00
Warwickshire			99.72	104.20	112.73	100.00
Cornwall			100.00	100.00	100.00	100.00

Source: (1) and (2) Data taken from London Cost Group, Proposal for the London Weighting Factor
(3) Review of Area Cost Adjustment, 1998; (4) Maxwell Stamp, 1998; (5) Elliot et al., 1996;
(6) HCHS Revenue Source Allocation to Health Authorities, NHS Executive, 1997

4. REGIONAL WEIGHTING ALLOWANCES FOR THE FURTHER EDUCATION SECTOR

4.1 INTRODUCTION

In the following Maxwell Stamp brings together the discussion and evidence of the previous sections to develop regional weighting allowances for the FEFC funding allocation formula.

The section is structured as follows. At the outset, we put the alternative arguments for pursuing a specific approach based on FEFC data or a general labour market approach to determining regional pay differentials for the FE sector. This is followed by an examination of pay data and information on employees' characteristics supplied by the FEFC. We conclude that the FEFC data performs satisfactorily as a basis for providing regional weighting allowances. Indeed, the results using the FEFC data are broadly in line with what is found in the other general labour market models.

4.2 SPECIFIC APPROACH *VERSUS* GENERAL LABOUR MARKET APPROACH

The main feature of the more robust models discussed in Section 3 is their reliance on the general labour market. According to this general labour market approach, public sector institutions such as colleges, schools, hospitals etc operate within the wider labour market. They do not employ workers in isolation from the dynamics of local labour markets – they must be prepared to pay the 'going-rate' for the labour they require.

An important implication of this approach is that the regional pay differentials that emerge from the general labour market are thought to be a reliable indicator of the pattern of pay across the country for a similar employee, whether this employee is working in a public body or the private sector. It follows that large scale surveys of employees' pay and characteristics, such as the LFS and NES, can provide reliable estimates of regional pay differences for public bodies, such as local authorities, colleges and health authorities.

It has been argued, however, that public sector institutions have different pay patterns to those in the private sector. In this case the general labour market approach would need to be adapted to take account of any market 'imperfections' in the public sector.

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An alternative to the general labour market approach that would, by definition, deal with any market ‘imperfections’ is the specific institutional approach. This approach involves examining the actual pay of employees in an institution and relating this to the employee’s characteristics. The pay differences across regions are then used to calculate the labour cost adjustment factors. The advantage of this approach is that labour cost adjustments are calculated on the basis of actual incurred costs rather than estimates based on general labour market indicators.

There are some drawbacks with this approach. The reason why the specific approach is relatively rare is because it is not always easy for an institution to get reliable data. This is particularly so when it has to be supplied by a number of different institutions such as local authorities or colleges. Furthermore, institutions may face perverse incentives if they are aware that the data they supply is a key factor in determining their funding allocation.

In the next sub-section we examine The Further Education Funding Council (FEFC) data on pay and employees’ characteristics and consider its appropriateness for determining regional pay weightings for the FE sector.

4.3 SPECIFIC DATA APPROACH

4.3.1 FEFC DATA

Maxwell Stamp has collected data from the FEFC on the total pay of employees in each college. Information has also been collected on all employees’ characteristics in each of the colleges. The employee characteristics information includes:

- age
- gender
- qualifications
- training information
- amount of time in an Higher Education (HE) activity
- type of contract
- ethnic origin
- type of college.

Within each college we have aggregated the employee data to reach a college average for each characteristic. For example, for each college we calculated

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the percentage of woman employees and the average age of employees. We also included the county or London borough in which each college was located.

This information was available for the three years 1994 to 1997. Our approach was to carry out a regression analysis that estimated the relationship between the log of average pay against the characteristics described above – including the location variable. As described in Section 2 the aim of this approach is to estimate the regional pay effect having taken into consideration the characteristics of individuals. Although the FEFC analysis is carried out in terms of college averages, it can be regarded as a close approximation to the results that would be derived from a regression based on individual employees. Therefore, in principle, using the FEFC data is a robust method of estimating wage differentials but it does require that the data is reliably accurate. We turn to this issue in the following sub-section.

4.3.2 RESULTS AND EVALUATION

The experience of Maxwell Stamp with the FEFC data has on the whole been positive. In some cases, the average pay observations for some colleges have been either unrealistically large or small. We have removed these colleges from the data set. In the individual case of the county of Dorset, where the average pay of a number of the colleges appeared idiosyncratic, we have removed the whole county. Removal of some of these colleges from the data set may impact on the representativeness of the sample. However, we are of the view that there remains a sufficient number of observations in the data for this not to be a serious problem.

The final data set used in our analysis was made up of a pooled cross-section of over 800 colleges using a repeated sample over the three years – 1994 to 1997. Therefore, some colleges may appear three times in the data set – once in each year. This is a very positive feature of the data because it allows the use of relatively sophisticated panel data estimation methods. In particular we are able to remove potential biases following this approach.

The estimation work of Maxwell Stamp showed the following:

- the zoning of London into separate boroughs has proved too problematic given the lack of observations in each of the boroughs
- there is not a case for grouping London into one zone
- it was possible to find a clear statistical distinction between three areas in London: an inner, middle and outer core

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- a number of counties surrounding London have significantly higher regional wages differentials, albeit significantly below the values for the inner and middle London cores
- significantly higher regional wage differentials were also found in the West Midlands and Greater Manchester colleges – again, these were significantly lower than the London values. However, the results for the West Midlands and Greater Manchester are not generally supported by other studies – see Table 3.2 in Section 3.

In the regression analysis, the FEFC data picks up London effects very strongly. Table 4.1 shows for London the directly estimated regional wage differential is 1.33 for London A, 1.23 for London B and 1.14 for London C. For example, the figure for London A implies that wages for a standard FE worker are 33% higher in these boroughs compared with the lowest area in the country.

Table 4.1 Estimated Regional Wage Differentials – FEFC data

Regional Weighting Allowances using FEFC data			
	(1) Raw Wage Differentials	(2) New FEFC Differentials	(3) Current Model
London A	1.33	1.18	1.12
London B	1.23	1.11	1.12
London C	1.14	1.05	1.06
Surrey	1.08	1.01	1.03
Sussex	1.08	1.01	1.00
Bedfordshire	1.08	1.01	1.00
Essex	1.08	1.01	1.03
Berkshire	1.08	1.01	1.00
Buckinghamshire	1.08	1.01	1.00
Hertfordshire	1.08	1.01	1.00
Kent	1.08	1.01	1.03
Greater Manchester	1.07	1.01	1.00
Hampshire	1.07	1.01	1.00
West Midlands	1.09	1.01	1.00

London A = Camden, Tower Hamlets, Hackney, Kensington and Chelsea, Southwark, Westminster, Islington, City of London

London B = Haringey, Hammersmith, Lambeth, Newham, Brent, Greenwich, Lewisham, Wandsworth

London C = Harrow, Redbridge, Kingston, Hillingdon, Barnet, Hounslow, Richmond, Croydon, Merton, Barking, Ealing, Enfield, Waltham Forest, Bromley, Havering, Bexley, Sutton

However, we have not compared the areas' differentials against the lowest area when determining the 'new' FEFC differential. Instead, a cut-off point of 5%

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has been used.⁹ In effect, we have divided each of the raw differentials in column 1 in Table 4.1 by 1.05. Any areas that have fallen below one have been set to one – this value represents the rest of England. To get to the ‘new’ FEFC regional weightings in column 2 in Table 4.1, we make another adjustment by paring down the regional wage differentials by 70% to reflect the approximate value of the total wage bill in the FE sector. Finally, the values are adjusted to ensure revenue neutrality in the FEFC funding system. This has the effect of reducing the Rest of England (ROE) to 0.99. Setting the ROE back to one, however, involves finding extra money to finance the gainers. Thus, column 2 provides a potential set of regional wage differentials for the FEFC funding formula.

Regional Weighting Allowances for the FE Sector
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- | |
|---|
| <ul style="list-style-type: none"> • The FEFC data performs satisfactorily as a basis for providing regional weighting allowances • The zoning for London should be split into three areas – an inner, middle and outer core – there is no case for a single uniform weighting for London • There are significantly positive regional wage differentials in most of the surrounding counties around London – this is in line with other studies • The majority of the rest of England had very low wage differentials, with values below 1.05, and these values were not statistically different from 1.0. The exceptions were Greater Manchester and the West Midlands which both had relatively high wage differentials • The ‘new’ FEFC values for the London area ranges between 1.05 and 1.18. Outside of London the values are 1.01. |
|---|

⁹ All of the area differentials at 5% or below were insignificantly different from one.

5. SUMMARY AND RECOMMENDATIONS

In this report Maxwell Stamp has attempted to provide a comprehensive analysis and approach to calculating regional wage differentials for the FE sector. We have examined the conceptual and analytical issues involved in this area and have reviewed the work carried out by other institutions that take into account regional pay differences in their funding formulas. Finally, we have examined the FEFC data on pay and employee characteristics and used statistical techniques to estimate regional pay differences in the FE sector.

The details of the ‘new’ FEFC weighting allowances are set in Section 4 and summarised in Table 4.1. They show high allowances for London, and that London can be split into three areas, an inner, middle and outer core. The allowances for the inner and middle cores are significantly above the current allowances used in the 1998/9 funding formula. Maxwell Stamp also find moderate allowances for most of the counties surrounding London. There is also some empirical support in the FEFC data for an allowance for Greater Manchester and the West Midlands. However, the balance of the evidence from other studies does not indicate a high value for both areas.

Therefore, our recommendations would support the case for new allowances based on the FEFC results set out in Table 4.1 for the London area and the surrounding counties. On balance, we believe the case for an allowance for Greater Manchester and the West Midlands is less robust.