

Local pay, local growth

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LSE – February 11th 2013

@Pxeconomics on twitter

Based on: www.tinyurl.com/PXlocalpay and www.tinyurl.com/PXpaygap

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What this will cover

1. Why public sector pay matters
2. How public sector pay is currently set and how that compares to the private sector
3. The impacts of National Pay Bargaining: pay differentials
4. Why do differentials matter:
 1. Productivity / performance of public sector
 2. Local growth
5. How to make things better

Why public sector pay matters

Remuneration accounts for £180 billion (12.3% of GDP) across the public sector

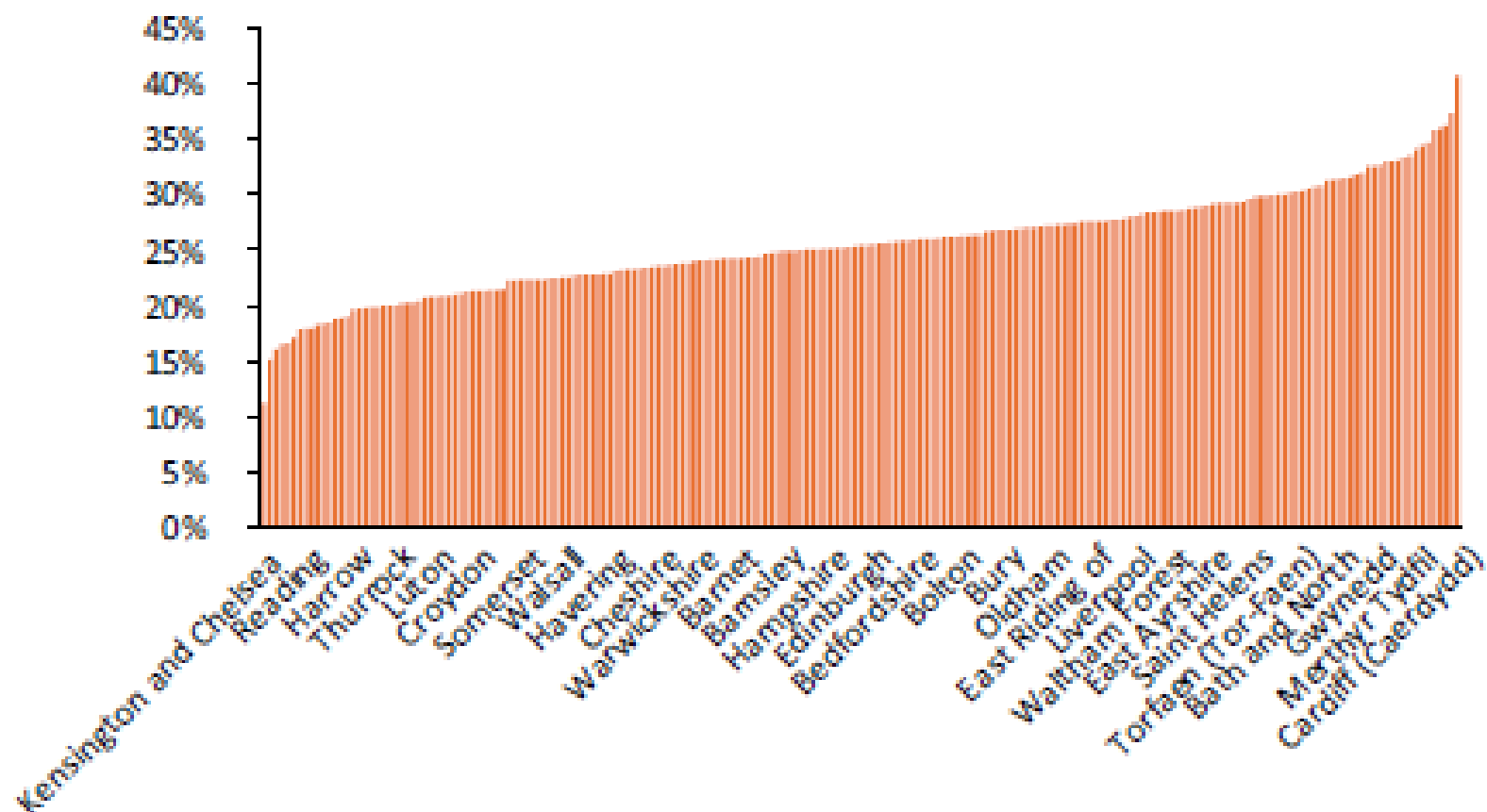
Are we making the most of this money?

- Fairness for taxpayer
- Productivity / quality of public services

What impact does money have on local economies?

- Major part of economy – so where we put the money can create significant transfers
- But with what impact on private sector?

Figure 5: Proportion of working age employees in public sector by Local Authority (APS, 2010/2011)



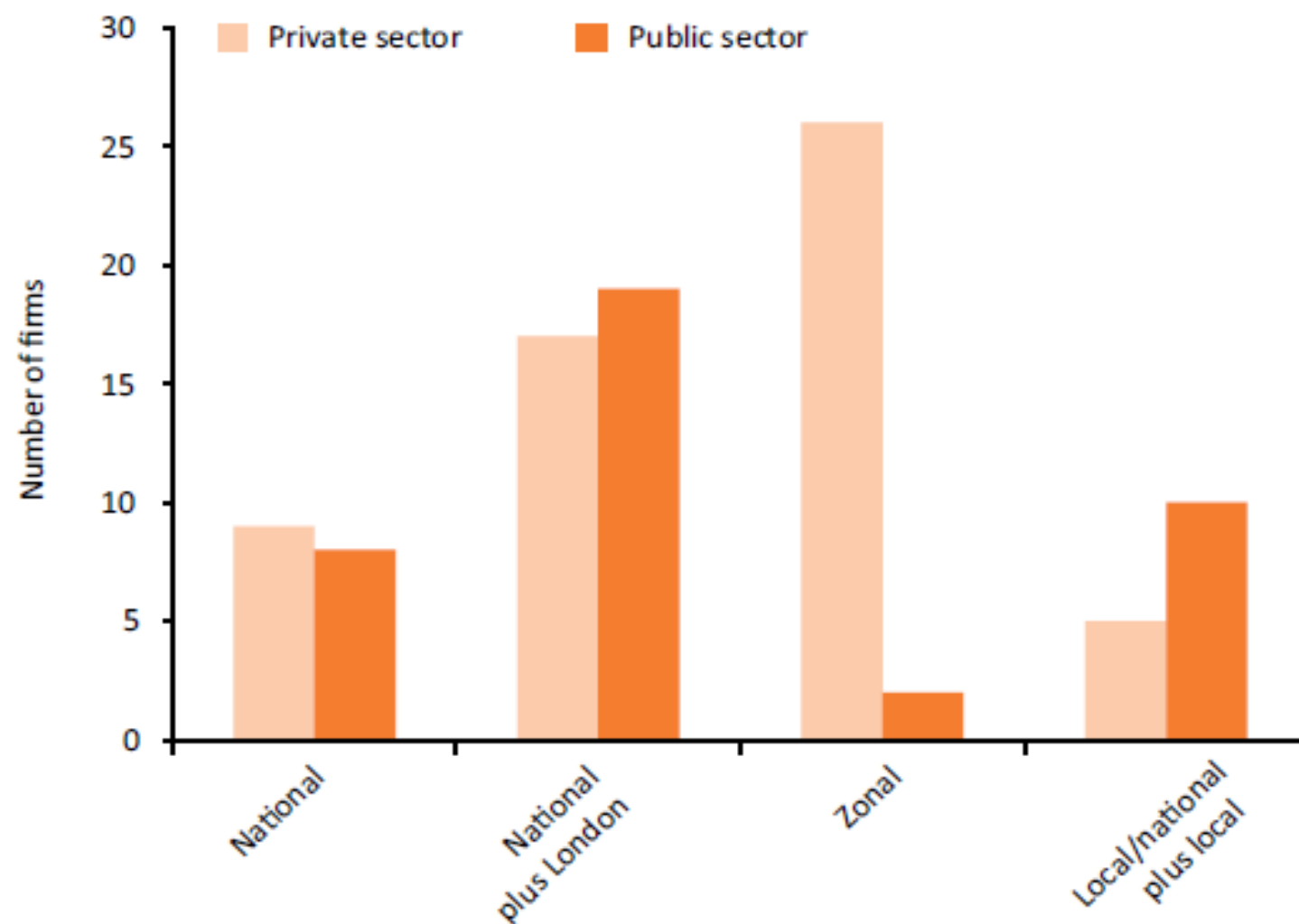
How public sector pay is current set

Quite complex – but still characterised by nationally negotiated collectively bargained settlements

Very little reliance on performance and little geographic variation

Some argue that this mirrors situation in private sector. Is this true?

Figure 9: Instances of basic paysetting



Source: 'Local-based pay differentiation: A research report for UNISON', Income Data Services.

Figure 10: Factors determining base pay (% of respondents citing collective bargaining)

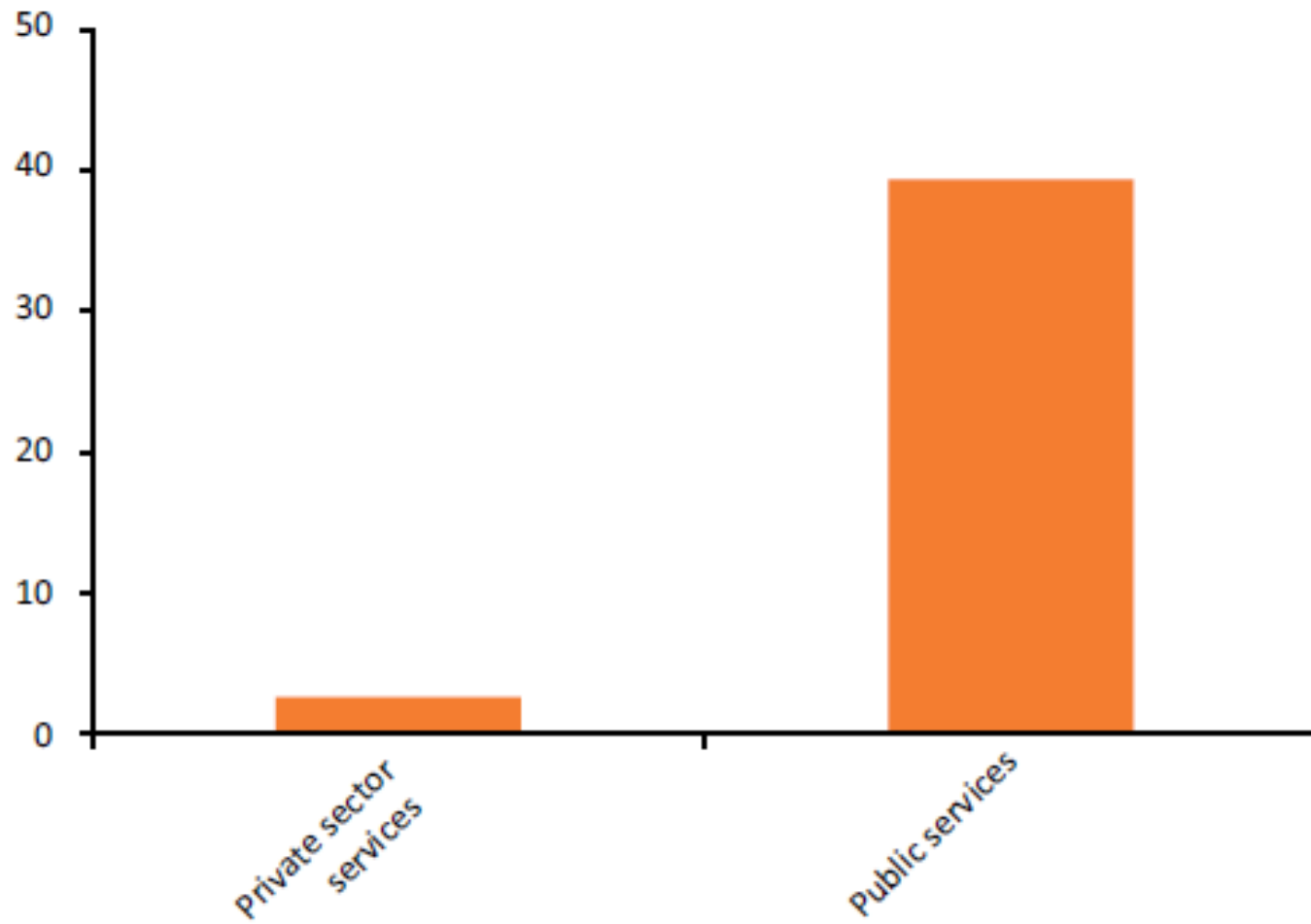


Figure 11: Base pay structures (% of respondents)

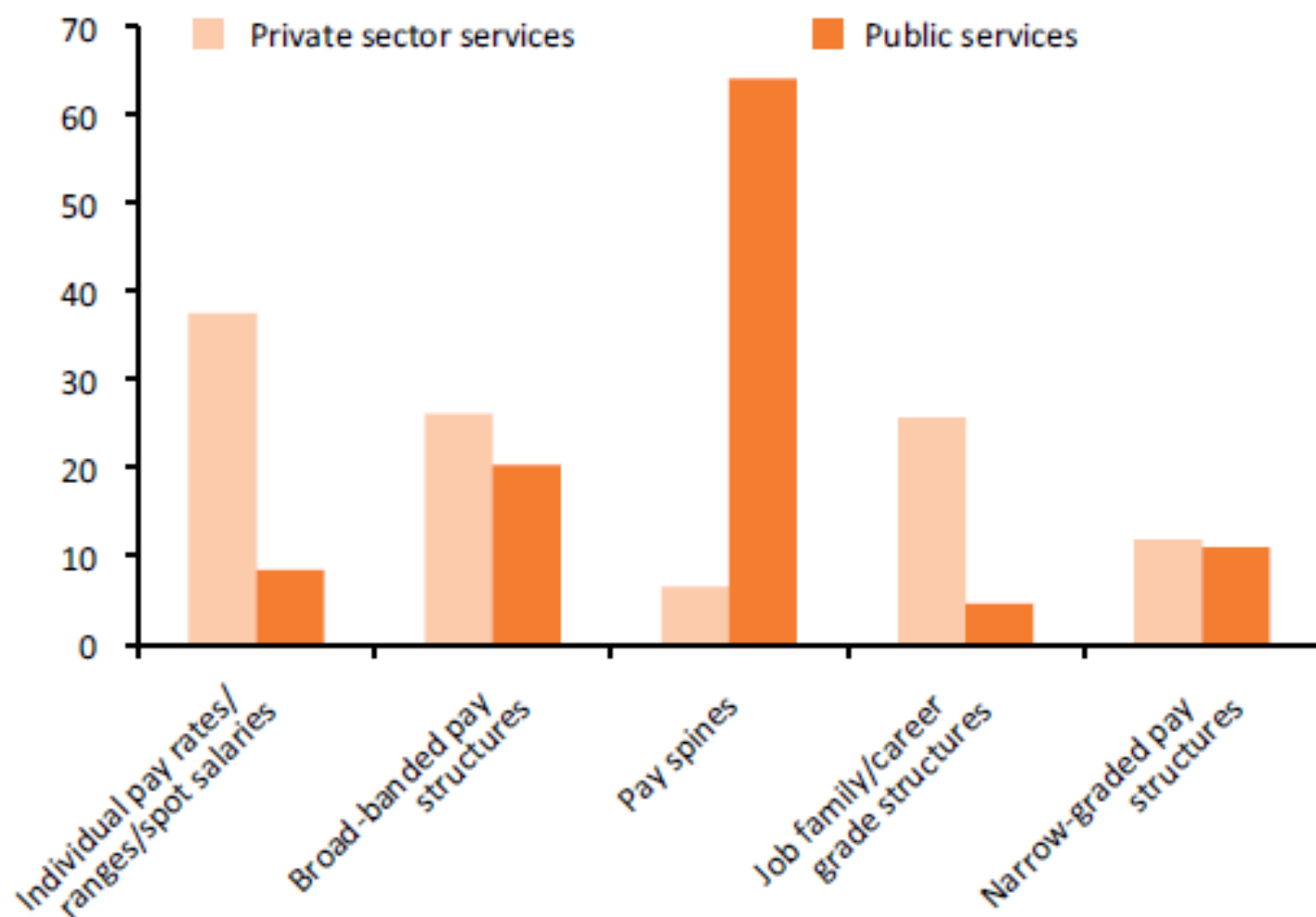
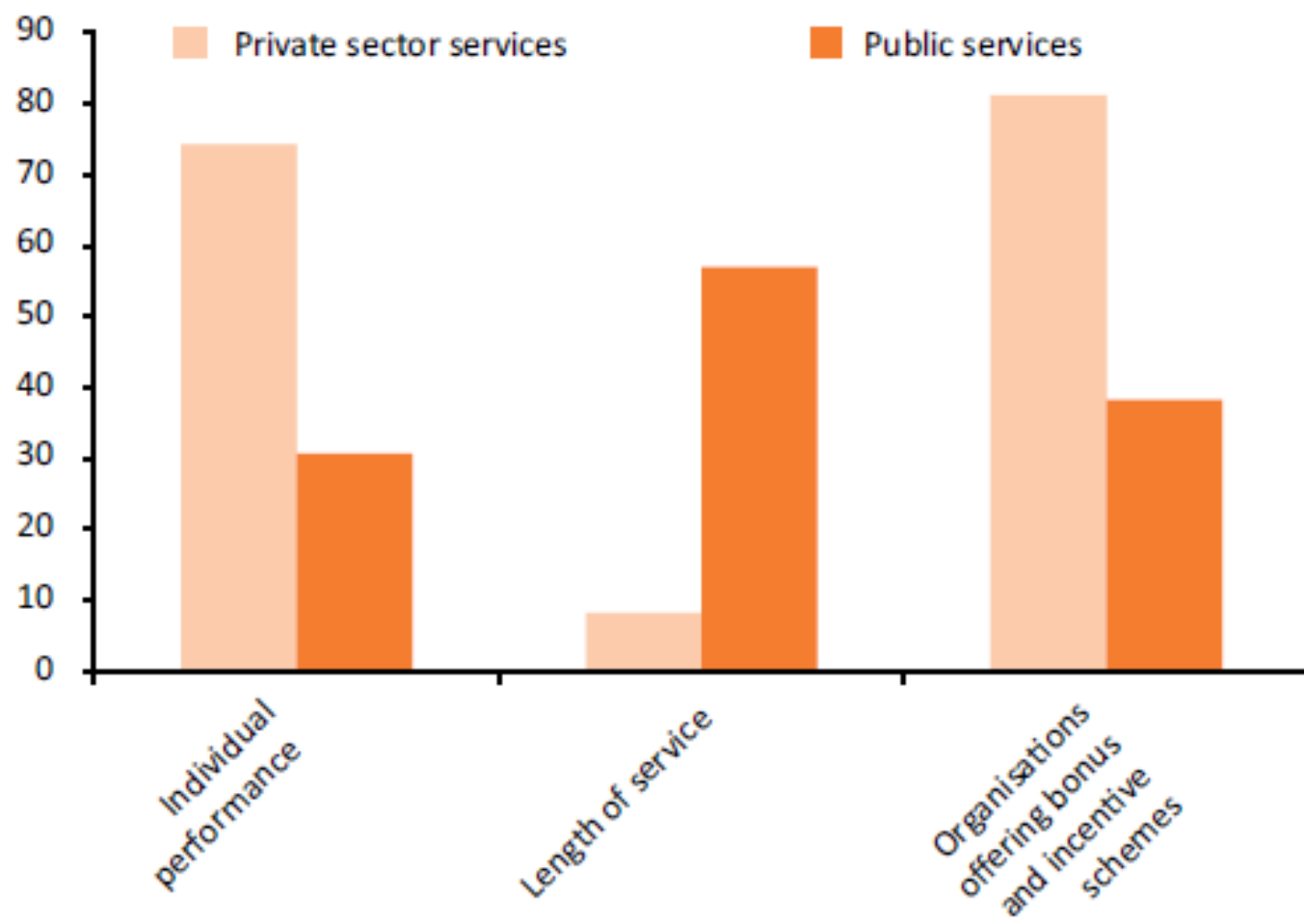


Figure 12: Basis for base pay progression, availability of bonus schemes (% of respondents)



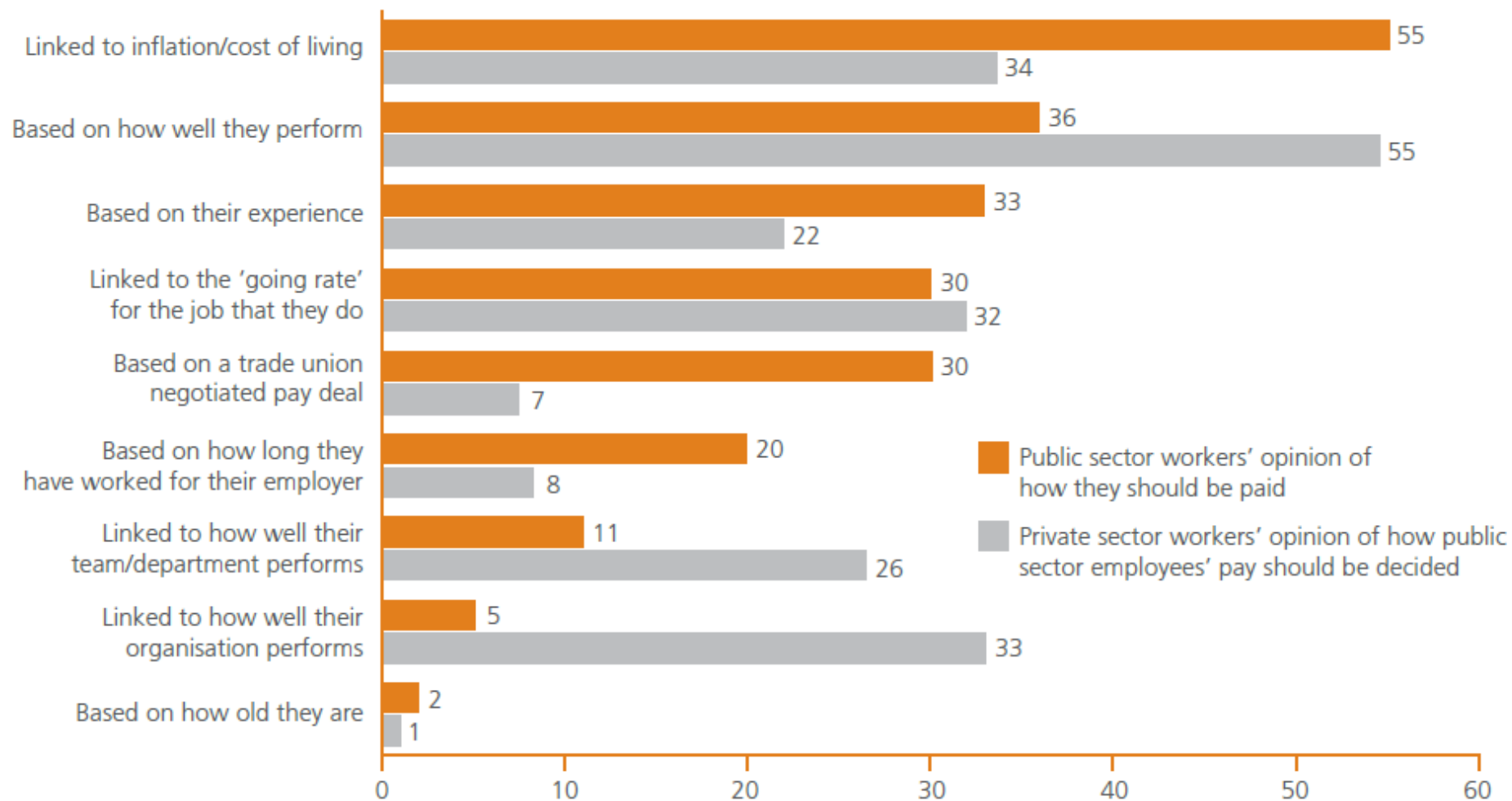
Source: CIPD Reward Management Annual Survey 2011

Pay in public sector - summary

Compared to private sector, pay is determined:

- More through collective agreements
- More at a national level
- With more stringent structures (pay spines)
- With far less regard to performance (progression often through length of service).

Figure 9: Factors on which public sector pay should be decided (opposing sectors) %



Base: All private sector workers (n=2,112); all public sector workers (n=698)

Are things changing?

Reforms to NHS (Agenda for Change) and Academies mean greater flexibility in theory. Local Authorities also have flexibility.

However, in practice these flexibilities are rarely used.

65% of Academies have not used pay flexibility and had no intention to.

60% say national pay agreements / unions make changes difficult.

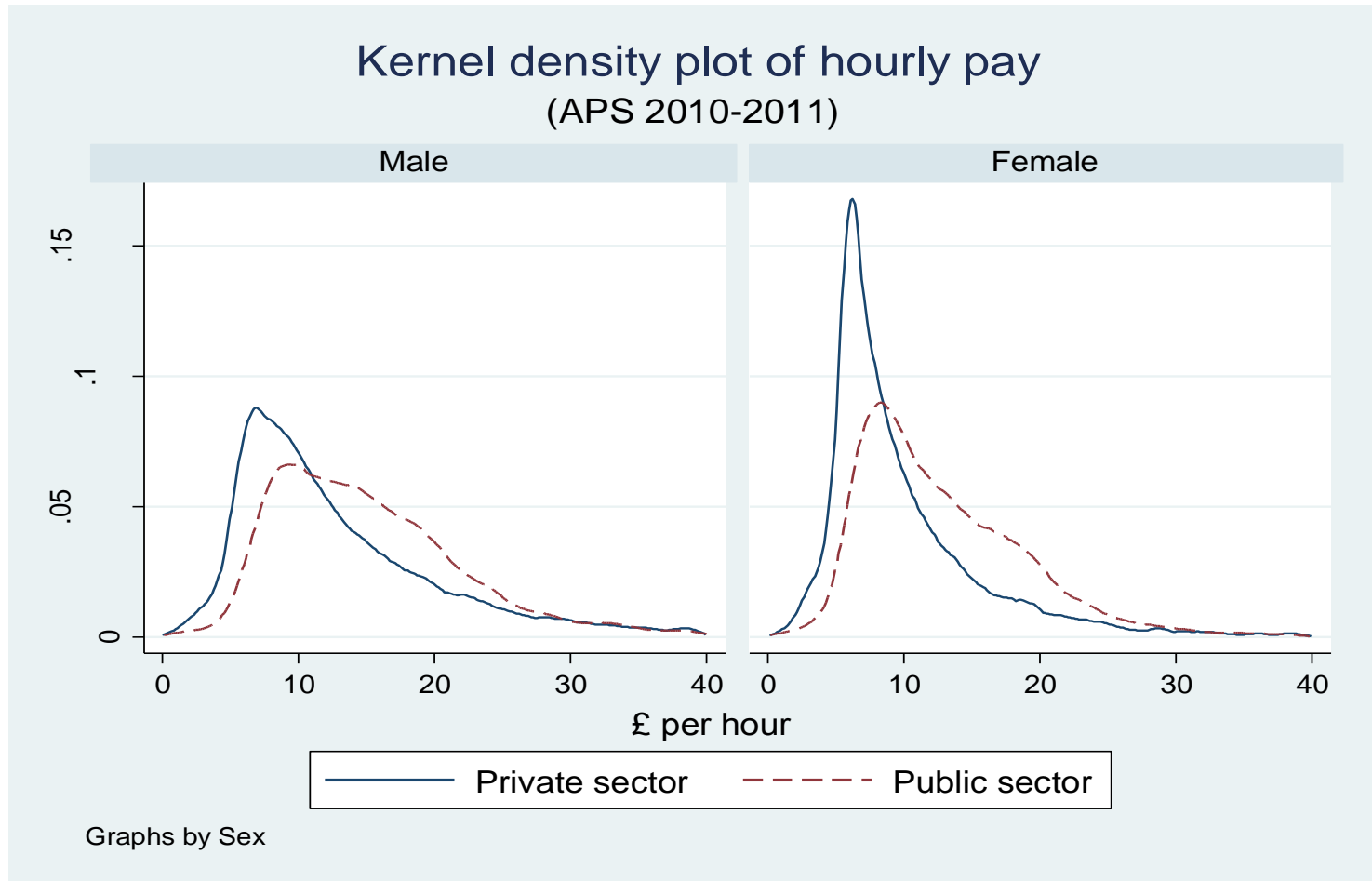
What problems does this cause?

It all starts with pay differentials

Problem with lack of flexibility when compared to private sector is that “market wage” (based on performance and locality) is not paid. This could lead to significant pay differentials between public and private pay.

So do they exist.....?

Raw picture



But characteristics very different

Table 1: Characteristics of the APS sample								
	Private sector				Public sector			
Variable	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
Log of hourly pay	2.313	0.607	-3.912	8.345	2.514	0.502	-1.966	7.902
Full time	0.739	0.439	0	1	0.694	0.461	0	1
Up to a year in job	0.164	0.370	0	1	0.078	0.268	0	1
1-5 years in job	0.200	0.400	0	1	0.220	0.414	0	1
5-10 years in job	0.282	0.450	0	1	0.440	0.496	0	1
Over 10 years in job	0.002	0.040	0	1	0.001	0.038	0	1
Job is permanent	0.950	0.219	0	1	0.926	0.262	0	1
Age	40.387	12.573	16	64	43.860	10.828	16	64
Male	0.544	0.498	0	1	0.329	0.470	0	1
No qualifications	0.053	0.224	0	1	0.024	0.152	0	1
Low qualifications	0.346	0.476	0	1	0.226	0.419	0	1
High qualifications	0.312	0.463	0	1	0.550	0.497	0	1
N	98,859				46,952			

This has motivated a large body of empirical evidence

Previous evidence (3)

Variation across geographical areas

Emmerson & Jin (2012)

Estimated Public Pay Premium	Men (%)	Women (%)	All (%)
Wales	18.0	18.5	18.0
Yorkshire and the Humber	10.5	16.1	13.4
Scotland	5.6	19.9	13.4
East	12.2	14.0	13.0
Northern Ireland	15.5	10.0	12.3
North East	4.6	18.3	11.7
West Midlands	7.1	15.2	11.5
East Midlands	7.1	15.7	11.3
South West	7.5	13.3	10.4
All UK	5.5	11.3	8.3
North West	4.1	10.2	7.4
London	4.7	4.7	4.6
South East	-1.4	2.3	0.5

Mind the gap?

Looks at differentials at Local / Unitary Authority level for the first time.

Combines with quantile regression to assess variation across the wage distribution

Assesses the potential budgetary implications of removing pay differentials.

Empirical strategy - differentials

$$\ln Y_{it} = \alpha + \delta_k X_{kit} + \beta \text{Public}_{it} + \gamma \text{Public}_{it} \cdot \text{Male}_i + \sum_{n=1}^N \theta_n \text{Public}_{it} \cdot \text{LA}_{itn}$$

Where:

$$\text{Public}_{it} = \begin{cases} 1 & \text{if individual } i \text{ is employed in the public sector at time } t \\ 0 & \text{if individual } i \text{ is employed in the private sector at time } t \end{cases}$$

Empirical strategy – quantile regression

Instead of using OLS – use quantile regression to estimate coefficients at different points in the wage distribution.

Essentially involves minimising residuals weighted according to point of distribution of interest.

See Buchinsky (1998) and Koenker and Hallock (2001) for more details.

Results by sub-region

	Q10		Q25		Q50		Q75		Q90	
	Coef.	P> t	Coef.	P> t	Coef.	P> t	Coef.	P> t	Coef.	P> t
Public sector	0.11	0.00	0.10	0.00	0.10	0.00	0.06	0.00	0.01	0.81
Male in public sector	0.00	0.74	-0.02	0.00	-0.05	0.00	-0.05	0.00	-0.03	0.00
<i>Public interacted with:</i>										
Tyne and Wear	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>Base</i>	<i>Base</i>
Rest of North East	0.03	0.32	0.01	0.67	0.02	0.40	0.01	0.71	0.01	0.68
Greater Manchester	0.04	0.09	0.01	0.40	0.00	0.99	0.00	0.84	0.02	0.46
Merseyside	0.04	0.112	0.03	0.15	0.00	0.84	0.02	0.30	0.01	0.88
Rest of North West	0.03	0.24	0.02	0.33	0.00	0.85	-0.02	0.42	-0.04	0.19
South Yorkshire	0.06	0.02	0.04	0.07	0.01	0.56	0.04	0.09	0.06	0.11
West Yorkshire	0.04	0.16	0.01	0.79	0.01	0.62	0.02	0.28	-0.04	0.22
Rest of Yorkshire & Humberside	0.11	0.00	0.03	0.11	0.04	0.11	0.04	0.08	0.03	0.47
East Midlands	0.04	0.13	0.02	0.21	0.00	0.85	-0.02	0.26	-0.02	0.58
West Midlands Metropolitan County	0.02	0.54	0.01	0.74	0.01	0.69	0.01	0.68	-0.01	0.85
Rest of West Midlands	-0.01	0.81	0.00	0.99	0.02	0.39	-0.01	0.76	0.06	0.09
East of England	0.01	0.64	-0.01	0.71	-0.05	0.00	-0.07	0.00	-0.11	0.00
Inner London	0.08	0.01	-0.01	0.72	-0.09	0.00	-0.20	0.00	-0.28	0.00
Outer London	0.11	0.00	0.08	0.00	-0.04	0.04	-0.07	0.00	-0.12	0.00
South East	0.02	0.34	-0.04	0.02	-0.11	0.00	-0.14	0.00	-0.20	0.00
South West	0.03	0.17	0.01	0.78	-0.01	0.55	-0.04	0.04	-0.08	0.01
Wales	0.06	0.01	0.05	0.00	0.04	0.04	0.06	0.00	0.07	0.02
Strathclyde	0.08	0.00	0.07	0.00	0.04	0.06	0.02	0.31	0.00	0.94
Rest of Scotland	0.07	0.00	0.04	0.01	0.00	0.93	-0.01	0.52	-0.04	0.18
Northern Ireland	0.06	0.02	0.05	0.06	0.02	0.42	0.05	0.08	0.12	0.01

Results by sub-region (cont)

	Q10		Q25		Q50		Q75		Q90	
	Coef.	P> t	Coef.	P> t	Coef.	P> t	Coef.	P> t	Coef.	P> t
<i>Job type and tenure</i>										
Job is full time	0.18	0.00	0.18	0.00	0.17	0.00	0.15	0.00	0.12	0.01
Up to a year in job	-0.07	0.01	-0.06	0.00	-0.06	0.00	-0.06	0.00	-0.05	0.01
1-5 years in job	0.07	0.00	0.08	0.00	0.08	0.00	0.07	0.00	0.06	0.01
5-10 years in job	0.17	0.01	0.19	0.00	0.20	0.00	0.19	0.00	0.15	0.01
Over 10 years in job	0.04	0.07	0.06	0.03	0.06	0.04	0.09	0.04	0.02	0.05
Job is permanent	0.13	0.01	0.09	0.01	0.04	0.01	-0.01	0.01	-0.06	0.02
<i>Age and sex</i>										
Age	0.05	0.00	0.05	0.00	0.05	0.00	0.06	0.00	0.07	0.00
Age squared	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Male	0.11	0.01	0.13	0.00	0.16	0.00	0.19	0.00	0.22	0.01
<i>Qualifications</i>										
No qualifications	-0.19	0.01	-0.22	0.01	-0.29	0.01	-0.34	0.01	-0.37	0.01
Low qualifications	-0.09	0.00	-0.11	0.00	-0.13	0.00	-0.15	0.00	-0.15	0.01
High qualifications	0.20	0.01	0.29	0.00	0.38	0.00	0.41	0.00	0.42	0.01
<i>Other controls</i>										
Region dummies	Yes		Yes		Yes		Yes		Yes	
Quarter dummies	Yes		Yes		Yes		Yes		Yes	
Missing variable dummies	Yes		Yes		Yes		Yes		Yes	

Differentials by sub-region

Estimates of public sector hourly wage differentials by sub-region, gender and quantile of estimation (% difference in hourly pay in public sector)

Region	Male					Female				
	Quantile					Quantile				
	10	25	50	75	90	10	25	50	75	90
Tyne and Wear	10.93	7.87	4.93	0.69	-2.73	10.68	10.37	10.33	5.89	0.65
Rest of North East	13.51	8.75	6.78	1.44	-1.28	13.25	11.25	12.18	6.64	2.10
Greater Manchester	14.56	9.36	4.96	1.11	-0.36	14.31	11.85	10.36	6.31	3.02
Merseyside	14.86	10.65	4.50	3.05	-2.17	14.61	13.15	9.90	8.25	1.20
Rest of North West	13.90	9.85	4.57	-1.14	-7.06	13.65	12.35	9.97	4.06	-3.68
South Yorkshire	17.23	12.24	6.30	5.11	3.32	16.98	14.74	11.70	10.31	6.69
West Yorkshire	14.78	8.44	6.04	3.18	-6.59	14.53	10.93	11.44	8.38	-3.22
Rest of Yorkshire & Humberside	21.74	11.27	8.44	5.00	-0.06	21.49	13.76	13.84	10.20	3.32
East Midlands	14.62	10.09	5.29	-1.72	-4.60	14.37	12.59	10.69	3.48	-1.22
West Midlands Metropolitan County	12.46	8.52	5.81	1.67	-3.44	12.21	11.02	11.21	6.87	-0.07
Rest of West Midlands	10.13	7.90	6.45	0.10	2.93	9.87	10.40	11.85	5.31	6.30
East of England	12.00	7.19	-0.55	-6.48	-13.96	11.75	9.69	4.85	-1.28	-10.59
Inner London	19.05	7.02	-3.65	-19.50	-30.82	18.80	9.52	1.75	-14.30	-27.45
Outer London	22.35	15.70	1.29	-6.80	-14.60	22.10	18.20	6.69	-1.60	-11.22
South East	12.91	3.89	-5.66	-13.79	-22.68	12.65	6.38	-0.26	-8.59	-19.30
South West	13.98	8.37	3.88	-3.29	-10.28	13.73	10.87	9.28	1.91	-6.90
Wales	17.00	12.99	8.89	6.55	4.08	16.75	15.49	14.29	11.75	7.45
Strathclyde	19.08	14.94	8.67	2.71	-2.50	18.83	17.44	14.07	7.91	0.88
Rest of Scotland	18.12	12.35	5.11	-0.42	-6.76	17.87	14.82	10.51	4.78	-3.38
Northern Ireland	17.18	12.70	6.93	5.96	9.46	16.93	15.20	12.33	11.16	12.83

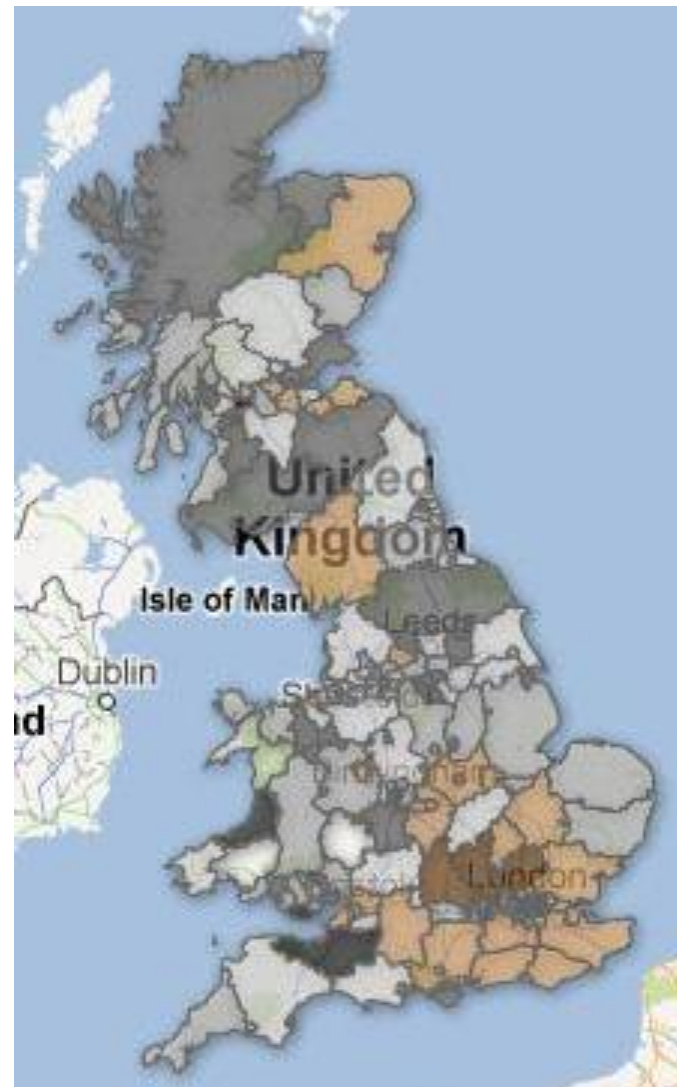
Average differentials by LA / UA

Dark Orange – a penalty of over 20%

White – equivalence

Dark grey - premium of over 20%

For example, while the overall London differential for the average male stands at 0.39% penalty (in effect, zero) the equivalent figure for Croydon is a 12.39% premium, whereas in Islington it is a 20.69% penalty



What does this mean in practice?

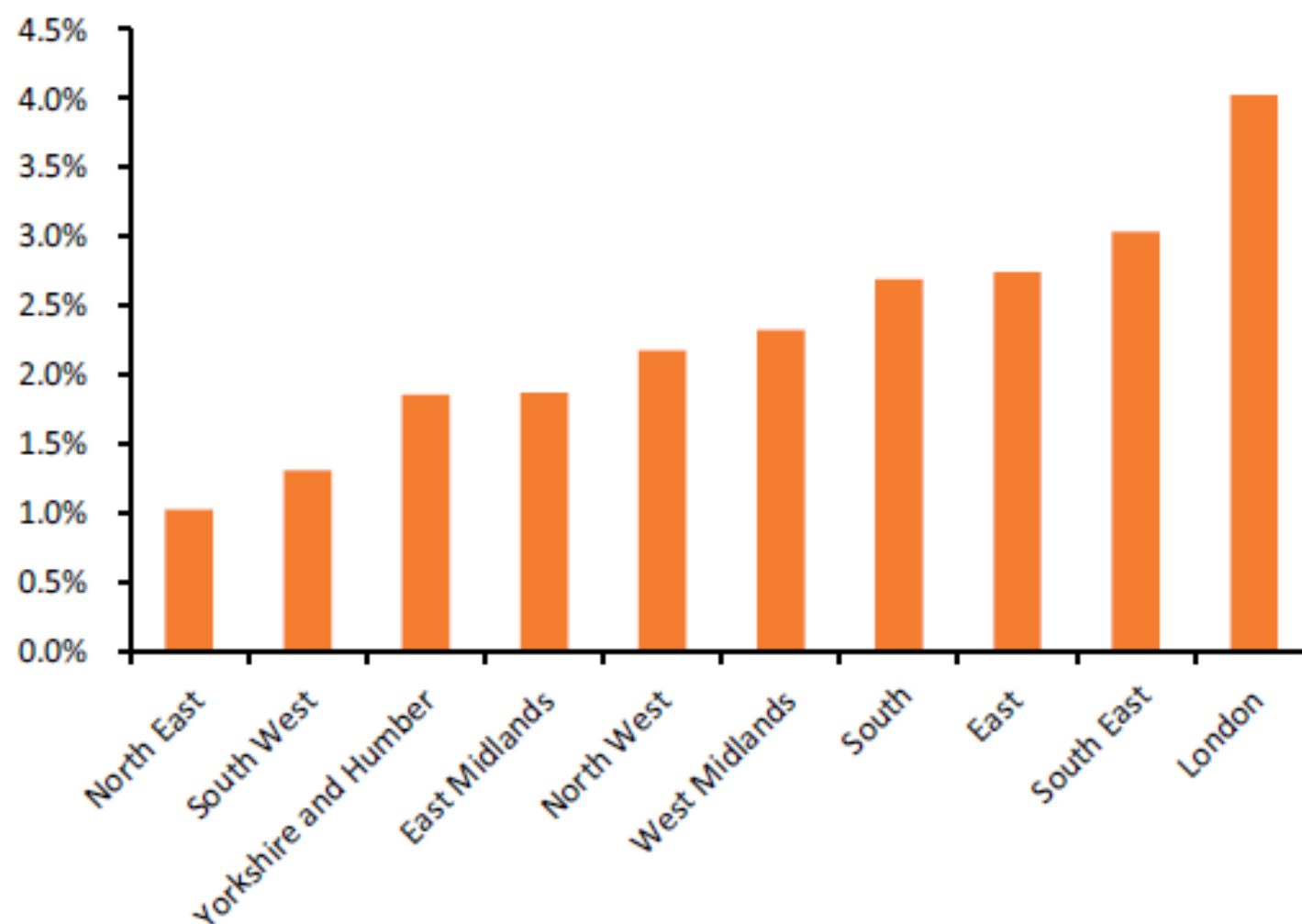
Quality of public services

We have seen that some parts of public sector are significantly over paid. Some parts are significantly under paid.

What impact does this have on public services?

Most obvious place to look is vacancy rates.

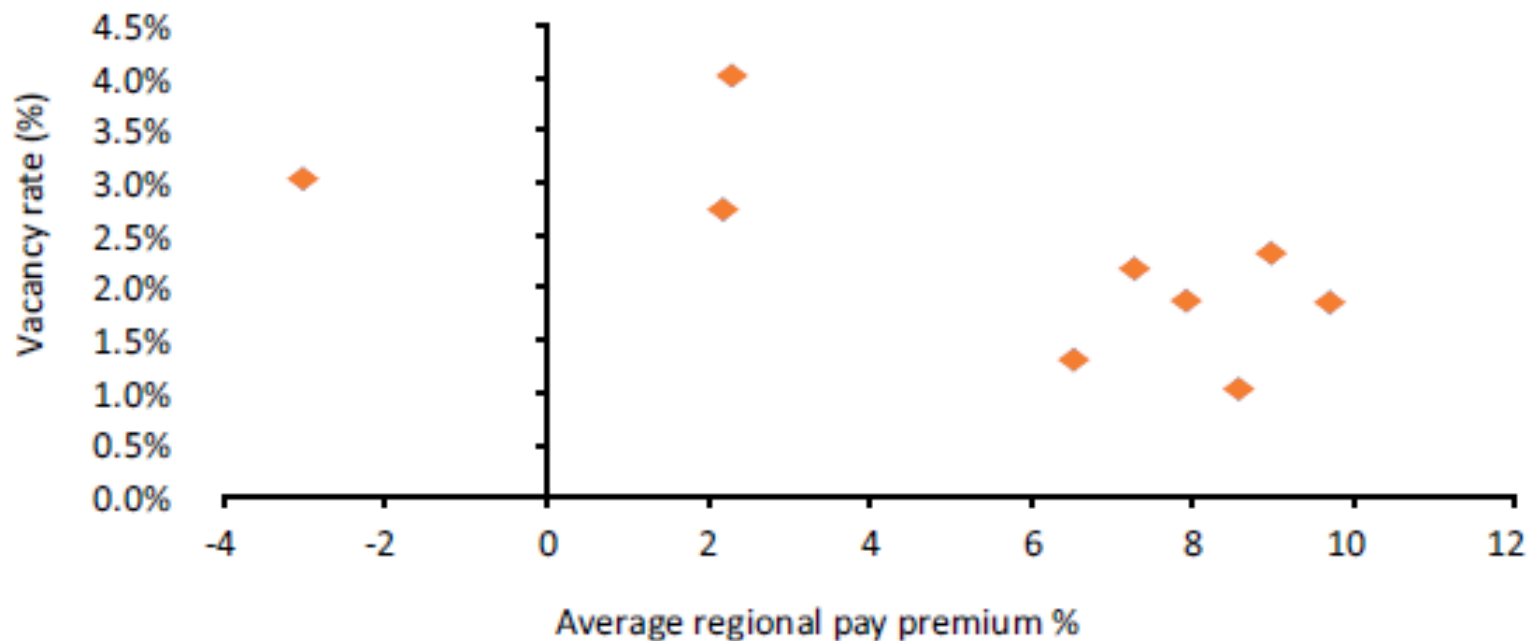
Figure 17: Qualified nurses vacancies rates in the NHS by region, 2010



Source: The NHS Information Centre Vacancy Survey, NHS information centre, 2010.

Can then compare vacancy rates with pay differentials: where under paid – vacancies are higher

Figure 18: Nurses vacancy rates versus public sector pay premium



Source: The NHS Information Centre Vacancy Survey, NHS information centre, 2009; and authors own calculations as per chapter 2.

Table 6: Evidence of negative impact of national pay structures on public service delivery

Sector	Author, title	Description
Health	Burgess S, Gossage D, Propper C, 'Explaining Differences in Hospital Performance: Does the answer lie in the labour market?', 2003.	Found death rates in hospitals are higher where public sector pay is proportionately lower than the private sector in the region.
Nurses	Elliot R, McDonald D, MacIver R, 'Local Government Finance: Review of the Area Cost Adjustment', Waverley Press, 1996.	Includes analysis of difficulties of attracting and retaining nurses where pay does not reflect non-labour costs and labour market demand.
Teachers	Wolf, A, 'More than we bargained for', Centre Forum 2010.	Shows significant recruitment problems for teachers in deprived neighbourhoods.
Educational outcomes	Propper C, Britton B, 'Does Wage Regulation Harm Kids? Evidence from English Schools', Centre for Market and Public Organisation, Bristol University 2012	Found that, controlling for a wide range of factors, a 10 per cent increase in an area's average wages leads to a one exam grade loss at GCSE level.

Source: as above.

Productivity

More broadly, productivity in public sector has been stagnant for at least a decade.

Lack of effective remuneration strategy and performance related pay are key factors.

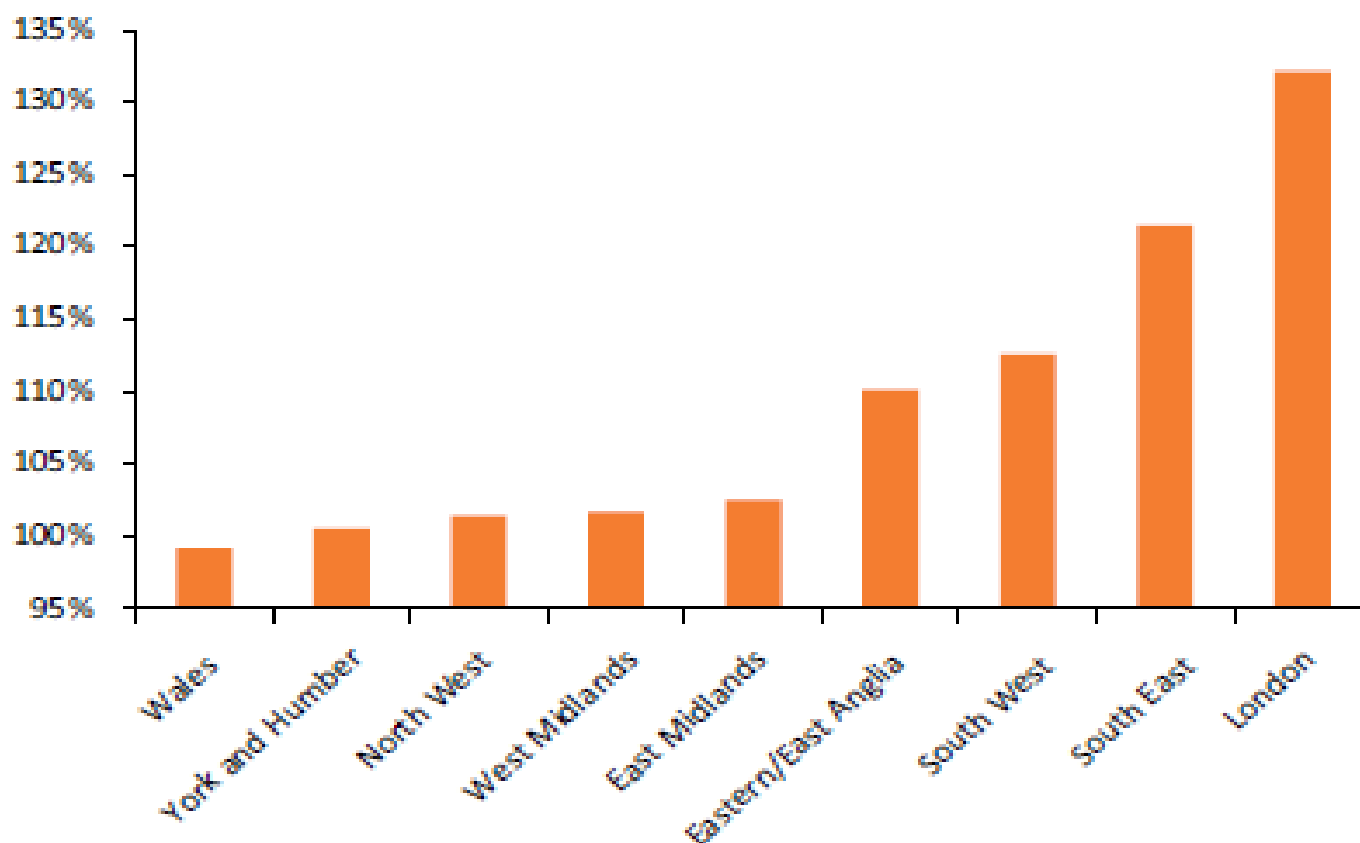
More recent examples and PM's response

Prime Minister – responding to Francis report
Mid Staffs Hospital.

‘Nurses should be hired and promoted on the basis of having compassion as a vocation... another issue is whether pay should be linked to quality of care rather than just time served at a hospital. I favour this approach.’

Fairness for public sector workers?

Figure 16: Example: Cost of living in the North East versus other regions of the UK



National pay bargaining: cost or saving?

Aside from quality of public services, there is also a question of the cost of public services. This is particularly true in face of significant financial challenge of coming decades.

Question: what would costs of public sector be if we paid like the private sector (within 1%)?

Costs of pay differentials broken down by region and percent of workforce paid more / less than private sector counterparts			
	Net costs (£,000's)	Costs of overpayments (£,000's)	Costs of underpayments (£,000's)
Tyne and Wear	42,692	105,435	-62,765
Rest of North East	183,092	183,100	0
Greater Manchester	241,516	267,421	-25,905
Merseyside	150,640	167,032	-16,392
Rest of North West	49,893	189,377	-139,484
South Yorkshire	264,761	264,761	0
West Yorkshire	82,148	170,784	-88,636
Rest of Yorkshire & Humberside	261,995	261,995	0
East Midlands	130,426	251,224	-120,798
West Midlands Metropolitan County	115,263	157,740	-42,477
Rest of West Midlands	289,402	289,402	0
East of England	-703,935	91,802	-795,737
Inner London	-1,880,785	19,157	-1,899,942
Outer London	-1,305,964	77,464	-1,383,428
South East	-2,830,647	47,927	-2,878,574
South West	-44,280	289,755	-334,035
Wales	699,102	699,102	0
Strathclyde	179,937	215,014	-35,078
Rest of Scotland	31,992	237,291	-205,299
Northern Ireland	253,551	253,551	0
UK	-3,789,201	4,239,334	-8,028,550

Greater London?

Equalising pay to within 1% of private sector would cost a large amount as we underpay top earners more than we overpay workers at the bottom.

Impact in London alone would be well over £3 billion.

Would also result in a large fiscal transfer from lower-cost regions towards London and SE.

BUT, remuneration clearly not just about pay – so what about non-pay parts of the package?

Non-pay elements of compensation

Table 6: Stylised differences in reward package between public and private sector

	Low pay public	High pay public
Holidays (including privilege days)	+	+
Pensions	+	+
Bonus payments	-	-
Flexible working	+	+
Intrinsic satisfaction/public service motives	+	+
Other fringe benefits	+	-

Where + means public sector package more generous)

Accounting for pensions

Disney, Emmerson and Tetlow (2009) show Defined Benefit (DB) schemes 6.6% more generous in public sector.

Even this will be an understatement as DB schemes now very unlikely in the private sector.

Accounting for pensions

Around half of those judged to be underpaid based on an analysis of hourly pay alone are, in fact, fully compensated by more generous pension arrangements.

Just accounting for this turns cost into £6.3bn saving.

Costs for London nearly half of that without pension adjustment.

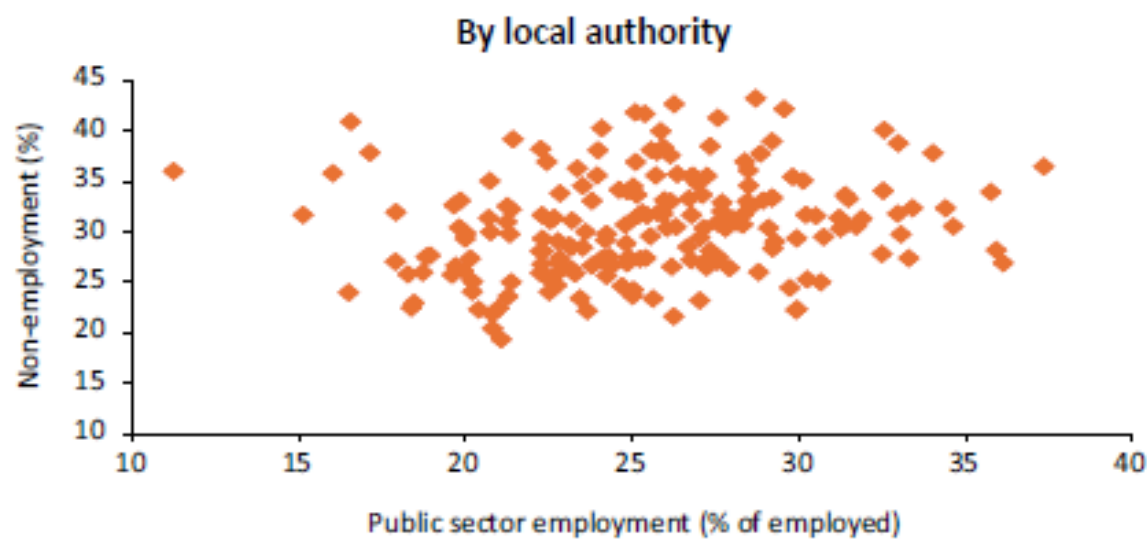
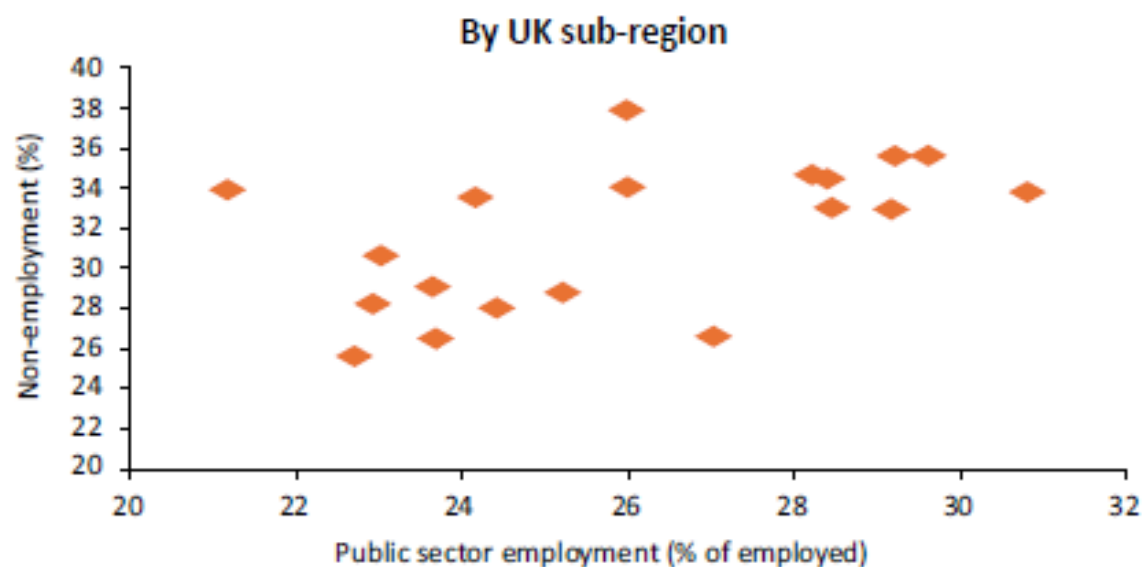
	Overall costs of pay premia/ penalties	Costs of over-payments	Costs of under-payments
	Yearly £ ,000's	Yearly £ ,000's	Yearly £ ,000's
Tyne and Wear	251,612	253,237	-1,625
Rest of North East	433,439	433,439	-
Greater Manchester	681,464	681,464	-
Merseyside	374,687	374,687	-
Rest of North West	531,713	532,906	-1,193
South Yorkshire	486,444	486,444	-
West Yorkshire	419,533	421,106	-1,573
Rest of Yorkshire and Humberside	561,106	561,106	-
East Midlands	771,564	775,004	-3,440
West Midlands Metropolitan County	458,973	459,396	-423
Rest of West Midlands	679,518	679,518	-
East of England	206,765	436,496	-229,730
Inner London	-1,341,798	50,532	-1,392,330
Outer London	-446,890	254,440	-701,330
South East	-1,404,128	296,582	-1,700,710
South West	769,043	820,494	-51,451
Wales	1,254,449	1,254,449	-
Strathclyde	587,398	587,398	-
Rest of Scotland	612,781	635,732	-22,951
Northern Ireland	420,806	420,806	-
UK	6,308,480	10,415,237	-4,106,757

National pay, local growth?

Pay differentials represent a significant fiscal transfer, South to North. Can this be justified on basis of regional policy?

- 1) Intuitive crowding-out argument suggests not. Private sector will suffer if cant afford pay demands. Evidence here mixed.
- 2) More conclusive arguments around size of public sector and impact on local economies (Faggio & Overman, 2012).
- 3) What about London? Capital has worse public services – impact on international standing?

Figure 6: Public sector employment and rates of non-employment by area



Do we need change?

Yes. National pay bargaining in the public sector:

- Is unfair for public sector workers
- Does not incentivise performance
- Makes public services worse
- Is not cost-effective
- Could damage local growth

Reform of public sector pay setting

Conclusions for London

Wage differentials between private sector and public sector vary substantially:

- Both within and across regions; and
- Across the wage distribution

Looking at these variations is important for policy conclusions: not all those in London are underpaid – so increasing London weighting could have unintended effects.

Public services in capital likely to be quite severely impacted. What impact might this be having both domestically and internationally?

Costs of tackling this issue in London / SE are high unless combined with deeper reforms of public sector pay / productivity.

Moving to regional or zonal pay?

This is where much of discussion has focussed – but is a very bad idea!

- Centrally set and negotiated settlements would not provide enough granularity (differentials vary within areas and across income distribution)
- Boundary issues would be horrible
- Based on place of work or residence?
- Does not tackle issue of performance

What about individual pay?

Costs of individual contracts for all public sector workers prohibitive.

Economies of scale from collective / central negotiation

Equal pay legislation could be an issue.

Costs of equalisation high!

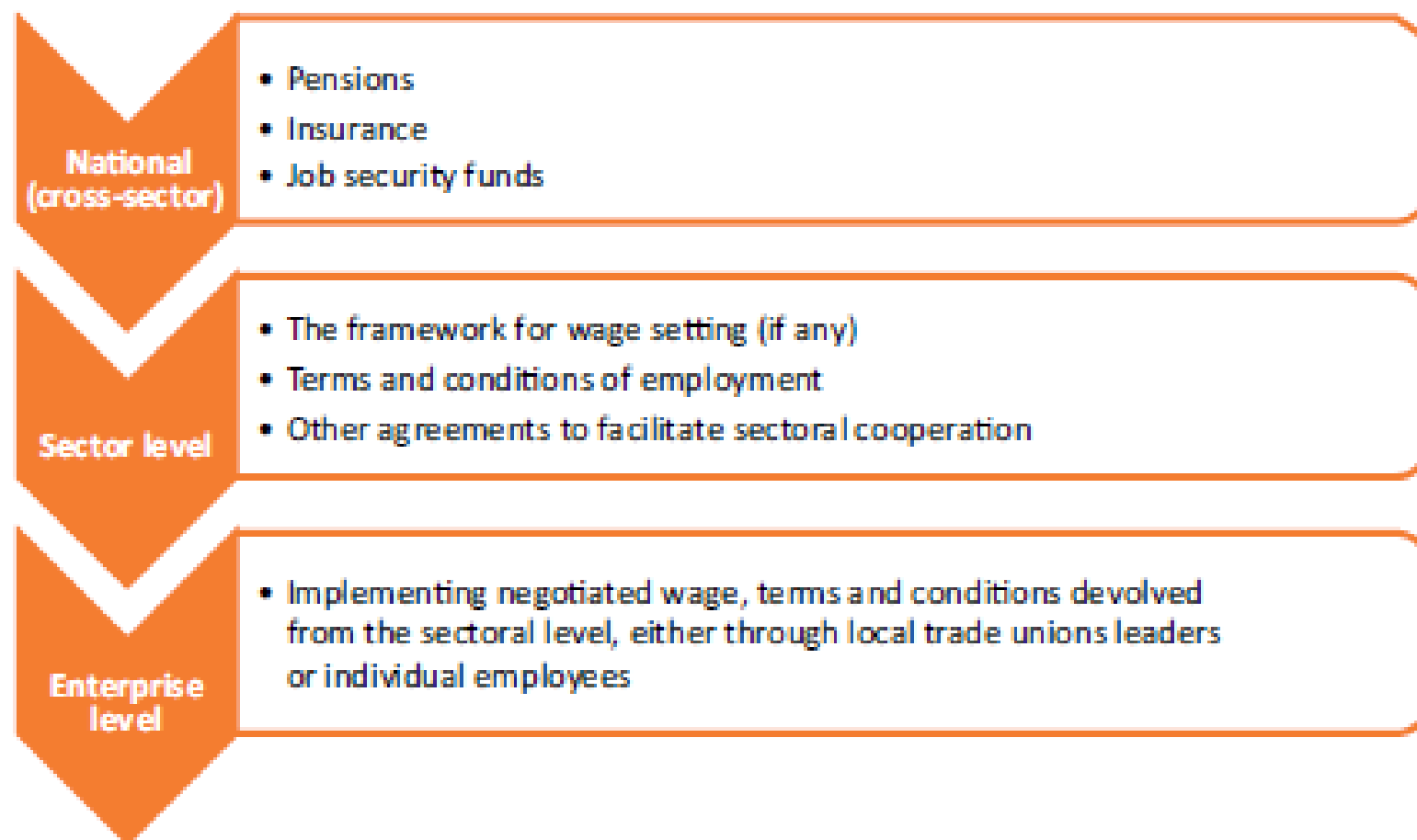
So what needs to be done?

Key lessons from Private sector in the UK and from public sector in other countries.

Public sector needs a system that:

- Provides greater local flexibility
- Recognises performance of individuals and organisations
- Accepts that highly paid public servants are not necessarily a problem
- Does not over-burden managers

Figure 20: Tiers of collective bargaining agreement in Sweden



Source: 'Business population estimates for the UK and regions 2011', Department for Business Innovation & Skills 2011.

Example of the UK Private Sector

Some use of national scales, but:

- Local flexibility to reflect recruitment issues
- Local flexibility to reflect performance
- Strong focus on performance management and appraisal / evaluation
- Greater pay progression (not based on tenure)

What this would mean in the UK public sector

Some elements of remuneration remain centrally bargained (e.g. Pensions, terms and conditions)

Local choice over pay-setting framework – some would choose local, some at a higher level

Requirement to use performance related pay – this would mean that pay decisions within framework would be local.

In practice:

Current automatic pay-scale uplifts should be removed.

Alongside announced 1% pay scale uplift, adjust local pay envelope in line with local costs (and current pay differentials).

- Where costs are high – paybill rises and should be ring-fenced for performance pay.
- Where costs are low – 1% pay bill rise given – half for PrP remainder ring-fenced for local area growth initiatives.

But....how do we assess low / high cost areas?

Stick to what we know....

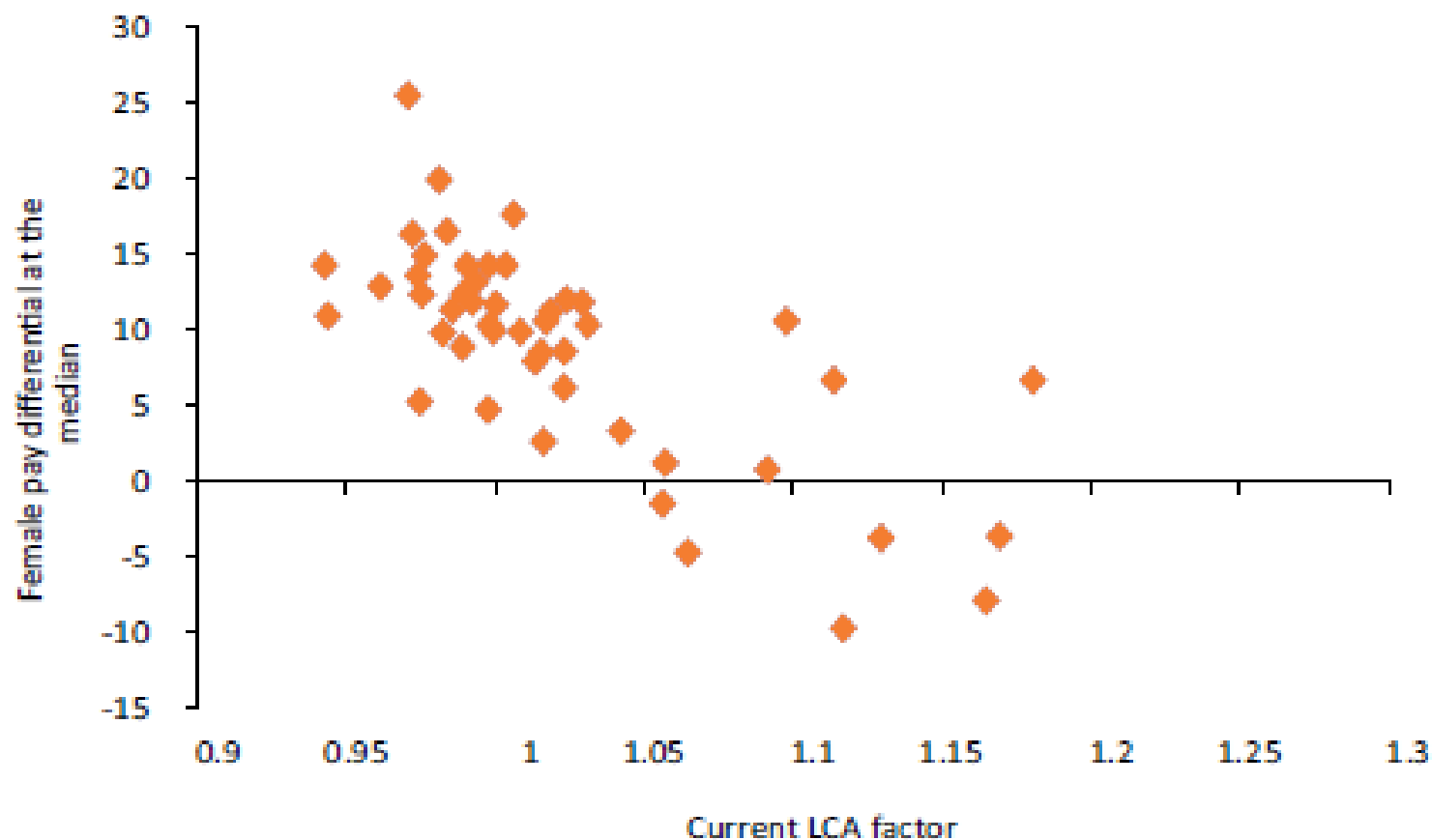
Luckily – it turns out that we knew this all along, but just aren't using it.

Local Area Cost Adjustments are factored into Local Authority budgets. Where labour costs are high – LCA factor is above 1 and budget is increased accordingly.

BUT until now, they have been unable to reflect in pay.

LCAs also match well with estimated pay differentials (next slide).

Figure 24: Correlation between LCA factors and pay differentials (average female) by area



Using LCA factors

So in practice:

- Where LCA factors are above 1: use 1% pay uplift as PrP “pot”
- Where LCA factors are below 1: use 1% pay uplift split between PrP and local growth

Over time – this will mean that pay pots will begin to more closely match local labour market costs.

London issue might take time to resolve....

Everything to gain: Local pay, local growth (and better public services)

1. Improve the quality of vital public sector services by:
 - more closely aligning pay with performance;
 - ensuring that pay can be flexed where skills shortages or high turnover affect quality; and
 - improving incentives for outstanding professionals to reform the public sector by more closely aligning performance with reward.
2. Achieve greater regional growth and job creation. By redirecting redistributed resources towards growth enhancing regional projects with higher fiscal multipliers, we can create jobs in areas that need them most.
3. Provide fairness for workers across the public sector and for taxpayers by ensuring that pay in the public sector reflects market conditions and contribution to public services.

Questions / thoughts?

ANNEX

Previous evidence (1)

Emmerson and Jin (2012) use LFS to find the public premium to be 5.5% for males and 11.3% for females.

UK's Office for National Statistics employ similar techniques and finds an average premium of 7.8% (ONS, 2010)

Oakley (2011) finds an average (median) premium of 8.8%

(Lucifora & Meurs, 2004, p.9.) summarise the existing UK literature to find that *'...the average differential controlling for standard human capital variables is close to 5%, although it is much higher for females (15-18%) as compared to men (2-5%)*.

Previous evidence (2)

Variation across wage distribution:

Disney and Gosling (1998), Emmerson & Jin (2012) and Oakley (2011) all find that public sector pay premiums are at their highest at the bottom of the wage distribution.

Emmerson & Jin (2012) find that the average premium stands at around 16% for public sector workers at the 10th percentile of earnings, while it is negative for men (but not statistically significantly different from zero) at the 90th percentile of the distribution.

Empirical strategy – budgetary implications

Involves assessing the wage that a public sector worker would have received if they were instead in the private sector:

$$Y_{it}^* = Y_{it} - \left(\beta Public_{it} + \gamma Public_{it} \cdot Male_i + \sum_{n=1}^N \theta_n Public_{it} \cdot gor_{itn} \right) \cdot Y_{it}$$

Can then sum across individuals (grossed up with population weights) to assess potential costs or savings from equalising pay across public and private sectors

Data

The Annual Population Survey (APS):

- representative survey of individuals across the UK that has been running since 2004.
- Combines results from the Labour Force Survey with the LFS Boosts in order to allow the production of reliable estimates at the Unitary / Local Authority level,
- Each dataset contains around 340,000 individuals.
- We use pooled data covering the period from January 2010 to September 2011 to further boost sample size.
- Individuals are selected such that they only appear once in the final dataset, in order not to introduce bias.
- For budget impacts of equalisation - data used from only the most recently available APS, October 2010 – September 2011. This is to ease computation of the weighted costs.

Limitations / issues

Total compensation package:

- Pensions
- Holidays
- Flexible working
- Non-wage income (bonuses / perks)

Disney, Emmerson and Tetlow (2009) show DB schemes 6.6% more generous in private sector.

around half of those judged to be underpaid based on an analysis of hourly pay alone are, in fact, fully compensated by more generous pension arrangements. This means that just accounting for this turns cost into £6.3bn saving.

Further work needed on all of these things

Bibliography and further reading

- Bozio, A., and Disney, R., (2011), 'Public sector pay and pensions', in Brewer, M., Emmerson, C., and Miller, H., (eds), *The IFS Green Budget: February 2011* (<http://www.ifs.org.uk/budgets/gb2011/11chap7.pdf>).
- Card, D., (1996), 'The effect of Unions on the structure of wages: A longitudinal analysis'. *Econometrica*, Vol.64, No.4., pp.957-979.
- Dickens, R., and Manning, A., (2002), *The Impact of the National Minimum Wage on the Wage Distribution, Poverty and the Gender Pay Gap*.
<http://www.lowpay.gov.uk/lowpay/pdfs/amrd.pdf>
- Disney, R., (2007) 'Public-private sector wage differentials around the world: Methods and evidence',
<http://www.bristol.ac.uk/cmpo/events/2007/public/disney.pdf>
- Disney, R., Emmerson, C., & Tetlow, G., (2009). 'What is a public sector pension worth?' *The Economic Journal*, **119** (November), F517–F535.
- Disney, R., and Gosling, A., (1998), 'Does It Pay to Work in the Public Sector?'. *Fiscal Studies* (1998) vol. 19, no. 4, pp. 347–374.
- Emmerson, C., & Jin, W., (2012), 'Public sector pensions and pay', in Emmerson, C., Johnson, P., and Miller, H., (eds), *The IFS Green Budget: February 2012* (<http://www.ifs.org.uk/budgets/gb2012/12chap5.pdf>)
- HM Treasury, (2012). *Government Evidence to the Pay Review Bodies: Economics of Local Pay*. Available on <http://www.ome.uk.com/>
- Holmes, E., and Oakley, M., (2011), *Public and private sector terms, conditions and the issue of fairness*. Policy Exchange, London.
- IDS, (2011), *Public and private sector earnings: fact and fiction*. Income Data Services Pay Report, 1075, June 2011. <http://www.incomesdata.co.uk/areas-of-expertise/pay-reward/private-public-sector-earnings.pdf>
- Jakubson, G., (1991), 'Estimation and Testing of the Union Wage Effect Using Panel Data'. *Review of Economic Studies* 58 (5): 971-991.
- Koenker, R., & Hallock, K. F. (2001). Quantile regression. *Journal of Economic Perspectives*, 15 (4), 143-156.
- Lucifora, C., Meurs, D., (2004), The Public Sector Pay Gap in France, Great Britain and Italy, *IZA Discussion paper series*, No. 1041,
<http://www.econstor.eu/bitstream/10419/20276/1/dp1041.pdf>
- McInnes, R., (2012), 'ESA and incapacity benefits – constituency statistics for Great Britain'. *House of Commons Library Note: SN/SG/3301*.
- Mueller R. E. (1998), "Public-private sector wage differentials in Canada: Evidence from quantile regressions", *Economics Letters*, vol. 60(2), pp. 229-235
- Oakley, M., (2011) *Further analysis on the public sector pay premium*. Policy Exchange, London.
- ONS (2011), *UK Relative Regional Consumer Price levels for Goods and Services for 2010*. http://www.ons.gov.uk/ons/dcp19975_250082.xml .
- ONS (2012), *Regional Labour Market Statistical Bulletin, May 2012*. http://www.ons.gov.uk/ons/dcp171778_265035.pdf
- Propper, C., and Van Reenen, J., (2010), 'Can Pay Regulation Kill? Panel Data Evidence on the Effect of Labor Markets on Hospital Performance'. *Journal of Political Economy* Vol. 118, No. 2 (April 2010), pp. 222-273
- Rosen, S., (1986), 'The Theory of Equalizing Differences', in Ashenfelter, O., and Layard, R., (eds) (1986) *Handbook of Labor Economics*, volume 1. Elsevier.
- Stuttard, Nigel and James Jenkins (2001) "Measuring low pay using the New Earnings Survey and the LFS", *Labour Market Trends*, 109, 55-66.
- Willis R.J., (1986), 'Wage determinants: a survey and reinterpretation of human capital earnings functions' in Ashenfelter, O., and Layard, R., (eds) (1986) *Handbook of Labor Economics*, volume 1. Elsevier.
- Wolf, A. (2010) *More than we bargained for: the social and economic costs of national wage bargaining*. CentreForum, London.