Abstract

The sheer scale and speed of the shift of payment system from time-based salaries to performance-related pay, PRP, in the British public services provides a unique opportunity to test the effects of incentive pay schemes. This study is based on the first large scale survey designed to measure the effects of performance related pay on a) employee motivation and work behaviour across the British public services; and b) workplace performance. The latter uses an index of organisational performance based on line-manager judgements. While there is evidence of a clear incentive effect for those gaining above average PRP, it is likely that it is offset by a more widespread de-motivating effect arising from difficulties of measuring and evaluating performance fairly. These motivational outcomes are found to affect workplace performance. Organisational commitment appears to offset some of the negative effects of PRP. In contrast to the many studies of top executives, sales and sports personnel, our study examines PRP for large numbers of ordinary employees.

Keywords: performance-related-pay, incentives, performance measurement, organisational commitment, public sector.
JEL codes: J33, Compensation packages, Payment methods; J45 Public sector labour markets; M12, Personnel Management.

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Does Performance Pay De-Motivate, and Does It Matter?

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1. Introduction

The 'New Economics of Personnel' stresses the superiority of performance-related over time-based pay systems under circumstances in which employees can exercise a good deal of discretion in their jobs and their effort is hard to monitor (Fernie and Metcalf, 1999). It places a strong emphasis on financial rewards as incentives, and seeks to show how their design should be adapted to tackle different types of monitoring problems. It is a powerful theory with important predictions because these conditions apply in a very large number of workplaces. However, as Prendergast (1999) observes in his JEL review article, empirical testing so far has concentrated on chief executives, sales and sports personnel, and there is a dearth of studies on the effects of incentive pay on ordinary employees. This article reports a large-scale study on the workings of performance pay for ordinary employees. In doing so, it finds that the effect of marginal financial incentives is small compared with that of goal-setting and appraisal. In the conclusion, we propose an explanation of why PRP is so difficult to administer successfully for ordinary employees.

The large-scale switch from time- to performance-based pay in the British public services over the past decade offers an excellent opportunity to test the relevance of some of these theories for ordinary employees, and to examine the role of financial incentives compared with other ways of steering employee motivation. This article analyses results from the first large-scale study of performance pay in the British public services to explore its effects on motivation and work relations. It seeks first to establish how far employees judge the new incentives to have motivated them to perform better, what they believe have been their effects on workplace cooperation, and how far alternative motivational forces, such as commitment and a belief in work standards are active in sustaining performance levels. Secondly, it compares these motivational measures with line managers' judgements of the effects on workplace performance. We conclude that the introduction of performance pay has been associated with increased levels of effort as judged both by ordinary employees and the line managers who appraise their performance. However, the financial incentive has played a rather small part compared with the much more important role, *for better and for worse*, of goal-setting and appraisal. Improved goal-setting may raise performance in two ways, and herein lies a fundamental ambiguity: in part it can clarify work goals, and in part, it enables management to negotiate higher levels of performance which may not always be voluntarily given. Our results lead us to conclude that, for ordinary employees, more systematic attention

should be given to the way employee goals are set, and the interplay of interests involved, and how they are handled.

For a great many jobs in the public services, the New Economics of Personnel (NEP) would predict that performance pay would give superior results. Teachers, health service professionals, job placement advisers and many tax officials have considerable control over how they work, and in many cases, it is very hard for management to monitor the degree of effort and care they put into their jobs. In this regard, public sector employees differ little from their private sector counterparts. They also resemble private sector employees in that assessment of their performance relies heavily on subjective appraisal by line managers. From the point of view of incentive theory, conditions for public sector employees have become more like those in the private sector in another respect. The break up of large bureaucracies into specialist agencies responsible for the delivery of specific services, each with its own set of performance targets has reduced the problems posed by conflicting levels of political and management leadership ('multiple principals', Tirole, 1994). Finally, as Bewley's (1999) recent study shows, private employers also feel the need to take account of employees' sentiments of fairness, commitment and risk aversion when adjusting their pay-maintaining employee, 'morale' being one of their key concerns.

Performance related pay (PRP) has been at the forefront of the reform of pay incentives for public servants in the UK since the late 1980s. By the late 1990s, it had replaced pure time-based pay with annual increases based on seniority for most civil servants, and for many in local government (Heery, 1998) and the health service (Bach and Winchester, 1999). In schools, head teachers also had a form of PRP, and from 2000-01, classroom teachers also have their own system. The introduction of a new pay system on this scale offers an excellent test of some of the NEP theories of incentives. Its sheer scale gives an opportunity to assess the effects of performance pay across a wide variety of work environments and occupations. The drive for PRP from central government means that it has been implemented both where local management might have adopted it anyway, such as in the NHS hospital trusts in our sample, and where agency management might, if free, have preferred a different kind of scheme. An example of the latter is the Employment Service whose moves to develop team-working conflicted with individual performance pay. Our study therefore avoids some of the organisational self-selection problems highlighted by Prendergast (1999).

The shift to performance pay has also brought an end to seniority-based increments. In fact, these were never intended to provide automatic progression up to the top of the pay scale for a particular grade, but as the Megaw inquiry (1982) observed, procedures for withholding increments for poor performance were rarely if ever invoked. In effect, public servants were paid on time rates, independently of their short-term performance. This is reinforced by the weakness of promotion as an incentive for a great many non-managerial public servants. The National Audit Office highlighted the slow rates of promotion for many in the civil service, for example, 20 years for a newly promoted SEO to reach the next grade up of Principal (NAO, 1989). Another trend shared with private firms, the 'de-layering' of recent years will have restricted promotion still further. This is also reflected in employee expectations. In the evidence to the Sheehy enquiry on police pay, for example, it was found that over 40% of police officers did not expect to be promoted, despite the rank structure and a strong internal labour market (Touche Ross, 1993).

Performance pay in the British public services is mostly consolidated into basic salary so that the accumulation of above average awards can lead to quite big and lasting benefits for individual employees. Most commonly, line managers award performance pay on the basis of individual performance appraisal against pre-agreed objectives. Given the importance assumed by qualitative aspects of public service performance, appraisal by line managers has been the preferred route, as predicted by the NEP. Nevertheless, line managers are given guidelines about relevant criteria, and about the need to be concrete about performance objectives, not least because the schemes must be defensible if challenged as discriminatory. The organisations covered in this study follow the same broad principles as those elsewhere in the British public services, with one exception. One of the trust hospitals, has a trust-wide performance bonus payable to all satisfactory performers if the trust achieves its targets. Since the first performance pay schemes in the Inland Revenue in the late 1980s (see Marsden and Richardson, 1994), appraisal has undergone a sea change. It has moved away from evaluation against a standard set of criteria for all employees, and towards setting individual objectives in line with those of the organisation as a whole. In many respects, all these schemes have followed the cannons of personnel management 'best practice' at the time as systematised by bodies such as the Chartered Institute of Personnel and Development, ACAS (1990), and leading private sector consultants such as Armstrong and Murlis (1994).

Our study is the first major survey of PRP for individual employees across a variety of public service organisations in the UK. The sample includes about 5,000 employees in two civil service

departments (the Inland Revenue and the Employment Service); two National Health Service trust hospitals; and primary and secondary school head teachers, surveyed between August 1996 and March 1997. It covers therefore both a variety of occupations and two different types of organisation: 'bureaucratic' and 'professional' bureaucracies.

2. Principal-Agent Moral Hazard Analysis of Performance Pay

The theoretical rationale for performance related pay has been most clearly stated in the 'principal-agent moral hazard' model. The idea can be explained very simply in terms of Figure 1. For simplicity, assume that employees have discretion over the level of effort they provide, and that they can choose between providing 'low effort' (e_1) and 'high effort' (e_2). Suppose too that they wish to minimise the effort they exert for a given reward, and that the employer cannot observe effort directly.

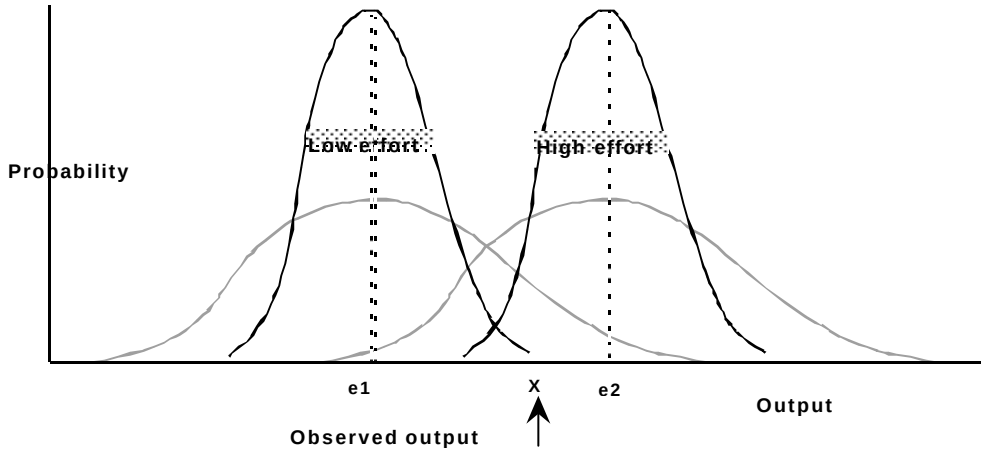
If the employer offers a fixed wage, then employees will supply 'low effort'. The employer could respond by reducing the wage until it matches the value of the low effort level, but this may not always be desirable for either party. One solution is to link pay to observed output or performance, with a low wage (w_1) for low-effort-output (e_1), and a high wage (w_2) for high-effort-output (e_2). This allows employees to choose, and the employer can offer a schedule of wages designed to encourage e_2.

If performance is easily measured and strongly correlated with employee effort this is a fairly simple matter. But in practice often neither relationship is straightforward. This is shown by the dispersion of performance levels associated respectively with the 'low' and 'high effort' levels. The two black (narrow) distribution curves represent the dispersion of output levels associated with each level of effort. As is well known, one might work hard and achieve low output because of lack of suitable training, poor management coordination, or other factors outside one's control. Equally, one may be lazy but lucky. With the two black distribution curves, the overlap is small so it is fairly easy for management to discriminate between employees providing the low or the high levels of effort. However, the curves could overlap a great deal more, as do the grey ones, and then it is much harder to determine whether a given level of output, say 'X', corresponds to low or high

effort. In this case, there is a much greater chance that employees who work hard will not be rewarded, and vice versa.

The solution, which has received more attention in the NEP literature, has been to use more highly geared incentives, by offering a performance bonus that is a larger percentage of basic salary (eg. Lazear, 1999, Ch. 3). In effect, the 'prize' is made larger to compensate for the greater probability of error. An alternative solution, more common in the HRM literature, is to stress the need for improved appraisal systems (*e.g.* by developing procedural justice, see Cropanzano and Fulger, 1991). Good appraisal can help by agreeing objectives and obtaining better measurement of outcomes, particularly where it is hard to obtain valid objective measures. In the public services, there are severe constraints on the use of highly geared incentives for large numbers of staff for budgetary and other reasons, which places a greater burden on the fairness of appraisals.

Figure 1. Distribution of Performance or Output for Two Given Levels of 'Effort'



Difficulty of measuring performance raises a second problem: whether management, which controls performance evaluation, can be trusted to act fairly. Given the need for a mix of quantitative and qualitative work objectives, there is little alternative to subjective appraisal if a bias towards quantitative outcomes is to be avoided (Holmstrom and Milgrom, 1991). However, it is very difficult for employees to verify the accuracy and fairness of such appraisals at the individual level. Whatever the actual honesty with which appraisals are conducted, our survey illustrates the depth of employee suspicion regarding 'moral hazard' by their employers. Across the organisations we surveyed, it was widely thought that performance pay was a device to cut the pay bill. Over 60%

thought management applied a quota to good appraisals; around 55% of employees thought they would not be awarded performance pay even if their work was good enough; and over 40% thought line managers used performance pay to reward their favourites[1]. On the latter two questions, similar results have been found in the US federal service (Milkovitch and Wigdor, 1991).

Finally, Figure 1 brings out the importance of the initial assumption that employees are 'effort minimisers' and will opt for 'low effort' if they think it will pass undetected. That raises the question as to what sustained effort among the majority of public servants before PRP was introduced. Promotion may have been part of the answer, but, as mentioned earlier, for most employees such opportunities are limited. In some kinds of clerical work, clear job descriptions and well-paced work flows make sub-standard performance easily detectable by line managers. In contrast, where employees have a lot of discretion, as is the case for many public servants, a mixture of organisational commitment, and a belief in professional work values, may well counteract such tendencies. Much of the writing on commitment (eg. Meyer and Allen's review of 1997) stresses that shared goals between an organisation's management and its employees may encourage the latter to use their discretion positively as part of a diffuse social exchange with the organisation. Such employees would be less likely to take advantage of difficulties in monitoring their effort to provide as little as they can get away with. There is however an alternative scenario: that committed employees may oppose the increased management control that accompanies PRP because they see it as implying a lesser degree of trust in their willingness to work for their organisation.

3. Measuring the Effects of PRP on Work Behaviour and Attitudes In Public Services

3.1 Measures of motivation and performance

We consider four main kinds of impact of performance pay: on motivation, on work relations, on communicating management objectives, and on workplace performance. The first three correspond to different aspects of the motivational outcomes sought by the use of incentive pay: giving

[1]. The favouritism question was not asked of head teachers.

employees greater incentive to provide higher levels of effort; encouraging more flexible working and team work; and redirecting employees' effort towards new goals that management wants them to achieve. The fourth looks at organisational performance outcomes as observed by line managers.

a) ***Motivation***

We interpret motivation as the *willingness to undertake certain kinds of action*, but we also ask about public servants' agreement with the principle of performance pay, and whether they believe it rewards good work. Particularly important in the principal-agent analysis, but also in the views of management expressed to us in our interviews, was the willingness of staff to use their work discretion to the benefit of the organisation. We focused on whether staff felt PRP gave them an incentive to work beyond the requirements of their jobs, and to show more initiative in their work. Agreement with the principle implies accepting its legitimacy as an *ex ante* incentive, in-keeping with the principal-agent analysis. Agreeing that it rewards good work captures a different nuance: that one appreciates the *ex post* recognition by one's boss, and this might appeal more to those attracted to the intrinsic satisfactions of their work which might be especially important in health and education services (Deci and Ryan, 1985).

b) ***Work relations***

In much of the public service, a high degree of cooperation between employees is needed for efficient working. Indeed, management has sought to encourage greater team working. We therefore asked employees whether, in their experience, performance pay caused jealousies among staff; whether it undermined team working; whether it improved cooperation with management; and whether management operated a quota on good assessments. The first two would be outcomes of PRP that inhibit more flexible work organisation. Likewise, willingness to cooperate with management becomes more important the greater the amount of discretion employees have in their work. Finally, whether management operate a 'quota' on performance pay and performance ratings can be interpreted as an indicator of trust in higher management. In fact, in the Inland Revenue, higher management instructed line managers not to apply a quota, and the Employment Service scheme, like that of the trust-wide bonus hospital, had no place for a quota of any kind. Only the hospital using individual-PRP applied a standardised distribution. We also asked whether people thought their managers would give them a good appraisal if they performed well.

c) ***Communicating objectives***

Over the past decade, there has been considerable devolution of public management: towards specialist agencies, hospital trusts and local management of schools. One reason has been to enable management to formulate objectives closer to the point at which public services are delivered than previously. In all the organisations we studied, there was strong emphasis on formulating clear organisational objectives and communicating these to individual employees, together with a view that performance appraisal was a natural focus for this. The more discretion employees have, the more important it is that they are aware of organisational objectives. We therefore asked whether employees believed that PRP had raised their awareness of their organisation's objectives.

d) ***Line manager judgements of performance in their workplace***

Line managers, who set individual employees' work objectives and appraise their performance, occupy a unique position to observe the effects of PRP on performance. We were able to link these with the results for individual employees by taking advantage of the division of the two civil service departments into a dozen or so executive offices each. The same was done for each hospital. This supplemented the limited aggregate evidence we had from senior management and line managers that effort levels had increased, by enabling us to use the variation in performance outcomes between offices, as reported by line managers, to explore the effects of positive incentive and negative de-motivating aspects of PRP.

3.2 Independent variables

Among our independent variables we consider four main types:

- Financial incentive
- Goal-setting
- Quality of appraisal
- Measurability of performance
- Motivation patterns and commitment

We also include a number of control variables relating to the organisation, the employee's ISCO one-digit occupation, length of service and gender. Among these, the Inland Revenue in

1996 and Managers are taken as the two benchmarks for the organisational and occupational dummies.

For the financial incentive, we asked how much performance pay individuals had received or what had been their latest appraisal score when this determined their pay award. Under the civil service and hospital schemes, PRP had replaced seniority increments, and so practically everyone now gets performance pay. We experimented with two measures: the level of performance award received, and whether employees got above average awards. Only the latter had any effect so that was the one we included. We also experimented with a question on people's subjective rating of their own performance, on the ground that those who believe their performance is better than their colleagues' would be more likely to find performance pay motivating.[2]

Given the need to distinguish incentive from appraisal effects, it was critical to establish that our measures of quality of appraisal were not contaminated by general feelings about performance pay. In one of the trust hospitals, we included several additional questions that related to very specific and concrete aspects of the appraisal process to which we applied a factor analysis.[3] We regressed the more general indicators that we had for all the organisations in our study on these, and found that the detailed questions predicted them well. We selected three general indicators of appraisal effectiveness in this way. They were whether employees felt PRP had led their managers to set work targets more clearly; whether they thought their last appraisal was a fair reflection of their performance; and whether they thought their line managers knew enough about their jobs to appraise them accurately and fairly.[4]

Many public service jobs offer great opportunities for intrinsic motivation. Collecting the revenue needed for public services, helping job seekers, looking after the sick and educating children can all be rewarding activities in their own right. Such non-pecuniary benefits may attract

[2]. It was only very weakly correlated with receiving performance pay, and so it is unlikely that it was greatly influenced by it.

[3] These were the following: a) consultation: opportunity to discuss with one's line manager during the past year on: performance, job role, to identify objectives, and training needs; b) supportiveness: whether the interview was judged to be irrelevant, superficial, threatening, or useful; c) clarity: whether employees know what they have to do to get a good appraisal, their job role is clear, their training needs are clear, and they understand the reasons for their latest assessment.

[4] . Measurement problems can arise because employees doubt that management will or is competent to apply valid criteria, and because they doubt it can measure them reliably and honestly. This is particularly likely in health and education, where many employees believe that they work to professional standards, and which they do not regard management as competent to measure (Zucker, 1991).

many into the public service. Deci and Ryan (1985) argue that strong intrinsic motivation is associated with a strong desire for autonomy in one's work. Such employees would resent being treated as if their good performance were motivated by marginal increments in pay, and the resulting closer performance monitoring by management. We used factor analysis to combine the questions on intrinsic and extrinsic motivation.[5]

Organisational commitment is widely held to imply a strong belief in and acceptance of the organisation's goals; a willingness to exert extra effort on its behalf; and a strong desire to maintain membership (Mowday, Steers and Porter, 1981). Our measures of commitment were based on scales developed by Meyer and Allen (1997) and Peccei and Guest (1993) and are described in the appendix.[6]

All of these variables are summarised in Table 1.

4. Results: Motivational Outcomes

The overall results show that the majority of public employees in our sample accepted the principle of linking pay to performance (Table 2). However, they were more sceptical as to whether it was an effective incentive, either *ex post* in rewarding good performance, or *ex ante* in providing an incentive to work beyond job requirements or to show more initiative. On the whole too only one third thought it had made them more aware of their organisation's objectives, although this could have been because they were already aware of them. Against this evidence of weak overall incentive effects, stand the findings that the schemes were demotivating and divisive, a finding highlighted by the government's Makinson Report (2000) on the reform of civil service PRP. Two thirds of staff thought PRP caused jealousies, many thought it discouraged team working, that

[5] . These concerned notably what people felt attractive about their current jobs: varied and interesting work, opportunities for responsibility, and pay and career opportunities. We used factor analysis to construct the variables.

[6] . Our measures of commitment were based on whether employees felf working for their organisation meant a great deal to them, whether they would be as happy working in another organisation, whether they felt 'part of the family' in their current office, whether they felt they were contributing to an important public service, whether they felt 'emotionally attached' to their current organisation (negative), whether it was fair to use PRP in order to prevent staff from leaving, and whether employees usually lose out whenever things change in their organisation. Factor analysis was used to derive the variable.

management operated a quota to restrict good appraisals, and a significant minority felt it had reduced their cooperativeness with management.

To simplify presentation, we combined these variables, using factor analysis, into two summary factors: positive incentive effects of PRP, and negative demotivating effects. These were converted into a suitable form for a logit analysis (Table 3). The individual logit regressions on each variable are given in Appendix Table 1.

Taking the positive incentive effects, there were strong and significant coefficients on both receiving above average performance pay, and on people's own estimation of their performance relative to other staff, and hence their estimate of their likely success in getting it. Also coming out strongly were the variables relating to the quality of appraisal and goal-setting. If employees thought PRP had led managers to set targets more clearly (because they have to appraise them afterwards), and if they thought their last appraisal fair, then they were more likely to experience positive incentive effects. In the same vein, if they thought their performance hard to measure satisfactorily, or they had a prior notion that there was an appropriate standard for their work, they were less likely to feel the incentive. Whether motivation was extrinsic or intrinsic seemed overall to make little difference. However, committed employees, whether affective or goal commitment, were more likely to respond that PRP was motivating.

It is of considerable interest to know how the strength of the financial incentive compares with that of effective appraisal and goal-setting. Logit coefficients are not easy to interpret for this purpose. As is well-known, logit regression coefficients tell us the change in the log of the odds[7] that a person will find PRP motivating for a unit change in the independent variable. This cumbersome concept can be made simpler by taking the exponent: the proportionate change in the odds arising from a unit change in the independent variable (Table 4). Values of less than one imply a decrease in the odds. Thus in moving to above average PRP increases the odds by a factor of 1.7. Because the mean values of the independent variables differ, it may be felt preferable to compare elasticities. These relativise the effect of getting above average performance pay: although still strong, at 0.3, it is considerably less so than the other variables. However, comparing elasticities for binary and five-point scale variables is far from ideal, so a final check on the relative strength of each variable was done by computing logit coefficients for all of them measured as binary variables. This involves

[7]. The 'odds' are used in their strict sense here to refer to the ratio of the probality of the event occurring to its not occurring.

some loss of information, but it shows that the effect of getting above average performance pay, at 0.54, is probably weaker than the beneficial effects of setting work targets more clearly (1.2), and is of a comparable order of magnitude to the negative effects of unfair appraisals and perceived measurement difficulties. A similar picture emerges when we consider the negative demotivating effects. Incentive effects are relatively small compared with those of the quality of appraisal and goal-setting.

These calculations show that the financial incentive effect is quite small compared with the importance of a well-organised and felt-fair appraisal and goal-setting system.

5. Results: Workplace Performance Outcomes

So far the analysis has dealt exclusively with the effects of performance pay on individual employees' motivation and work attitudes. As is well-known, employee reports of increased motivation may not correlate with improved organisational performance for many reasons. Jobs may give little scope for discretion owing to tight supervision or closely specified duties. Other factors such as customer pressure, direct pressure from management, or employees' own internalised feelings of commitment to professional standards or to organisational goals may cause motivation and performance to diverge.

We know from conversations with senior managers either during our fieldwork interviews or the feedback sessions at which we presented our findings that management generally did not believe organisational performance had declined. Given the increased use of organisational performance indicators across the public sector which top management were expected to achieve, such impressions are likely to be well-grounded although they are too broad-brush for our immediate purposes.[8] More valuable for our study than overall judgements and overall organisational indicators, we had line-manager judgements of how aspects of staff performance had changed. Because these line-managers are central both to the setting of employee objectives and to appraisal

[8] . Although senior managers did not have survey data comparable to our own, we know they have used quite sophisticated internal benchmarking of performance for some time (eg. National Audit Office, 1989), and in some cases carry out their own internal staff surveys.

of their achievements, they are in a privileged position to observe the first key link in the chain between individual motivation and organisational performance.

For the two civil service departments and our two trust hospitals we were able to link individual employee replies to those of their line-managers at the level of the individual workplace. We were able to match employee and line-manager reports for a total of 25 workplaces in 1996-97, which rose to 38 if we included also the Inland Revenue data for 1991. Because of differences in the questions posed, most of our analysis is limited to workplaces in the 1996-97 surveys.

We use two questions in particular of those posed to line-managers about the effects of PRP on the performance of other staff: whether it had caused many of the staff to work harder; and whether it had caused them to cooperate less with management. The overall replies to these questions in each organisation are shown in Table 5. Because of the way we asked the question about work intensity, 'declines', 'no change' and 'no view' are lumped all together. On both questions, a very substantial minority of line managers believed PRP had caused many staff to work harder, and a comparable minority thought it had reduced staff cooperation with management. Somewhat smaller percentages of individual staff took the same view about their own personal effort and cooperativeness.

The most obvious concern about our use of such data to gauge workplace performance is whether line-manager reports are measuring aspects of this or something quite different, such as their own deeply held views on the principle, or the perceived fairness of their own latest performance rating. Crude correlations between these are weak and mostly not significant. A more pertinent test is whether line-manager reports about effort levels and cooperation in the workplace coincide with those of ordinary, non-managerial, staff in the same workplace (Table 6). Because the number of workplaces in 1996-97 is rather small, we repeated the same analysis including data for the Inland Revenue in 1991 to see whether significance levels rose and the signs remained the same with additional observations. This is what happened. So we conclude that line-manager reports on workplace performance did indeed correspond to the experience of non-managerial employees.

The next question was whether we could establish a relationship between the earlier motivational outcomes of PRP and line-manager assessments of workplace performance. To do this, we computed the mean line-manager estimate of workplace performance (for increased work intensity and cooperativeness), and assigned these to each individual employee in the sample. We then regressed our measures of workplace performance on the non-manager motivation scores

(Table 7). To boost the number of observations we included the Inland Revenue data for 1991 together with a year dummy for 1996-97. As can be seen, there was a modest but strongly significant relationship between the motivational outcomes and workplace performance. As expected, positive incentive effects were associated with increased work effort and cooperation, and negative demotivating effects, with the opposite.

One notable feature is the size of the coefficient on the year dummy, indicating a big change in work intensity and in the willingness to cooperate between 1991 and 1996 (visible also in Table 5). In the Inland Revenue, there was an important change in the PRP system with the introduction of 'extra loading', affecting about one fifth of respondents. Posts thus classified brought more highly geared incentives. For example, a 'Succeed' in an 'Extra loaded' post brought the same reward as an 'Exceed' in one that was normally loaded. Thus, compared with the scheme in force in 1991, that of 1996 was specially designed to solicit greater efforts from staff, and it corresponded to an increased workload on the organisation.[9]

Finally, we offer a more detailed examination of how different aspects of PRP affect performance by regressing the measures of workplace performance on the variables found to affect individual motivation directly (Table 8). The full set of variables was available only for 1996-97, which reduces the number of workplace means to 25, so we use simple regressions rather than logits in order to conserve the limited information we have on workplace performance. Unlike in the earlier logit regressions (Table 3), schools are excluded because we had head teacher judgements only.

Leaving aside the control variables, the positive incentive effects of above average performance pay and managers setting targets more clearly boost workplace effort, and the experience of unfair appraisals diminishes it. Likewise, intrinsic motivation (interesting work) and goal commitment (public service) help PRP to boost effort levels. Turning to cooperation, belief that there is a standard for the job, and commitment to one's workplace, seem to protect PRP against damage to cooperation. One puzzle is that managers setting targets more clearly should reduce cooperation. This may reflect the ambiguity of goal-setting mentioned earlier between clarifying goals and negotiating targets. Our survey provided evidence of both (Marsden and French, 1998).

[9]. One of the biggest of these was the introduction of 'Self Assessment' for self-employed people.

Full comparison with the earlier results for individual motivation is limited by the small number of workplaces, making the coefficients less well determined, and by the exclusion of schools. This was particularly so for the cooperation regression where a number of the coefficients in the logit equations lost significance when head teachers were excluded. The most important of these were the effect of getting PRP and target setting, both of which helped combat demotivation at the individual level, but fell below the significance threshold when head teachers were taken out of the sample.

6. A Test of Attribution

The size of the dummy variable for the Inland Revenue results for 1991 (Table 7) raises a difficult issue. Even though, as mentioned earlier, the 1996 IR scheme was designed to encourage 'extra loading', it remains possible that between 1991 and 1996 employee effort rose a lot, independently of the motivational factors in our model. It is possible that employees erroneously attributed their increased effort and decreased cooperation to management's use of PRP, and the pay scheme behaved more like a 'lightning conductor' for discontent over increased work loads. Any other pay system might have attracted the same unpopularity. It is hard to test the presence of such effects on the civil service departments because everyone was subject to the same incentive system and there is no obvious control group. However, our two NHS trust hospitals had significant numbers of staff who were not covered by the PRP arrangements, and yet workloads also were judged to have increased there (see Table 5 above). Thus, they offer a partial control group to test some of the PRP effects.

In the two hospitals, management had used the introduction of performance pay and local pay determination as an opportunity to rationalise pay structures and to eliminate a large number of anomalous bonuses and other premium payments. These had accumulated over the years, and now left the hospitals open to the risk of equal value cases. To buy out all of these premia so that no one would be worse of financially under the new system would have been inordinately expensive. So management made the transition voluntary for incumbent staff, the move to local trust contracts being compulsory only for new recruits and those promoted. This means that our 'control group' involves an element of self-selection, but not for reasons directly related to the incentive aspects of PRP. The

managers who introduced the change took the view that the most common reason for remaining on the older nationally determined 'Whitley' scales was that the individuals concerned would be worse off financially. Notably, they would lose extra pay for weekend working. This was borne out by the 'written-in' replies on our questionnaires, a large number of which stressed financial reasons rather than hostility to the principle of PRP.

For each of the outcome variables, positive incentive and negative de-motivation, we cross-tabulated the means by type of contract, and in one of the hospitals we were able also to cross them with whether or not individual staff had received a performance appraisal. In each hospital, those covered by PRP on trust contracts responded more favourably, being both more responsive to the incentive element, and less likely to express demotivation. The results are shown in Appendix Table 2 together with the standard errors which show the means are significantly different. We observed too a similar albeit weaker effect from having had an appraisal. In fact, most staff who had not been appraised at the time of our survey wished to have one, a clear indication that there was no hostility to the process itself.

Although there is almost certainly an element of self-selection as some of those who chose to remain on Whitley scales objected in principle to PRP, the majority chose to remain on them for reasons unconnected with the incentive and goal-setting elements of PRP. Thus, the stronger positive judgements and milder negative judgements of PRP revealed in the two hospitals among those covered, as compared with those on Whitley contracts, reinforce the view that PRP has been instrumental in increasing work levels and has not been a mere 'lightning conductor' for discontent.

7. Performance Outcomes, Measurement and Commitment

The overall effects of performance pay in the public services as published in our earlier report showed that on balance PRP had not motivated staff, and it had led to widespread feelings of divisiveness and demotivation, especially in the two civil service departments (Marsden and French, 1998). Nevertheless, despite these observations, it was not evident that productivity had suffered. Indeed, there was a distinct possibility that PRP had helped to raise it, although there was also a serious question as to whether this effect could be sustained over the longer run given the effects on employee motivation.

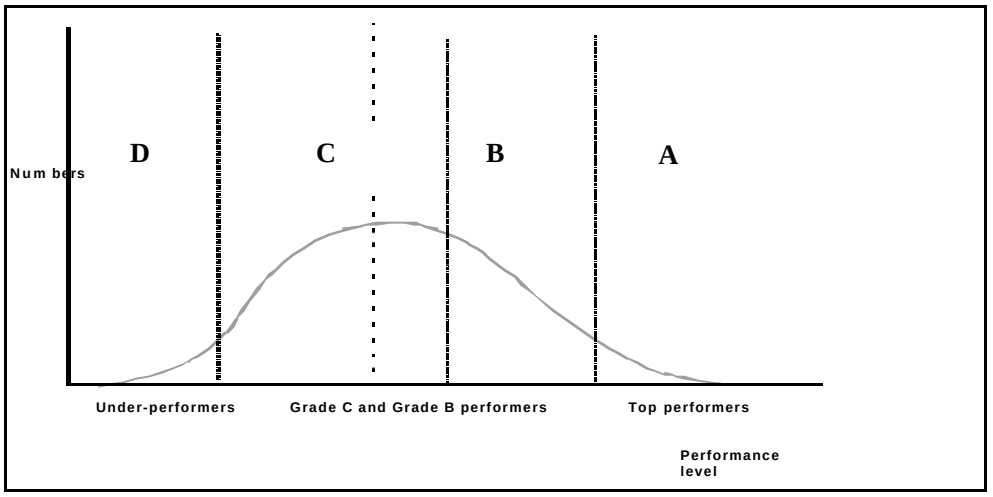
In this paper, we have tried to probe deeper and measure the positive and negative effects of PRP both on employee motivation and on aspects of workplace-level organisational performance. Our study confirms that PRP in the British public services has had a positive incentive effect for significant numbers of employees, but that this depends on getting above average additional financial reward, and even more importantly, on the quality of the goal-setting and appraisal process. Our analysis confirms the corrosive effect on employee motivation of appraisals that employees feel are not a fair reflection of their performance. Although discussions of PRP for top executives, sales and sports personnel have tended to focus on the incentive effect of additional rewards, the experience of ordinary public employees in our study strongly suggests that the strength of marginal financial incentives is weak compared with that of goal-setting and appraisal. Likewise, the damage done by poorly conducted appraisals outweighs the benefits of additional financial incentives.

By looking at line-manager judgements of employee effort and cooperation across workplaces, we have been able to establish a link between employee motivation and organisational performance. These confirm that the motivational outcomes matter for the organisation. Where PRP motivated employees positively, there workplace performance, as judged by line-managers, was better. Where it demotivated employees, line-manager judgements of workplace performance were less favourable.

Why should PRP apparently perform less well for 'ordinary' employees than for those who have been extensively studied so far? One answer may lie in the difficulty of grading performance in a way that staff find acceptable. One of the chief lessons from our study has been that the way appraisal and goal-setting divide employees between different performance grades is critical to the success of PRP. Wherever the line is drawn, it is likely to be controversial, especially when, as shown by our study, employees are suspicious of both management's intentions and its competence to appraise fairly. If one assumes that performance follows a roughly normal distribution, as in Figure 2, then separating off the extreme good (A) and bad (D) performers may achieve the desired incentive effects with relatively small divisiveness effects. At the two ends of the distribution, the number of individuals is fairly small so those in the immediate proximity of the dividing lines are relatively few. In contrast to these 'thinly populated' sections of the distribution, the area close to the dividing line that separates the top 30% from the rest is much more densely populated, and many more employees feel the injustice of being just on the wrong side of the divide. 'Why does my

performance, which has been very similar to that of my colleague, warrant only a C when my colleague is awarded an B?' Such questions are very hard for individual line managers to answer convincingly. Thus, Prendergast's observation that there is a dearth of studies on ordinary employees is a very serious one because when we grade performance of ordinary employees we have to distinguish the Bs from the Cs far more often than the Ds and the As. Many more employees risk being adversely affected by poorly conducted appraisals at the boundary between C and B than between B and A. It may therefore be much easier to run performance pay schemes for employees at either extreme, than for the mass of ordinary employees in the middle.

Figure 2. The Problems of Distinguishing Among Middle-Range Performers



Finally, our study also suggests that commitment, in its affective form to one's office colleagues and workplace, and in its goal-centred form to an idea of public service, plays an important role. In particular, it seemed to help offset the potential negative effects of badly conducted appraisals, and to boost confidence in incentives. In this respect, it emerges as an important factor for the principal-agent analysis. The pure self-interest version of the theory is extremely vulnerable to break-down if employees lose confidence in management's good faith and in its competence to measure performance. If you don't think you'll get the reward even if you perform well, there is no incentive in this model to do anything other than supply the low level of effort. Commitment to one's workplace and to public service appear then as important stabilisers, allowing management to get away with poorly conducted appraisals for a time at least. The employees may feel fed-up with management and distrust them, but at the end of the day, they see

themselves as serving the community to which they belong. Of course, they expect to be paid appropriately for this, but they will tolerate a certain amount of perceived unfairness without it affecting performance. A separate analysis that we have undertaken of the Inland Revenue between 1991 and 1996 suggests that commitment can decline over time, as can the belief that one's work contributes to an important public service if pressure rather than persuasion is used to increase work loads (Marsden and French, 2001).

Table 1. Summary of Main Variables Analysed

Dependent variables	Control variables	Independent variables
I. Directly attributed outcomes	**a) Structural**	**a) Incentive effect**
a) Effects on individual motivation	Employment Service (cf IR)	Gets above average PRP
Rewards good work	Hospitals	My work always better than others
Work beyond job requirements	Schools	
Good principle	Professional (cf Mgrs)	**b) Goal-setting**
Show more initiative in my work	Technical	Mgrs set targets more clearly
	Clerical	
b) Impact on work relations	Service	**c) Quality of appraisal**
Causes jealousies among the staff	Craft	My last appraisal was fair
Undermines team working		Mgrs know enough to appraise me
Reduced my wish to cooperate with mgt.	**b) Biodata**	
Management operate a quota	Length of service	**d) Measurability of performance**
Doubt I'll get a good appraisal even if I perform well	Male	Performance hard to measure
		There is a standard for the job
c) Communicating objectives		
Raised my awareness of org's objectives		**e) Intrinsic/extrinsic motivation**
		Intrinsically motivated Factor 1
		Extrinsically motivated Factor 2
		f) Commitment
		Affective commitment Factor 1
		Goal commitment Factor 2

Table 2. General Results: Overall Probabilities of Believing Particular Effects of PRP

Mean values of the dependent variables used	% agree	Disagree/ no view
PRP is a good principle	51.5	48.5
PRP means good work is recognised and rewarded	33.3	66.7
PRP has given me an incentive to work beyond my job requirements	16.6	83.4
PRP given me an incentive to show more initiative	17.9	82.1
PRP has made me more aware of the org's objectives	36.3	63.7
PRP causes jealousies among staff	66.8	33.2
PRP is bad for team working	46.5	53.5
Management operate a quota	61.3	38.7
PRP has made me less willing to cooperate with mgt.	17.3	82.7

Note: in the original questionnaires these questions offered a 5-point scale from disagree strongly to agree strongly.

Table 3. Summary of the Logit Results

	B	SE	B	SE
	Positive incentive effects		Negative demotivating effects	
Employment service	.3013	.1757	-.6513**	.1856
NHS hospitals	-.1824	.1993	-1.9627**	.2013
Schools	-1.5893**	.2233	-.6528**	.2133
Professionals	.1281	.1475	-.0754	.1261
Technical	.5801**	.1975	.3966	.2028
Clerical	.5804**	.1708	.3277	.1681
Service	.3923	.2908	.5867*	.2885
Craft	.5450	.8919	.9617	.8453
Length of service	-.0173**	.0069	.0035	.0068
Male	-.0064	.1021	.0246	.0966
My work better than others	.2453**	.0540	.0911	.0530
Gets above average PRP	.5546**	.1104	-.3100**	.1073
Mgrs set targets more clearly	.5560**	.0471	-.2071**	.0439
My last appraisal was fair	.1151**	.0453	-.2962**	.0438
Mgrs know enough to appraise me	-.0502	.0388	-.1245**	.0372
Performance hard to measure	-.3403**	.0464	.6899**	.0484
There is a standard for the job	-.4802**	.0496	-.0147	.0474
Intrinsic motivation	.0593	.0543	.0126	.0540
Extrinsic motivation	-.0207	.0461	-.0543	.0451
Affective commitment Factor 1	.3066**	.0619	-.2112**	.0591
Goal commitment Factor 2	.1846**	.0593	-.1463**	.0566
	.0433	.4595	-.1267	.4498
N	2990		2990	
% correct	76.81%		73.30%	
Ch2	848.636		911.207	
Sig	**		**	
R2 (Cox & Snell)	.246		.261	
R2 (Nagelkerke)	.340		.349	

Detailed logit coefficients are shown in Appendix Table 1. Dependent variables 'Positive incentive effects' and 'Negative demotivating effects'. The latter exclude the question about a 'quota' on good appraisals because this was not asked in the hospital with a trust-wide bonus where it would have made no sense to respondents. ** significant at the 2% level, and * significant at the 5% level.

Table 4. Alternative Measures of the Relative Strength of the Financial Incentive

a) Probability of Positive Incentive Effects

Variable	Logit coefficient (B)	Exp(B)	Elasticity	Logit coefficient for binary variables (B & SE)
Gets above average PRP	0.55	1.74	0.32	0.54 (0.108)
Mgrs set targets more clearly	0.56	1.74	4.82	1.21 (0.093)
Doubt I'll get a good appraisal	0.12	1.12	1.09	0.33 (0.099)
Performance hard to measure	-0.34	0.71	-3.95	-0.62 (0.101)
Affective commitment Factor 1	0.31	1.36	na	0.47 (0.104)
Goal commitment Factor 2	0.18	1.20	na	0.41 (0.111)

b) Probability of Negative Demotivating Effects

Variable	Logit coefficient (B)	Exp(B)	Elasticity	Logit coefficient for binary variables (B & SE)
Gets above average PRP	-0.31	0.73	-0.11	-0.37 (0.106)
Mgrs set targets more clearly	-0.21	0.81	-1.13	-0.52 (0.090)
My last appraisal was fair	-0.30	0.74	-1.76	-0.62 (0.100)
Managers know enough to appraise	-0.12	0.88	-0.66	-0.29 (0.089)
Performance hard to measure	0.69	1.99	5.03	1.33 (0.106)
Affective commitment Factor 1	-0.21	0.81	na	-0.23 (0.101)
Goal commitment Factor 2	-0.15	0.86	na	-0.30 (0.101)

Table 5. Line Manager and Staff Views on Increased Effort and Cooperation with Management

Question: % replying 'agree'	IR-91	IR-96	ES	Individual PRP trust	Group PRP trust
Line manager views					
• PP has increased quantity of work done	22	42	28	52	34
• PP has reduced staff willingness to cooperate with management	20	45	39	30	27
Staff views					
• PP has increased quantity of work I do	14	25	19	na	na
• PP has made me less willing to cooperate with management*	10	30	26	19	14

Table 6. The Effects of PRP on Work Effort and Cooperation by Workplace. Comparison of Line-Manager Judgements About Staff Performance with Staff Judgements about their Own Behaviour (Pearson Correlations)

Line manager views:		**Ordinary staff views**
PRP has:		**PRP has:**
a) caused many staff to work harder		**a) caused me to work harder**
1996 IR & ES-97	Pearson Correlation	.609*
		(.027)
	N	13
1991 & 1996 IR & ES 97	Pearson Correlation	.556**
		(.003)
	N	26
b) reduced staff willingness to cooperate with mgt.		**b) reduced my willingness to cooperate with mgt.**
IR 96 & ES 97	Pearson Correlation	.223
		(.486)
	N	12
IR 91 & 96 & ES 97	Pearson Correlation	0.835**
		(0.000)
	N	25

* and **: Correlation is significant respectively at the 0.05 level (2-tailed) and the 0.02 level (2-tailed). Significance levels in parentheses. Executive offices with less than ten observations excluded because of statistical unreliability, and EO #32 (North West). NHS excluded because question was not asked.

Table 7. Regressions of Workplace Performance Scores on Individual Employee Motivation Data

Dependent vble: Line manager views	Positive incentive factors (B) a)	Year dummies	R2	Negative de-motivating factors (B) a)	Year dummies	R2
• PRP has caused many staff to work harder	.01725** (.007)	.468**	.486	-.025** (.007)	.471**	.487
• PRP has reduced staff willingness to cooperate with mgt.	-.0165** (.006)	.491**	.569	.0886** (.006)	.479**	.587

Simple OLS regressions. N = 4594 analysis includes all offices. Standard errors on B coefficients in parentheses.
* Coefficient is significant at the 0.05 level. ** Coefficeint is significant at the 0.02 level.
a) Excluding line managers. Organisations: Inland Revenue 1991 and 1996, Employment Service and NHS trust hospitals.

Table 8. Determinants of Workplace Performance 1996-97

	PRP has raised productivity				PRP has reduced cooperation			
	B	Std. Error	Elasticity * 10	Sig	B	Std. Error	Elasticity * 10	Sig
(Constant)	2.909	0.066		**	3.132	0.037		**
Employment Service dummy	-0.173	0.022	-0.056	**	-0.146	0.012	-0.046	**
NHS trust hospitals dummy	0.143	0.028	0.254	**	-0.295	0.015	-0.520	**
Professional	-0.010	0.033	-0.012		-0.009	0.018	-0.010	
Technician dummy	-0.024	0.025	-0.012		-0.010	0.014	-0.005	
Clerical dummy	-0.001	0.024	-0.002		-0.007	0.014	-0.009	
Service isco dummy	-0.097	0.041	-0.023	**	0.001	0.023	0.000	
Craft dummy	0.070	0.107	0.002		0.001	0.060	0.000	
Length of Service in Org	-0.001	0.001	-0.030		0.000	0.001	0.002	
Male dummy	0.010	0.015	0.009		-0.005	0.008	-0.005	
My work better than others	-0.008	0.007	-0.087		-0.002	0.004	-0.023	
Gets above average PRP	0.043	0.017	0.026	**	0.009	0.009	0.005	
Mgrs set targets more clearly	0.022	0.007	0.218	**	0.011	0.004	0.108	**
My last appraisal was fair	-0.016	0.006	-0.176	**	-0.003	0.004	-0.030	
Mgrs know enough to appraise me	-0.000	0.005	-0.004		0.003	0.003	0.028	
Performance hard to measure	0.002	0.007	0.024		0.002	0.004	0.030	
There is a standard for the job	-0.001	0.007	-0.012		-0.011	0.004	-0.142	**
Intrinsic motivation	0.015	0.007	-0.016	*	0.000	0.004	0.000	
Extrinsic motivation	-0.012	0.006	0.001	+	-0.002	0.003	0.000	
Affective commitment Factor 1	-0.006	0.008	0.009		-0.014	0.005	0.021	**
Goal commitment Factor 2	0.021	0.008	-0.015	**	-0.004	0.005	0.003	
Adj r2	0.169				0.415			
F	20.774				69.889			
Sig	**				**			
No of individuals	1946				1946			
No of workplaces	25				25			

Note: OLS regression based on line-manager judgements of all workplaces, but excluding schools.
Significance: ** 2%; * 5%, + 10%.

8. Appendix: Survey Methods

The research was based on questionnaire surveys to employees in the Inland Revenue, the Employment Service, two NHS trust hospitals operating PRP, and primary and secondary school head teachers between August 1996 and March 1997. Where possible we sought the support of both management and unions. In the hospitals, management distributed the questionnaires to all staff except doctors, who were outside the PRP scheme. For the civil service and head teachers, the unions drew random samples of their members. The response rate varied between a low of 20% in one of the hospitals and about 40% for head teachers, giving us a total sample of about 5,000. Full details, together with checks for possible response bias, can be found in Marsden and French (1998). We discussed our cross-section results in a series of feed-back seminars with management, unions, and other staff.

Most of the attitudinal questions were measured as responses to five-point Likert scales running from 'disagree strongly', through 'no view' to 'agree strongly'. The dependent variables, were re-coded into binary variables for the logit analysis.

Appendix Table 1. Logit Regression Results

	Variable	B	SE	B	SE	B	SE	B	SE	B	SE
		Rewards good work		Good principle		Work beyond job requirements		Show more initiative in my work		Raised my awareness of org's objectives	
		gdwork_d		**Ppgood_d**		**Mejob_d**		**Meinit_d**		**Aware_d**	
Employment Service	ORG_ES	.3000	.2088	**.5393****	.1752	**-.7055****	.2508	.0688	.2133	**.4105****	.1656
Hospitals	ORG_NHS	**1.4336****	.2075	.3623	.1946	-.3064	.2318	**-.6911****	.2246	-.0417	.1863
Schools	ORG_SCHL	**1.0977****	.2272	**-1.4835****	.2064	**-1.3801****	.2722	**-1.6603****	.2642	**-1.0873****	.2032
Professional	ISCO_PRF	-.0355	.1320	**-.6310****	.1289	.1578	.1896	-.0065	.1836	.0184	.1321
Technical	ISCO_TEC	.2131	.2275	.2587	.1873	**.9453****	.2560	**.6625****	.2474	.2614	.1843
Clerical	ISCO_CLE	.2743	.1823	-.2271	.1610	**.6442****	.2173	**.5945****	.2100	**.4804****	.1577
Service	ISCO_SER	.4095	.2916	-.5447	.2836	.3741	.3193	.4823	.3110	**.7397****	.2744
Craft	ISCO_CRF	.7789	.8622	-.3494	.8810	-.7231	1.1536	.2780	.9335	-.5532	.8765
Length of service	LOSORG	.0043	.0073	**-.0127***	.0064	**-.0214****	.0087	**-.0416****	.0086	.0022	.0064
Male	MALE_DUM	-.0556	.1046	.0229	.0935	.0678	.1289	-.0076	.1232	-.1057	.0942
My work always better than others	BETTERWK	**.1960****	.0567	**.2445****	.0497	**.3014****	.0669	**.2576****	.0640	.0165	.0496
Gets above average PRP	GETPRP_D	**.6164****	.1102	**.4463****	.1037	**.6744****	.1302	**.4768****	.1281	.0064	.1034
Mgrs set targets more clearly	PPTARGET	**.5805****	.0484	**.2633****	.0424	**.3937****	.0601	**.4791****	.0577	**.5250****	.0433
My last appraisal was fair	EXPFAIR	**.3060****	.0479	.0787	.0406	**.1468****	.0593	**.1160***	.0559	.0237	.0416
Mgrs know enough to appraise me	MGR_KNO	.0723	.0399	**-.0702***	.0351	.0842	.0490	-.0628	.0469	.0564	.0354
Performance hard to measure	PPMEASUR	**-.5466****	.0480	**-.6178****	.0480	**-.3340****	.0548	**-.2544****	.0533	**-.2240****	.0431
There is a standard for the job	JOB_STD	**-.2732****	.0491	**-.1697****	.0461	**-.6624****	.0588	**-.6390****	.0564	**-.2259****	.0451
Intrinsic motivation (F1)	INTRI_F1	**.1256***	.0597	.0125	.0490	.0020	.0698	.1173	.0668	**.1200****	.0511
Extrinsic motivation (F2)	INTRI_F2	**.1187****	.0495	.0008	.0422	-.0044	.0581	-.0722	.0547	.0044	.0429
Affective commitment Factor 1	COM_FAC1	**.1642****	.0634	**.1939****	.0562	**.2935****	.0779	**.2738****	.0741	**.2926****	.0571
Goal commitment Factor 2	COM_FAC2	**.1411****	.0605	.0836	.0538	**.2728****	.0746	**.2339****	.0715	.0622	.0546
Constant		**-2.3520****	.4735	**2.2422****	.4362	-.8048	.5622	-.0961	.5402	-.5657	.4241
N		3058		3053		3062		3062		3059	
% pre-dicted		77.54%		71.48%		86.04%		84.85%		72.11%	
Chi2		988.061		821.336		643.775		630.796		593.056	
Sig		**		**		**		**		**	
R2 C&S		.274		.234		.188		.185		.175	
R2 Nk		.381		.312		.318		.303		.239	

Appendix Table 1 continued

	Variable	B	SE	B	SE	B	SE	B	SE	B	SE
		Causes jealousies among the staff		Undermines team working		Management operate a quota		Reduced my wish to cooperate with mgt.		Even if I perform well doubt I'll get a good appraisal	
		Jelus_d		Teambd_d		Quota_d		Mecoop_d		Expdbt_d	
Employment Service	ORG_ES	**-.5658****	.2122	**-.4709****	.1675	-.2320	.1877	-.2404	.1912	**-.5614****	.1701
Hospitals	ORG_NHS	**-1.6145****	.2024	**-2.0734****	.2076	**-.6346****	.2194	**-1.0345****	.2696	**-1.7945****	.1967
Schools	ORG_SCHL	**-1.5630****	.2234	-.2100	.2089	**-.8499****	.2194	**-1.2773****	.2773	**.9687****	.2074
Professional	ISCO_PRF	**-.2924****	.1225	-.1234	.1227	**.3836****	.1244	.2176	.2140	**.7170****	.1376
Technical	ISCO_TEC	-.0371	.2365	.2576	.1885	**.4931****	.1995	-.0362	.2167	.2271	.1858
Clerical	ISCO_CLE	**-.3629***	.1773	.1725	.1656	**.8096****	.1752	.3378	.1989	**.6519****	.1623
Service	ISCO_SER	-.3970	.2645	.5390	.3192	.9197	.4769	.7363	.3888	**.7556****	.2728
Craft	ISCO_CRF	2.2069	1.4743	**1.7145***	.7984	1.1147	1.0147	.7737	1.0200	.5647	.8348
Length of service	LOSORG	6.81E-05	.0071	-.0005	.0065	.0086	.0071	**.0232****	.0080	**.0131***	.0066
Male	MALE_DUM	.1087	.0995	.1208	.0910	-.0923	.0974	**.3852****	.1187	**-.3301****	.0979
My work always better than others	BETTERWK	.1040	.0535	.0595	.0504	**.1171***	.0551	-.0970	.0626	.0784	.0510
Gets above average PRP	GETPRP_D	.0757	.1091	-.1770	.1025	**-.5416****	.1043	-.1645	.1470	**-1.0071****	.1048
Mgrs set targets more clearly	PPTARGET	**-.1214****	.0451	**-.0879***	.0418	**-.2707****	.0451	**-.2733****	.0551	-.0815	.0438
My last appraisal was fair	EXPFAIR	-.0503	.0439	**-.1075****	.0407	**-.3447****	.0453	**-.4052****	.0506	**-.4771****	.0445
Mgrs know enough to appraise me	MGR_KNO	**-.1034****	.0383	**-.1460****	.0350	-.0265	.0384	**-.1189****	.0442	.0086	.0365
Performance hard to measure	PPMEASUR	**.7276****	.0478	**.6734****	.0479	**.3105****	.0467	**.3068****	.0638	**.3028****	.0448
There is a standard for the job	JOB_STD	-.0355	.0471	.0342	.0458	.0830	.0480	.0791	.0623	-.0186	.0472
Intrinsic motivation (F1)	INTRI_F1	-.0156	.0568	.0729	.0505	.0644	.0554	.0589	.0583	.0327	.0518
Extrinsic motivation (F2)	INTRI_F2	.0014	.0451	-.0469	.0431	.0635	.0468	.0243	.0511	**.0920***	.0439
Affective commitment Factor 1	COM_FAC1	**-.1502****	.0600	**-.1806****	.0570	**-.2149****	.0618	**-.6198****	.0708	**-.2133****	.0581
Goal commitment Factor 2	COM_FAC2	**-.1392****	.0569	**-.1902****	.0543	**-.1490****	.0587	-.0578	.0691	-.0283	.0560
Constant		-.1709	.4512	**-1.6415****	.4340	.7644	.4543	-.6780	.5669	.8292	.4404
N		3058		3059		2723		3056		3062	
% pre-dicted		73.43%		70.44%		71.04%		84.55%		75.03%	
Chi2		714.400		809.362		624.015		631.200		870.308	
Sig		**		**		**		**		**	
R2 C&S		.207		.231		.204		.185		.246	
R2 Nk		.287		.308		.276		.308		.332	

Note: The organisation and occupation dummies respectively take the Inland Revenue, and management as their benchmark. The coefficients show how much working in a particular organisation or occupation increases (if positive) or decreases (if negative) the probability of agreeing with one of the dependent variable questions. All independent variables were run for each dependent variable, but we report only coefficients significant at the 5% level or less.

Appendix Table 2. Control Group Analysis of PRP Effects
Comparing those covered by PRP (trust contracts) and those not (Whitley contracts) and whether or not a performance appraisal had been held.

NHS contract type		Rewards good work	Good principle	Work beyond job requirements	Show more initiative in my work	Raised my awareness of org's objectives	Causes jealousies among the staff	Undermines team working	Reduced my wish to cooperate with mgt.	Even if I perform well doubt I'll get a good appraisal
Appraisal held										
Trust contract	Mean	3.56	3.22	2.67	2.65	2.94	3.39	2.52	2.41	3.02
	Std. Error	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.05
	N	533	529	526	525	523	534	532	534	536
Whitley contract	Mean	2.96	2.47	2.16	2.08	2.55	3.59	2.78	2.78	3.43
	Std. Error	0.08	0.07	0.22	0.20	0.25	0.07	0.07	0.06	0.07
	N	261	261	22	23	22	262	259	263	258
Appraisal not held										
Trust contract	Mean	3.44	3.10	2.58	2.49	2.89	3.09	2.42	2.43	2.91
	Std. Error	0.06	0.07	0.06	0.07	0.07	0.07	0.05	0.05	0.07
	N	267	266	258	254	259	265	266	267	234
Whitley contract	Mean	2.80	2.26	2.09	1.94	1.97	3.61	2.86	2.96	3.75
	Std. Error	0.08	0.07	0.19	0.13	0.18	0.08	0.07	0.07	0.06
	N	226	227	17	20	17	228	228	227	215

9. Methodological Tables. Factor Analysis for Key Dimensions Variables

9.1 Simplifiying outcome variables

Table A. Deriving the two summary outcome variables of PRP

	Component	
	Positive incentive effects	Demotivation & divisiveness effects
Rewards good work	**.540**	-.428
Good principle	**.544**	-.298
Work beyond job requirements	**.791**	-4.604E-02
Show more initiative in my work	**.802**	-4.478E-02
Raised my awareness of org's objectives	**.595**	-2.959E-02
Causes jealousies among the staff	5.631E-02	**.720**
Undermines team working	-.128	**.745**
Reduced my wish to cooperate with mgt.	-7.992E-02	**.574**
Even if I perform well doubt I'll get a good appraisal	-.249	**.465**

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 3 iterations.

9.2 Derivation of the commitment variable

Table B. Factor analysis of commitment variables

	Affective commitment	Goal commitment
	1	2
Working in the Org. means a great deal to me	**.805**	.263
I feel "part of the family" in my present office/hospital/school	**.750**	-1.374E-02
I would be very happy to spend the rest of my career with the org.	**.731**	8.319E-02
I do **not** feel 'emotionally attached' to the Inland Revenue	**.714**	.189
Whenever changes made in this org employees usually lose out in the end	**-.387**	-.103
I think that I could easily become as attached to another organisation as I am to the Inland Revenue	**-.506**	-2.050E-02
By working in the Organisation, I feel that I am contributing to an important public service	.313	**.634**
Don't award PRP to retain staff	5.185E-02	**-.869**

9.3 Derivation of measures of the quality of appraisal

Table C: Factor analysis of appraisal quality. (trust-wide bonus hospital)

	1 Consultation	2 Supportive	3 Clarity
Throughout the last year, I had sufficient opportunity to discuss my performance with my line manager	**.895**	-.193	.214
In the last year, I have had sufficient opportunity to discuss and clarify my role with my line manager	**.870**	-.241	.215
In the last year, I have had sufficient opportunity to identify objectives and targets with my line manager	**.855**	-.223	.248
In the last year, I have had sufficient opportunity to discuss my personal development needs with my line manager	**.843**	-.258	.264
I found the discussion irrelevant	-.219	**.835**	-.151
I found the discussion superficial	-.218	**.808**	-.212
I found the discussion threatening	-.120	**.757**	-.104
I found the discussion useful	.318	**-.679**	.297
I am clear about my current objectives and targets	.227	-.142	**.870**
I am clear about my current job role	.151	-.145	**.849**
I am clear about my personal development needs	.209	-.237	**.637**
I understand my manager's rating of my performance	.425	-.222	**.577**

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Table D. Regressing the general questions on appraisals and PRP on three factors of appraisal quality (group bonus hospital)

	Expdbt_d	Expfr_d	Target_d	Mgrkno_d	Measur_d	Bettrwk_d
NHS contract type	1.6977**	.0791	-.3532	-7.3189	.3695	.0183
	(.2971)	(.3388)	(.2825)	(19.4202)	(.3695)	(.2714)
Professional	.9077	-.2824	-1.6467**	-2.0758	1.4599*	.1337
	(.8037)	(.8459)	(.6927)	(1.1566)	(.6495)	(.6602)
Clerical dummy	.1842	-.9876	-.9954	-1.2138	.3279	.7772
	(.8580)	(.8852)	(.7231)	(1.1618)	(.6763)	(.6942)
Service isco dummy	1.8671*	-.6491	.1187	-.8329	-.0672	1.1588
	(.8815)	(.9524)	(.7707)	(1.1979)	(.7216)	(.7361)
Craft dummy	1.0384	-5.2542	-.8291	-7.5397	5.4767	.9405
	(1.7075)	(13.6594)	(1.7162)	(55.2887)	(14.2285)	(1.4810)
Length of Service in	-.0032	.0065	.0189	.0027	.0081	.0370
Org	(.0212)	(.0248)	(.0205)	(.0286)	(.0217)	(.0197)
Male dummy	-.2942	-1.2996*	-.7812	-1.1434*	.5767	.4871
	(.4142)	(.4362)	(.4034)	(.5806)	(.4038)	(.3574)
Consultation (wtd)	**.0033**	**.8239****	**.3517****	**.6679****	**.0110**	**-.2530***
	(.1317)	**(.1532)**	**(.1401)**	**(.2355)**	**(0.1335)**	**(.1236)**
Supportive (wtd)	**.0165**	**-.9009****	**-.4588****	**-.6023****	**.1152**	**-.1374**
	(.1313)	**(.1653)**	**(.1363)**	**(.1896)**	**(.1328)**	**(.1221)**
Clarity (wtd)	**-.3111****	**.8298****	**.2782***	**.7481****	**-.3466****	**.1239**
	(.1333)	**(.1567)**	**(.1356)**	**(.2119)**	**(.1381)**	**(.1221)**
Constant	-3.9172	1.2587	1.0799	8.5656	-.8155	-1.3842
N	345	344	348	207	347	348
% correct	72.69%	78.65%	71.11%	72.49%	71.20%	65.71%
Chi2	57.663	124.114	46.65	60.057	36.895	19.435
Sig	**	**	**	**	**	*
R2 (Cox & Snell)	.163	.319	.133	.258	.107	.058
R2 (Nagelkerke)	.225	.437	.181	.349	.150	.079

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