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SOME PRELIMINARY EVIDENCE
FROM A UK GOVERNMENT AGENCY**

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***LABOUR ECONOMICS
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Simon Burgess, University of Bristol, CMPO and CEPR
Carol Propper, University of Bristol, CMPO and CEPR
Marisa Ratto, CMPO
Emma Tominey, CMPO

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Centre for Economic Policy Research
90–98 Goswell Rd, London EC1V 7RR, UK
Tel: (44 20) 7878 2900, Fax: (44 20) 7878 2999
Email: cepr@cepr.org, Website: www.cepr.org

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ABSTRACT

Incentives in the Public Sector: Some Preliminary Evidence from a UK Government Agency*

This Paper evaluates the impact of a team-based incentive scheme piloted in the public sector agency, Jobcentre Plus. The way the scheme has been designed raises many questions for which theory makes predictions. We test these predictions against our data. We find that team size affects the impact of the incentive scheme upon performance. Moreover, while the measure of quantity increased in incentivized areas, no improvement was found for the two quality measures. This may reflect concerns related to multi-tasking issues, or may reflect the small sample size available for the quality analysis. Finally, the data suggests that employees participating in the incentive scheme aim to exert a level of effort to ensure the target is achieved, but as additional effort is not rewarded they aim not to exceed this limit.

Keywords: incentives, performance, public sector and teams

Simon Burgess
Department of Economics
University of Bristol
12 Priory Road
BRISTOL
BS8 1TN
Tel: (44 117) 928 8436
Fax: (44 117) 954 6997
Email: simon.burgess@bristol.ac.uk

Carol Propper
Department of Economics
University of Bristol
12 Priory Road
BRISTOL
BS8 1TN
Tel: (44 117) 928 8427
Fax: (44 117) 954 6997
Email: carol.propper@bristol.ac.uk

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Marisa Ratto
CMPO
University of Bristol
12 Priory Road
Bristol
BS8 1TN
Tel: (44 117) 954 6943
Fax: (44 117) 954 6997
Email: m.l.ratto@bristol.ac.uk

Emma Tominey
CMPO
University of Bristol
12 Priory Road
Bristol
BS8 1TN
Tel: (44 117) 928 9019
Email: e.tominey@bristol.ac.uk

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1 Introduction

In recent years an objective of many governments has been to improve public service efficiency. In particular, the current UK government has been driving the modernisation of the public sector. One method of achieving improved efficiency is through the introduction of financial incentives into the public sector, and this is now being implemented in the UK. However this policy initiative may be thought a little premature as it precedes much evidence of success or failure. A consensus from the theory¹ on incentives in organisations suggests that high-powered incentives may be a bad idea in the public sector context. However, a number of recent surveys have noted that the advance of theory has far outstripped the available evidence: see for example Prendergast (1999), Burgess and Ratto (2003) and Dixit (2002). This paper begins to fill the gap. We evaluate the pilot programme of financial incentives in a large UK public agency.

The agency, Jobcentre Plus, is one of the main government agencies facing the public; its role is to place the unemployed into jobs and administer benefits. In April 2002, a team-based financial incentive scheme was piloted in Britain², and we present some preliminary findings from an evaluation. We investigate whether the incentive scheme induced any change in the behaviour of workers in Jobcentre Plus and if so the mechanisms by which this was achieved. Did the team-based nature of the scheme improve morale or encourage free riding? The design of the incentive scheme incorporated a threshold, hence creating the potential for gaming. We also examine how workers respond to an explicitly multi-tasking environment – did effort focus upon the achievement of one target at the expense of another? Finally the relative task measurement and precision has implications for behaviour, as workers may choose to exert effort on the tasks for which their actions are more easily verifiable. The complex nature of the incentive scheme raises many issues for which theory makes predictions. We test these predictions against the data. The paper will progress as follows. Section 2 sketches the structure of Jobcentre Plus. Section 3 describes the incentive scheme operating within Jobcentre Plus, highlighting features particular to the scheme which are related to economic theory in section 4. The data

¹ Dixit (2002).

is discussed in section 5, the model in section 6, and the results in 7. Section 8 contains our plans to extend this preliminary research and section 9 some initial conclusions.

2 Structure of Jobcentre Plus

In recent years there has been substantial change in the organisational structure of Jobcentre Plus. Jobcentre Plus has now replaced the functions of two agencies: the Benefits Agency and the Employment Service. In June 2001 these two agencies became part of the Department for Work and Pensions in order to bring together their work. Further reorganisation followed which led to the redefinition of 90 Jobcentre districts (there were previously 126 districts). Conventional methods of delivering services changed and in October 2001 Jobcentre Plus was launched. Initially the change meant that 17 of the 90 districts became Pathfinder Districts, within which new Pathfinder Offices were created. In all 56 Pathfinder Offices were formed to offer an integrated service; combining the work of the original social security offices and jobcentres. Simultaneously, in April 2002 there was full replacement of the Benefits Agency and the Employment Service with Jobcentre Plus, the introduction of new PSA targets and the initiation of the pilot Makinson scheme within the 17 Pathfinder Districts. The pilot scheme ran for one year, during which time new Jobcentre Plus Offices were gradually introduced into the Pathfinder Districts. By 2006, new Jobcentre Plus Offices will operate in all 90 districts. Further structural change in September 2002 replaced the existing triangular hierarchical structure with a more decentralised organisation, whereby the Head and Regional offices make decisions and the districts are more operative.

The role of Jobcentre Plus is to help place people into jobs, to advise on training and to administer benefits. Britain is divided into 11 Jobcentre Plus Regions, within which are the 90 Districts; 17 are the Pathfinder Districts in which there is at least one Pathfinder office and 73 districts where we have Jobcentre offices (ex-ES) and Social Security offices (ex-BA). In total, there are approximately 1300 offices and 60,000 members of staff in Jobcentre Plus.

² This followed the recommendations of a report commissioned by the Public Sector Productivity Panel, Makinson (2000).

3 The Incentive Scheme in Jobcentre Plus

3.1 The Makinson Approach

The team-based incentive scheme designed for Jobcentre Plus is part of a programme to improve efficiency and productivity in the public sector. The idea of piloting such a scheme in public sector agencies dates back to the Makinson report (2000). The report emphasised the appropriateness of team-based rewards for public servants. Rewarding individuals based upon team performance fulfils the public sector criteria of stressing collective rather than individual achievement, encouraging competition not within offices but between offices. Furthermore, there are concerns that individual performance measures may reflect biases against women, ethnic minorities and part-time workers: concerns that are alleviated through implementing a team-based reward structure.

According to the Makinson report, the incentive payments should be funded largely from improved productivity and should represent at least 5% of base salary for all staff. To ensure that the incentives reinforce the strategic objectives of the organisation, the incentives should relate to targets already embodied in the Public Service Agreements (PSA) of the respective agencies. The Makinson report recommends that five targets should be the maximum for junior grades and eight targets the limit for more senior staff. With this in mind the incentive scheme for Jobcentre Plus was drawn up.

3.2 Jobcentre Plus Team-Based Incentive Scheme

The Jobcentre Plus team-based incentive scheme is rather complex and raises many questions for which theory makes predictions. This section explains the features of the scheme and then the following section links current theory on public sector incentive schemes to Jobcentre Plus.

3.2.1 Team-Based

17 out of 90 districts are the Pathfinder Districts, representing the teams. Operating within each of these are between 1 and 12 Pathfinder Offices and other Jobcentre Plus offices carrying out ex-ES and ex-BA duties. The number of offices within the team varies between 17 and 30 and the total number of people within a team varies between

500 and 2000. If a team successfully meets its target, every member of staff, in all offices within the team, receives the bonus. It is the district manager's responsibility to hit the Makinson targets.

3.2.2 Multiple Targets

The targets set to the Pathfinder Districts are the same as the annual Jobcentre Plus targets which apply to all 90 districts. However for Pathfinder Districts there is an additional 'stretch' to achieve. There are five Makinson targets: Job Entry, Customer Service, Employer Outcome, Business Delivery and Monetary Value of Fraud and Error; they are briefly described below.

Job Entry

This is based on a points system, which varies with the priority of the client. The higher the priority of the client, the more points are earned. Altogether there are five different points categories covering the range of Jobcentre Plus clients. For example, the placement of a jobless lone parent attracts 12 points, compared to 2 points for an unemployed non-claimant. Details are given in Appendix 1.

There are additional scores for

- Job entries in disadvantaged areas, defined on the basis of a high proportion of ethnic minorities or the poorest labour market status and low income (2 additional points), and
- Every Jobseekers Allowance client who remains off benefit 4 weeks after starting a job (1 additional point)

Pathfinder districts were grouped into two bands (A and B), based on the percentage of Pathfinder offices in the district. Band A contains up to 20% of Pathfinder offices and were allocated a stretch factor of 5%. Band B have more than 21% of Pathfinder offices and were allocated an extra 7.5% of the target.

As the job entry target measures the amount of work done by Jobcentre Plus employees, it is our proxy for quantity produced.

Customer Service

This target measures performance in meeting the standards and commitments in the Jobcentre Plus Customers' Charter and the Employers' Charter. Customer service is measured under four headings:

- Speed - How quickly staff answer the telephone, greet a customer, deal with customers on the telephone and face to face
- Accuracy - The accuracy of information staff give on the telephone and face to face
- Proactivity - How well staff understand customers' requests, anticipate their needs and how successfully the services are tailored to meet their individual needs
- Environment - The quality of the premises, facilities, and their accessibility and physical condition.

The target is divided in two key areas: service to clients and service to employers. Service to clients is measured against all four elements of Speed, Accuracy, Proactivity and Environment as all are included in the Customer Charter. For service to employers, the Environment element is not measured because relatively few employers visit the offices.

The table below shows the proportion of the total Customer Service target allocated for each of the four service elements for both clients and employers.

Service Element	Clients	Employers
Speed	25%	33.3%
Accuracy	25%	33.3%
Proactivity	25%	33.3%
Environment	25%	Not applied to employers

Information on performance against this target is collected by independent research companies.

For the client service component, performance is measured via a *mystery shopping* approach. This consists of a quarterly programme, where the assessors use a variety of techniques to measure all the single elements of the target. In particular, they go into Jobcentres Plus Offices, acting out the role of a customer (a Scenario Visit). Assessors also go into Jobcentre, Social Security Offices and Jobcentre Plus Offices,

to assess the environment in which services are delivered (Environmental Assessment). Mystery shoppers telephone Jobcentres, Social Security Offices, and Jobcentre Plus Offices, to see how quickly they answer the telephone and how well they answer a given scenario (Telephone Timing, Telephone Scenario).

For the employer measure, another independent contractor is responsible for measuring the single elements. This is done through a survey, in the form of an employer telephone questionnaire.

The service to clients' elements count for 75% of the customer service target and the service to employers counts for the remaining 25%.

Performance against the Customer Service target is used to proxy the quality with which Jobcentre Plus employees perform.

Employer Outcome

This is monitored as part of customer service. It measures:

- Resolution: if the vacancy was filled
- Response: if the vacancy was filled in a time scale that met the employers' needs

The former element constitutes 75% of the target and the latter element constitutes 25% of the target.

Information on performance is collected by an independent research company who telephones a random sample of employers notifying vacancies to Jobcentre Plus.

Business Delivery

This measures performance in 5 key Jobcentre Plus processes.

Key Process	What is Measured	How it is Measured
Income Support (IS) Accuracy	Processing of IS claims is compliant with accuracy requirements and standards	Full claims check of a sample of cases by specialist teams.
Jobseeker's Allowance (JSA) Accuracy	Processing of JSA claims is compliant with accuracy requirements and standards (including Jobseeker's Agreements)	Full claims check of a sample of cases by specialist teams.
Labour Market Interventions	Booking of advisory interviews, including the mandatory New Deals. Action to follow up failure to attend Jobcentre Plus mandatory interviews or employer interviews complies with timeliness requirements	Sample of cases reviewed regionally by Jobcentre Plus checkers. Performance measured using a graduated system of points scores.
Incapacity Benefit medical Testing	Decisions made following a medical testing intervention to comply with evidence and timeless requirements	Cases assessed for timeliness requirements through IT system, which produces monthly data. Accuracy of medical test decisions measured by a sample of claim checks by specialist teams.
Basic Skills Screening (identify people in certain client groups who have literacy, language and numeracy skill needs)	Long-term JSA claimants and participants in the voluntary New Deals are screened for literacy, language and numeracy skill needs in accordance with specified requirements	Cases checked through the Labour Market System

Performance in each of the 5 Business Delivery target categories is measured against a single national target, expressed as a percentage. Performance is measured by taking an average of the results for all the 5 categories, each contributing 20% to the overall score.

Monetary Value of Fraud and Error.

This is to reduce the money lost in Income Support and Jobseeker's Allowance payments caused by

- mistakes made by customers
- mistakes made by staff
- customer fraud

The Benefits Agency has had this target since 1998. The long-term aim is to reduce overall losses by 25% by 2004 and by 50% by 2006.

Two specialist teams measure MVFE. They visit each district 3 times a year. The 6 largest districts are treated as 2 districts for this purpose and are visited 6 times a year. During each visit the teams examine a specified number of randomly selected sampled IS and JSA cases. For this target all 17 Pathfinder districts are grouped together.

3.2.3 Threshold Nature

Each of the five targets carries a 1% bonus for each team member, calculated on their basic salary. The District must hit at least two targets to get any bonus and if all five are reached there is an extra reward equal to 2.5% of basic salary.

3.2.4 Measured at different levels of the hierarchy

Although reward for achievement of the Makinson targets is at the District level, the targets are measured at different hierarchical levels and in different periods. The job entry targets are recorded for each office on a monthly basis. The Customer Service and Employer Outcome targets are both measured at the district level and are recorded quarterly. Outcomes for the five elements of the Business Delivery target are also measured at district level. The timing for which the outcomes are recorded varies for the different elements. Interim figures for two out of the five elements are measured monthly and the other three elements are recorded every four months. For the purpose of the Monetary Value of Fraud and Error target, a 'virtual region' defines all 17 Pathfinder Districts and performance against the target is measured annually.

4 Theoretical Issues relating to the design of the incentive scheme

The design of an optimal incentive scheme is a complex matter. The nature of the organisation, the size of the team, the measurability of output, the multidimensionality and the nature of tasks are all elements to be considered in the design of team-based incentives and in any evaluation of a scheme. In what follows we consider the implications, as suggested by the economic theory, of the way the scheme has been designed at Jobcentre Plus.

Teams very broadly defined

The definition of a Makinson team is very broad, including all offices within a given district, and being formed by up to 2000 people. The team is simply created by the reward system, whereby individual rewards depend upon the performance of the whole district. There is no production function identifying the team: whilst staff interact within offices, there is little need for interactions between team members located in different offices and carrying out their tasks independently. Such a broad definition of teams makes it hard for team members to identify with their teams. There are likely to be consequences, in the form of a significant free rider problem. Holmstrom (1982) provides one of the seminal contributions to the theory of incentives in teams and shows that a negative externality can be created in an environment in which output is fully shared among team members. The intuition is that in such a setting, when an agent decreases her contribution, the value of total output will decrease and the sum of all agents' shares will decrease. Hence the agent who cheats will not pay in full for the consequences of her act. The cost of one person's shirking (in terms of the share of lower joint output) will be passed onto others. The private marginal cost of shirking will be less than the social marginal cost (borne by all members of the team) and the level of effort chosen by the individual will be lower than the Pareto efficient level. This free-rider problem becomes more difficult to tackle the greater the uncertainty in output measurement and the greater the size of the team.

In the case of a team as defined for Jobcentre Plus the free-rider problem might be quite substantial given the difficulty for each team member to easily identify their personal contribution to the output of the team. Moreover, we expect to observe a weaker impact from the Makinson scheme as the team size increases.

Multi-tasking

Jobcentre Plus is a complex organisation and staff are required to deliver a range of outcomes. Economic theory suggests that this has an important impact on the incentive scheme. In particular, if the different performance measures are substitutes, the use of high powered incentive schemes may have undesirable effects upon overall performance. Exerting more effort on one task increases the marginal cost of any task that is a substitute and agents may focus their efforts upon one or a few tasks to the neglect of others. In this case each outcome cannot be rewarded in isolation and the principal should use lower incentives (Holmström and Milgrom, 1990, 1991).

An interesting case related to this situation is when activities are substitutes from the perspective of the agents (more time spent on one activity means less time on others), but they are complements from the perspective of the principal (the principal wants high performance in all of them). Hence the agent is willing to devote more time to the less difficult activities, whereas the principal prefers him to devote time to all activities. This situation is analysed by Marx and MacDonald (2001). They show that, if the principal is unsure about the agent's preferences over tasks, setting rewards on success on individual tasks may be suboptimal in that it may induce workers to focus and specialise in the less costly tasks.

The targets set for JCP concern tasks which are related to each other. Good performance in the Customer Service target may have spillover effects on the Employer Outcome and the Job Entry targets; as understanding well the customers' requests, meeting their individual needs and giving them accurate information (the proactivity and accuracy elements of the Customer Service target) may speed up the process of filling vacancies (the response element of the Employer Outcome target), and facilitate the creation of job entries. So for these targets, more effort on one task means greater performance also in another task. In contrast, more time spent on income support or jobseekers' claims leaves less time to be devoted to the creation of

job entries: hence there is a possibility of negative interdependencies between the Business Delivery target and the Monetary Value of Fraud and Error target and the remaining three targets: Job Entry, Employer Outcomes and Customer Service targets.

Another important aspect to be considered in a multi-tasking situation is how the different dimensions of output can be measured. The prediction of the standard models on moral hazard when output is measured with error is that low powered incentive schemes should be used when the different outcomes are measured with different errors. If each outcome could be rewarded in isolation, then the optimal incentive scheme would set higher incentives on the more easily measurable outcomes - as they provide a more accurate indicator of the effort exerted by the agent. However, in a context where there are multiple dimensions of output, this would make the agent concentrate on the tasks which are more accurately measured. Therefore the principal has to weaken the incentives on the more accurately measured tasks.

As mentioned above, the Makinson scheme measures performance against five targets; which combine different elements of observation. Some of the targets relate to outputs that are very difficult to measure. For example outcomes of the Customer Service and Employer Outcome targets rely upon surveys and a mystery shopping approach and the Business Delivery target is measured by random samples. Performance against these is measured at district level, so that the contribution of a single office towards these targets may not be easily distinguished and the precision of measurement may be quite poor. The measurement of the Monetary Value of Fraud and Error target is even more difficult as there is only one measure for all teams participating in the Makinson scheme. Consequently we might expect to see a possible allocation of effort in unintended directions, more focussed on those activities which are most easily measured and for which the individual contribution to aggregate output is clearer. In particular we expect to see a focus of effort upon the target with the largest sample size: the Job Entry target.

Non-linear reward scheme

Each of the five targets carries a 1% bonus. So equal weight is attached to all five targets for bonus payment purposes. At least two targets must be reached to get any bonus, and if all 5 are reached there is an extra 2.5% of basic salary. Given the

difficulty of relating one's effort to measured performance, and given that team bonuses are paid whenever two targets are hit, we can expect to observe gaming. Offices may focus their attention on a few targets in particular rather than aiming for full success of hitting all five targets. Additional performance beyond the target will not be compensated, therefore workers will rationally aim to just hit the target, not achieving any more of less than the target level of output.

Measures of performance at one level and rewards at another

Effort on job entries is undertaken and measured at office level. But the bonus relates to the targets set at district level. If targets are hit at district level, all offices in that district will get the bonus. If some offices do not hit their targets but at district level they are met, they still get the bonus. This may lead to free riding behaviour.

In summary, applying economic theory to the incentives scheme designed for Jobcentre Plus, we expect to find an effect of team size on effort and output (free riding), an effect of differential measurement precision on effort and output and 'bunching' of outputs around the threshold.

5 Data

Before describing the data available to address the above issues, we clarify some definitions. The offices within the districts which are participating in the pilot incentive scheme will be referred to as Makinson offices and offices within the remaining non-participating districts non-Makinson offices. The Makinson offices, for which the services of ex-ES and ex-BA duties have been integrated are classified as Pathfinder offices. The remaining Makinson offices are non-Pathfinder offices.

The teams identified in the incentive scheme, the Pathfinder Districts, will be referred to as Makinson districts.

For the evaluation we interpret administrative data from Jobcentre Plus. Management information data records performance against the five targets and personnel data provides detailed information on staff. We were provided with the postcodes for every Jobcentre office in Britain, enabling us to merge information on external labour

market status from NOMIS³ and information on public and private sector wages in Britain from the Labour Force Survey. Using this data we derive the production function for Jobcentre Plus as follows. Outputs are measured by the quantity produced by workers and the quality of production. Job entry points achieved for each office on a monthly basis are the measure of quantity and the Customer Service and Business Delivery targets proxy quality. The quality outcomes are reported for each district on a quarterly basis. There are two inputs in the production function. This is a predominantly human capital intensive organisation, hence data on the number of staff for each grade within the offices is one input, recorded monthly. We use two classifications of staff: the total number of staff and a 'narrow' definition of staff, which simply adds staff from two grades, Administrative Officer (AO) and Executive Officer (EO). The number of staff in these two grades are highly correlated with each other (there are roughly one EO to two AOs) and it would therefore induce a high degree of multicollinearity to include the numbers of staff in each grade. Also the Makinson scheme incentivises actions which are carried out on the front line, and so it makes sense to focus on lower grade staff performing these duties. The second input in the production function is the Pathfinder status of offices. On the one hand Pathfinder offices have the potential to improve productivity of the workers, as they underwent refurbishment and new technology was installed. Hence we could expect an increase in output for offices with Pathfinder status. However, the Pathfinder offices were also subject to restructuring in which the managers had to oversee the convergence of ex-ES and ex-BA offices. It is estimated that Pathfinder offices took at least five months to adjust to the roll out during which time the performance decreased. The Pathfinder offices were created by October 2001, therefore by the start of the incentive scheme in April 2002 the process of readjustment should have been completed. Nonetheless we should expect stronger effects from the incentive scheme to appear later on. Indeed, it is worth noting that although Jobcentre Plus employees were informed about incentive scheme in April 2002, they did not know the targets until June 2002.

One complicating feature in the present context is that the main output of Jobcentre Plus – job entries – is dependent to quite a strong degree on outside factors. The strength of the local labour market has been shown to matter a great deal in influencing flows out of unemployment, and so it seems likely that it will affect job

³ National Online Manpower Information Service, <http://www.nomisweb.co.uk/>.

entries. We measure this in the following way. Using the postcode of the Jobcentre Plus office, we locate it in a Travel To Work Area (TTWA98). We then extract claimant inflow and vacancy inflow data from NOMIS for each TTWA and for each month. We use the inflow data rather than the stock data, as the stock data will be endogenous for the efficiency of the office. The inflow partly represents the task facing the office, and partly is a good proxy for the stock. It could be argued that the inflow itself will be endogenous – an efficient office encourages more vacancies to be advertised in it – but we believe this is likely to be second order. In any case, we repeat our analysis with just the claimant inflow. The labour market status information was available at a monthly level and related to travel to work areas (TTWA98), which we matched to the individual offices using office postcodes.

This evaluation is preliminary as to date we have received full administrative data for the period covering April 2002 -December 2002. Data for the final quarter of the pilot incentive scheme and indeed for the following year, April 2003 - March 2004 will become available and we will extend the analysis. So although we do not have access to historical data for Jobcentre Plus to be able to implement a standard difference-in-difference approach to evaluation , we will be able to adopt a “backwards” difference-in-difference approach.

6 Model

Jobcentre Plus has a multi-level set up which we will exploit in future analysis. For now, our approach is based on economic models of production where staff can apply more of less effort to raise output. The incentive scheme is meant to raise effort and so output. Economists have modelled precisely the sort of threshold schemes used in Jobcentre Plus. So output will depend on the number of people working, on the equipment, and their effort. The latter is unobservable to us, but is assumed to depend on the presence of the incentive scheme. This is the hypothesis we test here: after controlling for as many other factors as we can observe, any remaining difference between the scheme and non-scheme districts is due to the effects of the incentive scheme itself. We undertake this analysis in two stages. First we run the following regression over the whole period to isolate an office average effect.

$$y_{odi} = (\mu_o + \Delta_d + \pi PFS_o + \gamma M_d) + \beta X_{ot} + \alpha Z_{ot} + \delta_t + v_{ot} \quad (1)$$

where y is total job entry points (tjep), X is a staff variable, and Z is a labour market variable. We allow for an office effect μ , a district effect Δ , and effects from PFS – Pathfinder office status – and M – Makinson district status. Finally, δ is set of a time dummy, and v is random noise. The key parameter of interest is γ – the effect on output of the Makinson incentive scheme.

Note that given the current data setup, a fixed effects regression on (1) above will identify α , β , δ , and ϕ_o where:

$$\phi_o \equiv \mu_o + \Delta_d + \pi PFS_o + \gamma M_d \quad (2)$$

That is, we cannot separately identify the parameter γ . This is because as yet we do not have any time series variation in Makinson status; that is, we do not have a difference-in-difference set up. Note that office mean size and office mean labour market conditions will also be captured in ϕ_o . So we run (1) as a fixed effect regression on all offices with some job entry points. This yields a distribution of estimated ϕ_o values, one for each office.

For the second stage, we use the calculated average for each office and compare the distribution of ϕ_o across offices included and excluded from the Makinson incentive scheme. The office averages capture information necessary to understand the mechanisms which may drive the incentive scheme to succeed or to fail. They depend upon the average size of the office (staff), the average labour market conditions, Pathfinder office status, Makinson district status and other unobservable characteristics of the office. It is therefore necessary to adjust for the first three of these before we attempt to isolate the Makinson effect. However it must be noted that without either a clear random assignment of districts to Makinson status, or a proper difference-in-difference set up, any effects might be attributable to correlation of the unobservable characteristics of the office and Makinson status: characteristics driving efficient outcomes may also be correlated with Makinson status. Alternatively if districts with more challenging labour markets were more likely to be included in the pilot scheme, then we will underestimate any effect of the scheme.

There are other techniques that we can bring to bear on this problem given more time, propensity matching for example, as well as utilising a difference-in-difference approach as the next year of data becomes available.

7 Results

The reduced form model evaluates the impact, if any of the scheme on outputs, bearing in mind issues relating to teams and multi-tasking. We look first at quantity outcomes (job entries) and then quality.

7.1 Quantity

The number of Job Entry points achieved by each office is our measure of output. We evaluate whether the Makinson team-based incentive scheme induced a change in behaviour which resulted in an increase in output. Tables 1 to 4 report the first stage regression results. In table 1 and 3 OLS regression analysis identifies the variation of job entry points over offices and over time. The Fixed Effect regression analysis results show the variation in job entry points over time and are reported in table 2 and 4. The second stage analysis then isolates the office level impact upon job entry outcomes. The dynamics of the office level effects are explored in tables 5 to 10 and the true Makinson effect is calculated.

7.1.1 First stage

The dependent variable for tables 1-4 is the log total job entry points. As economic theory suggests no obvious way of modelling the labour market conditions and the relationship between job entry points and staff, we allow the data to influence our results. Firstly table 1 and 2 look at various ways of modelling labour market conditions. Our two labour market variables are claimant inflows and vacancy inflows. The claimant inflow data is available for the whole evaluation period and measures both the “raw material” of Jobcentres (so might be expected to positively influence job entries) but are also a proxy for the state of the local labour market (and hence would have a negative impact). The vacancy inflow data is available only from June 2002, hence two months of evaluation period is lost from the start of the scheme, however as noted above these months were before the workers were fully announced to the staff. Vacancy inflows represent a partial measure of jobs available

to secure a job entry and will therefore have a positive effect. If we want to normalise the flows to principally capture time series variation, we can use local (TTWA) population, but this data is only available for England and Wales. So the columns are not directly comparable as they are estimated on slightly different datasets.

We find significant effects of the local labour market on job entries. In all cases, vacancy inflows take the expected positive sign. The sign on claimant inflows varies between specifications, but in the fixed effect regressions is always negative – reflecting a worsening labour market. We show below that the office average effect of claimant inflows is positive, which is intuitive as the long run average is a measure of the amount of inflow JCP staff have to work with. The OLS regressions combine both effects and so are positive in some columns in table 1. In column 4 we adopt a specification that takes the log ratio of vacancy inflows to claimant inflows. This normalises the variables without restricting the sample to England and Wales, has support from the literature on matching functions, is accepted by our data and is the specification adopted for the analysis. Our results show that a worsening labour market makes it harder to secure job entries. This in turn makes it harder for staff to achieve their targets and earn bonuses. The size and significance of the effect shows the risk factor that staff bear is non-trivial.

Turning to the staff data in table 3 and 4, as noted above, we take as our staff measure the sum of the number of EOs and AOs in the office, staff-in-post and casuals. This is highly correlated with any other sensible measure of staff, so we are confident that it captures the true labour power available to office managers. For functional form, we tried a simple linear model, a quadratic model and a log linear model.

Almost all of the variation in staff is across offices and very little over time within an office. Therefore we expect the coefficients to be very different between the OLS and the fixed effect estimation, and the tables bear this out. We find a very strong effect of staff in the OLS, but very little in the panel analysis because it is simply absorbed by the fixed effect. The specification in column 3 of table 4 (or column 4 in table 2) is adopted for our evaluation, hence the regressions explain around half of the overall variation in job entries. It is worth noting that there are strong seasonal effects for job entry outcomes.

We extract the estimated office effects, and subject these to analysis. Note that these necessarily have mean zero, but we adjust them by adding back the grand mean to ensure they have the same mean as the equivalent raw data.

7.1.2 Second stage

The office effects are average office job entry points after allowing for differences across offices in staff, local labour market conditions and seasonal effects. Table 5 shows the mean and dispersion of these effects and figure 1 gives the full distribution. The figure shows some large outliers at the left tail of the distribution, but otherwise the pattern is reasonably normal. The table also shows some preliminary unconditional comparisons across different office and district types. Figures 2 to 4 present the whole distributions for these comparisons. Comparing offices in non-Makinson districts with non-Pathfinder offices in Makinson districts is close to a like-with-like comparison, and we see that the offices effects are fairly similar in the two types of district, with the former being slightly higher. Pathfinder offices are clearly associated with lower mean job entry figures. However the median and 3rd quartile of Pathfinder offices achieve the highest job entries, evidence that although on average the Pathfinder offices underachieve, those that perform well, outperform all other offices.

Figure 1: Distribution of Office Fixed Effects (Adjusted mean log TJEP)

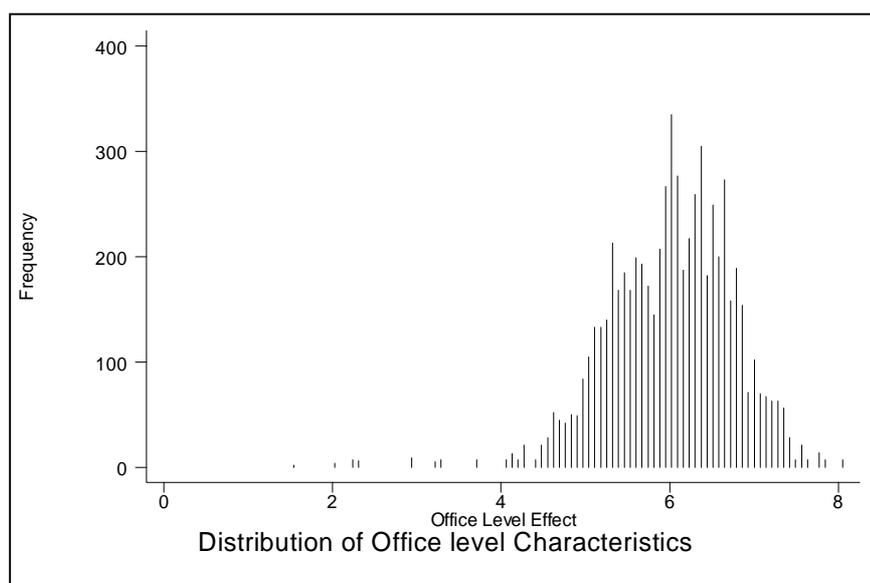


Figure 2: Distribution of Office Fixed Effects (Adjusted mean log TJEP) – by Pathfinder Office Status



Figure 3: Distribution of Office Fixed Effects (Adjusted mean log TJEP) – by Makinson District Status



Figure 4: .. Distribution of Office Fixed Effects (Adjusted mean log TJEP) – by Pathfinder and Makinson Status



Table 6 takes things a little further. Splitting the sample by office size and labour market conditions we present data means again for a comparison of Pathfinder Office and Makinson district status. We see that for small offices non-Pathfinder Makinson offices perform similarly to non-Makinson offices while for larger offices, the non-Makinson offices do better. There appears to be little difference by labour market conditions. However, these comparisons do not allow for other factors so we turn to regression analysis of these office averages to unravel the effect of different factors. Before that, note the differences between the characteristics of offices in Makinson and non-Makinson districts. Table 7 shows that offices in Makinson districts are slightly bigger, less likely to be a District (“HQ”) office, have marginally worse labour market conditions and are slightly more numerous per district.

Our main regression results are presented in tables 8 and 9. We start with basic explanatory factors in column 1 of table 8. Big offices (defined in terms of staff) produce more job entries; offices in labour markets with a lot of claimant inflows on average produce more job entries (note that the labour market variable is vacancy inflows/claimant inflows so a negative sign on the variable means a positive relationship with job entries). These are both as expected. Offices having the status of a District Office yield more job entries holding all else constant. A Pathfinder office produces significantly fewer job entries than an otherwise equivalent office⁴. The key variables we are interested in are the Makinson variables. Column 2 shows that being in an incentivised district has an insignificant effect on job entries. However, after allowing for heterogeneity of response by including an interaction of Makinson status and office size (column 3), we find a significant Makinson effect. Makinson has a positive effect that declines with office size. This effect fits our predictions from the economic analysis presented above. Our interpretation is that bigger offices face a greater free-rider problem and so the incentive payment is less effective in eliciting higher effort. In column 4 we add a variable that measures the number of offices in the district⁵, and allow its effect to differ in Makinson and non-Makinson districts. It has no effect in the latter and a negative effect in the former. This also has an interesting interpretation. It suggests that there is little interaction

⁴ This is presumably because staff in these offices are performing benefits-related activities as well as job entry tasks; it may also reflect the transitional disruption to the new status.

⁵ These are offices with positive job entries – not all JCP offices.

between offices in non-incentivised districts, but that it is attempted in incentivised districts. The interaction is however far less effective in districts with many offices. We examine whether the number of high grade staff in the office has any independent effect but it appears not to. Finally using regional data from LFS, column 6 indicates an adverse job entry effect from a private-public wage premium. The intuition is that private sector wages in affluent areas are higher than in less affluent areas. For public sector wages, the same is true but the difference will be smaller. Therefore it is likely that in the affluent areas, high ability workers will be seduced by higher wages into the private sector and a high private-public wage premium represents lower skilled staff in public sector jobs. Deleting insignificant variables, we end up with the preferred specification in column 7. This regression explains about half of the variation between offices, and shows significant and heterogeneous effects from the incentive scheme.

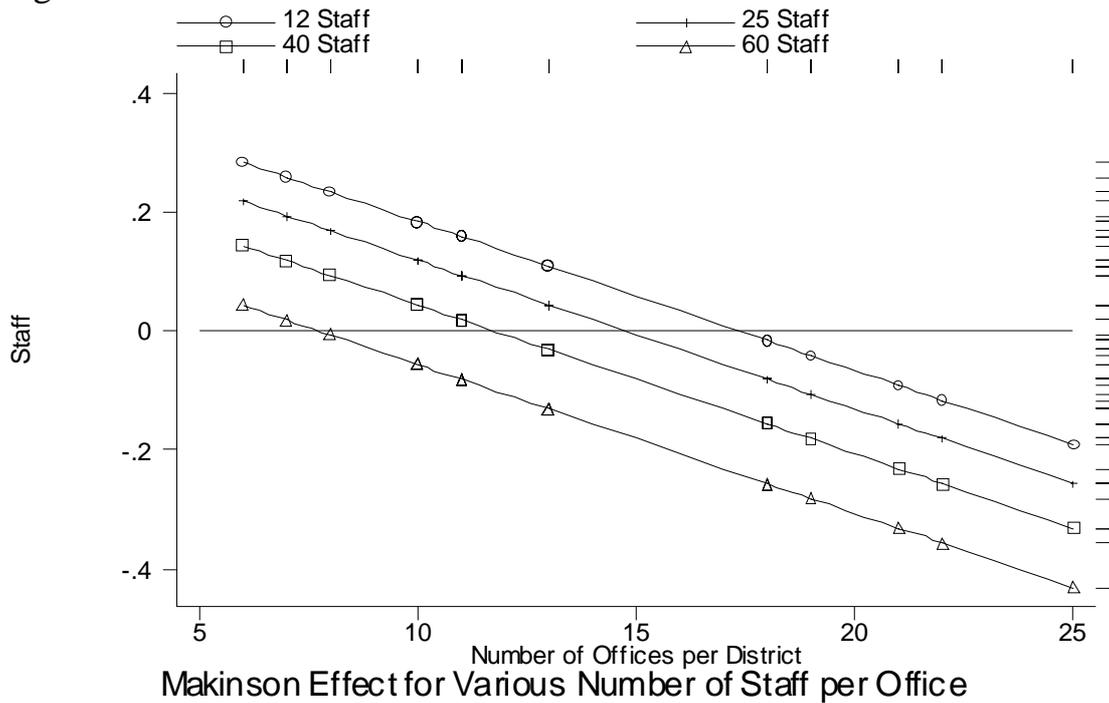
Inclusion of vacancy inflow as our choice of labour market variable could lead the labour market variable to be endogenous. To ensure this is not the case we conduct the above regressions on the fixed effect using just claimant inflow. The results, detailed in Appendix 2 show no major change, either in the magnitude or significance of the variables upon the office fixed effect.

7.1.3 Size of Office

The different effects of the scheme by size are interesting and important to the design of the scheme. We therefore pursue them in a little more detail. Column 1 of table 9 breaks the effect up into different office size bands. We find that the effect of the scheme does not decline monotonically with size, but the impact is roughly constant until about 60 members of staff (this is AOs + EOs). In columns 3 to 4 we aim to identify the cut-off point at which the costs from free riding exceed benefits from a team-based incentive scheme. We tried cut-off points of 40 and 50 members of staff, but the data prefer a cut-off of 60 staff. We present our final preferred specification in column 6. This implies that the incentive scheme has an effect in offices up to size 60, and no effect thereafter. The Makinson effect declines with the number of offices in a district. These results are reinforced by figure 5, which plots the Makinson effect for various numbers of staff per office against the number of offices per district. It is clear not only that the Makinson effect is decreasing in the number of offices per

district, but that this negative effect has far greater magnitude for large offices. To get some feel for the importance of this, note that of the offices in the final regression, 847 out of the 942 are below 60, and 70% of staff (as measured by AO+EO measure) are in such offices; 183 out of 217 Makinson offices (59% of staff) are below this cut-off.

Figure 5

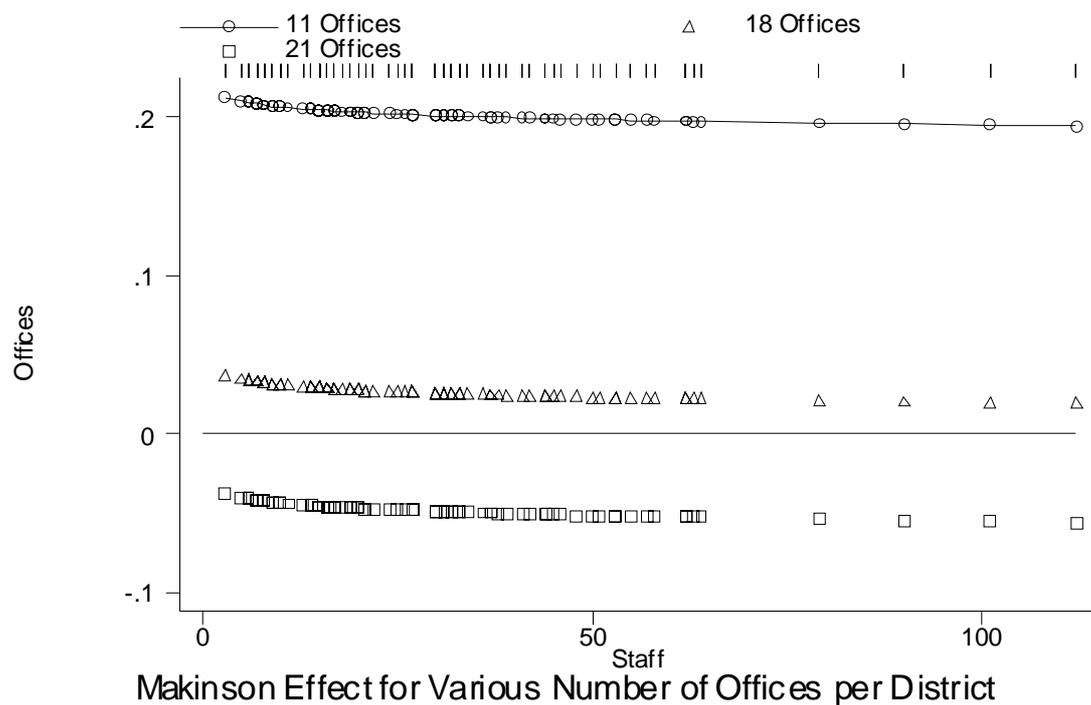


7.1.4 Size of Team

Across teams, or districts, the number of offices and staff varies substantively and it is therefore interesting to evaluate the Makinson effect for various team sizes. The number of offices within Makinson districts varies between 6 to 25, so we include an interaction of Makinson status and the number of offices, divided into groups accordingly. Column 1 of table 10 reports that relative to small districts (6-10 offices) large offices have lower job entries, although the results are not statistically significant. The cut-off point is approximately 21 offices. Figure 6 shows that although the Makinson effect is positive for districts with 11 or 18 offices per district, it is always negative for districts with 21 offices. Similarly, the number of staff per team affects the performance against the Job Entry target. The results in column 2 shows that, relative to small districts (defines as less than 364 staff members) large districts have negative job entry points and in column 3 we see that any district

smaller than 771 staff will have greater output, relative to the larger offices. Therefore for small teams, the incentive mechanism encouraging an increase in output has stronger effects than the free rider problem. However as the team increases in size this is no longer the case and the incentive scheme will not succeed in raising output.

Figure 6



We can use these estimates to calculate the expected gain from the incentive scheme. We compute the percentage gain for each district (for offices with less than 60) as: $100 * ((\exp(0.308 - 0.014 * \#) - 1))$, where # represents the number of offices in that district, and the coefficients 0.308 and 0.014 (this is 0.019 for Makinson districts minus 0.005 for non-Makinson districts) are taken from column 3 of table 9. This produces a conservative estimate and will if anything understate the effect, compared to column 6. The results of this are in table 11. Districts with few offices show a substantial gain. We expect that the districts with 15 or fewer offices per district to achieve their stretch targets; the others may struggle to do so, because of having more large offices, and many offices per district.

It needs to be re-emphasised that these estimates are only unbiased if the original assignment of Makinson status to districts was random. To the extent that that is not true, we may simply be picking up the effect of another characteristic that raises job entry performance and is correlated with the assignment process.

7.1.5 Performance relative to the targets

We can analyse how the targets set during the year relate to job entry patterns, but only for the Yorkshire and Humberside region where we have data on targets at monthly level. Calderdale and Kirklees is the only Makinson district within Yorkshire and Humberside and we analyse how performance in this district compares to performance of the other nine districts in the region. In particular we analyse the difference between actual performance and the target set.

Figure 7a cumulates the difference between actual performance and targets over time, from April 2002 to December 2002. Whilst Hull consistently performs at the highest level and Barnsley and Rotherham the lowest relative to the targets, the performance of the Makinson district is average.

We then focus on the Calderdale and Kirklees district, selecting the three job entry client groups which this district was concentrating on and compare the change in behaviour over time with the other districts. The purpose of this analysis is to gauge whether there is any difference in the behaviour of the Makinson district over time, with regard to its ability to hit the Job Entry target compared to the non- Makinson districts. The highest number of job entries were achieved for the Non Claimant, Short Term Unemployed and Employed categories. For clarity, the districts are divided into groups which perform similarly and then compared to the Makinson district.

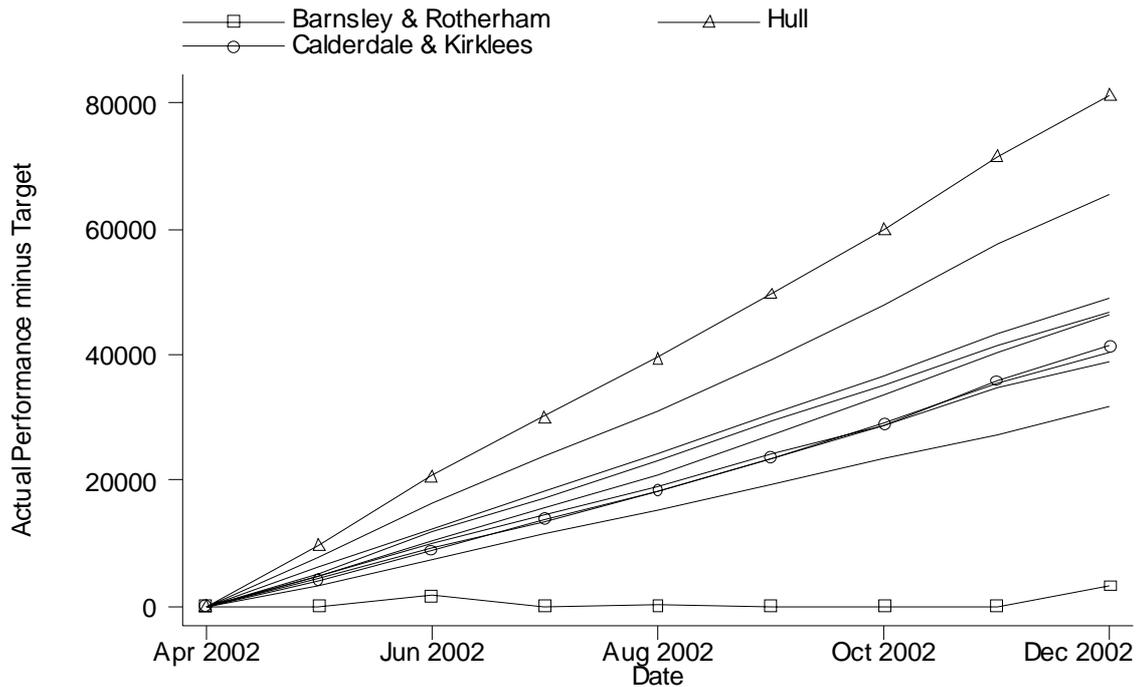


Figure 7a: Cumulative Total JE Score

7.1.6 Non-Claimants

Comparing against districts which display most volatility, shown in figure 7b and 7c, Calderdale and Kirklees seems better managed as it produces more consistent results: the difference between actual performance and the targets moves closely around zero. Hull's behaviour, for example is more erratic in terms of its job entries. Figure 7d shows that the behaviour of Calderdale and Kirklees more closely resembles the districts displaying less variation in performance: Leeds, Bradford and Sheffield.

7.1.7 Short-Term Unemployed

At first glance there seems to be a tendency for the Makinson district to under-perform, relative to the target. However it is also worth noting that, compared to Barnsley and Rotherham whose performance wildly fluctuates from one month to another, the Makinson district behaves consistently. In figure 7g the difference between actual performance and the targets, whether positive or negative, is lower than in the other two figures, and again the performance within Calderdale and Kirklees closely maps the targets set.

Figure 7b – 7d: Performance over the year to date, Yorkshire and Humberside: Non Claimants

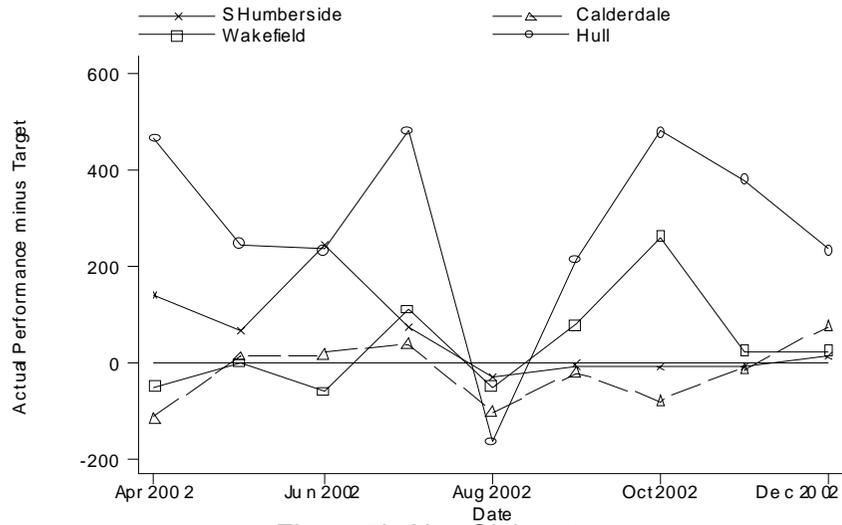


Figure 7b: Non Claimants

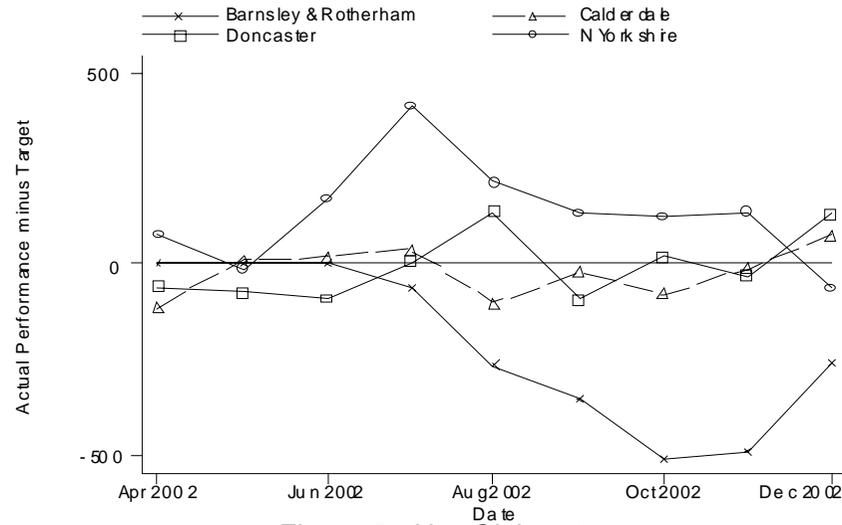


Figure 7c: Non Claimants

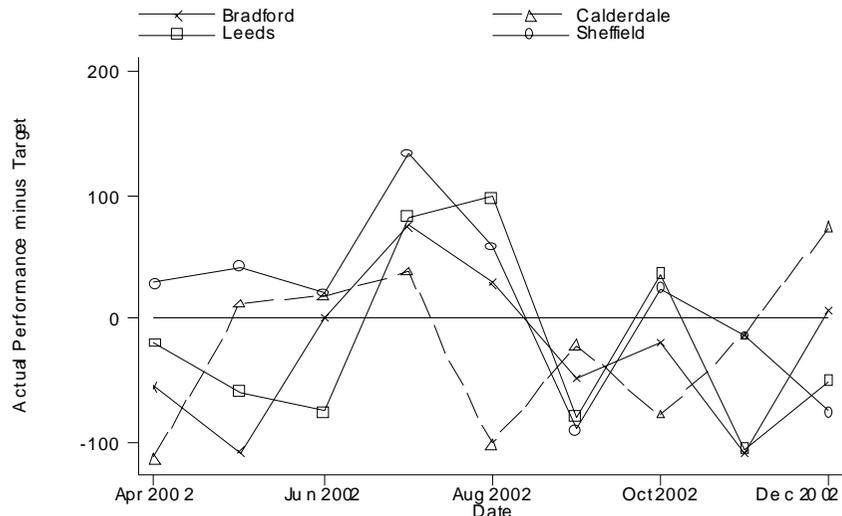


Figure 7d: Non Claimants

Figure 7e – 7g: Performance over the year to date, Yorkshire and Humberside: Short Term Unemployed

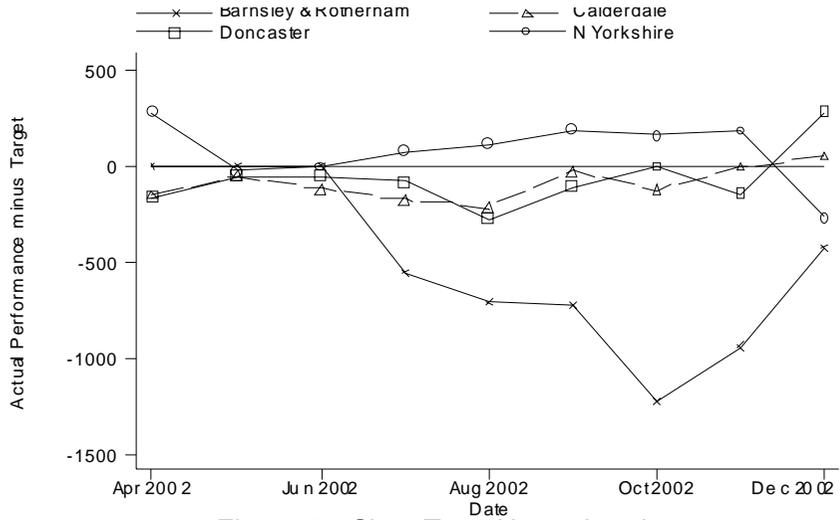


Figure 7e: Short Term Unemployed

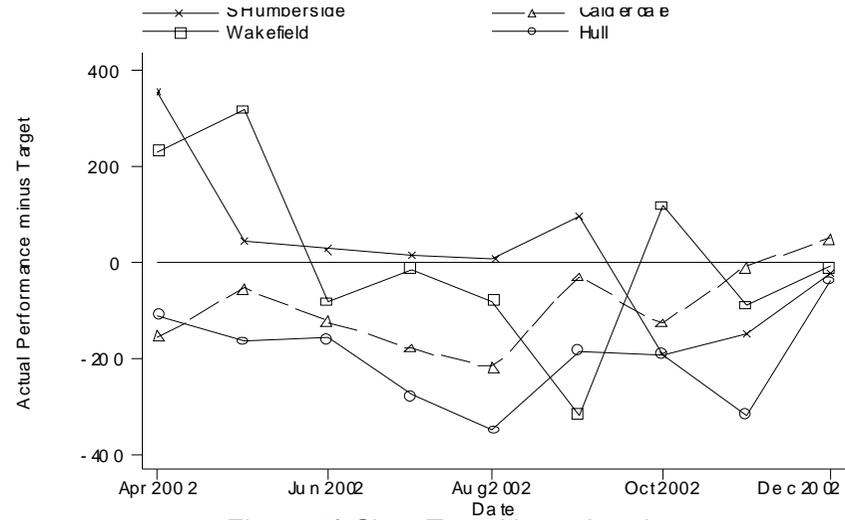


Figure 7f: Short Term Unemployed

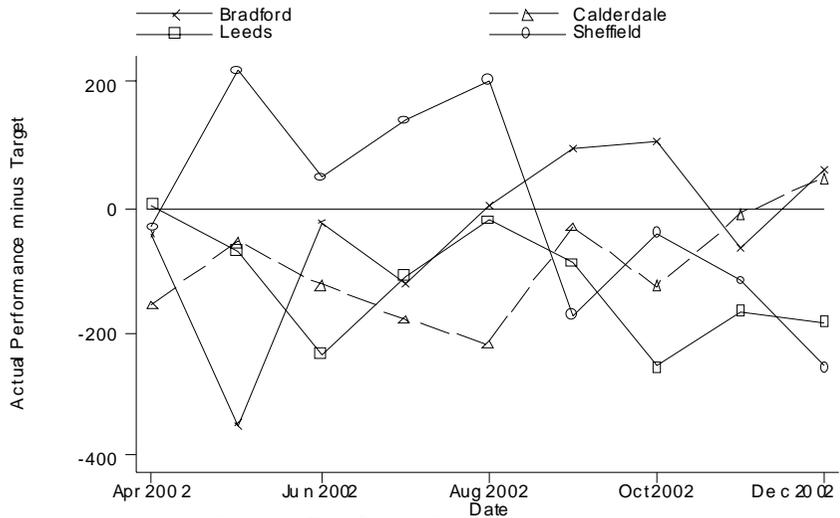


Figure 7g: Short Term Unemployed

Figure 7h – 7j: Performance over the year to date, Yorkshire and Humberside: Employed

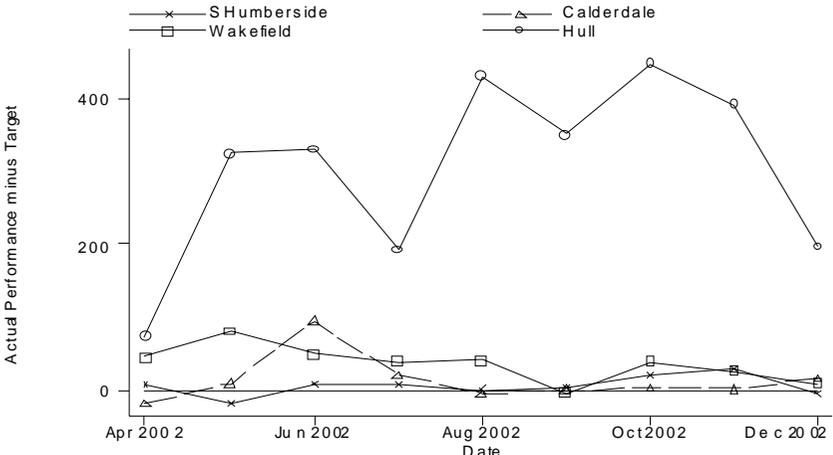


Figure 7h: Employed

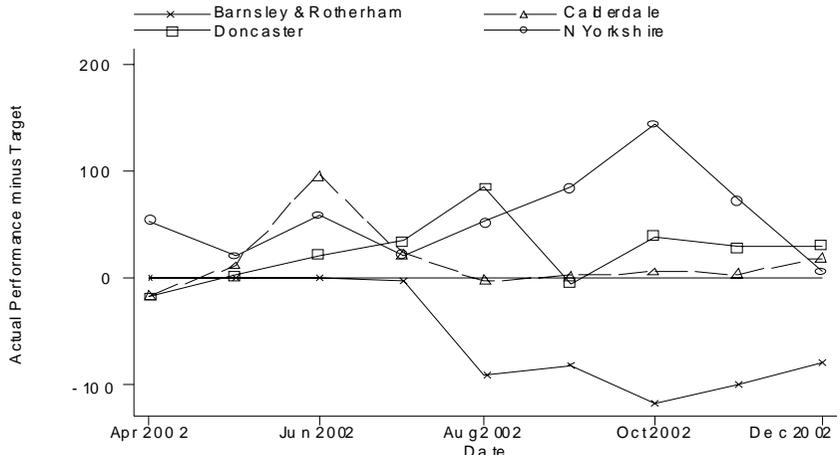


Figure 7i: Employed

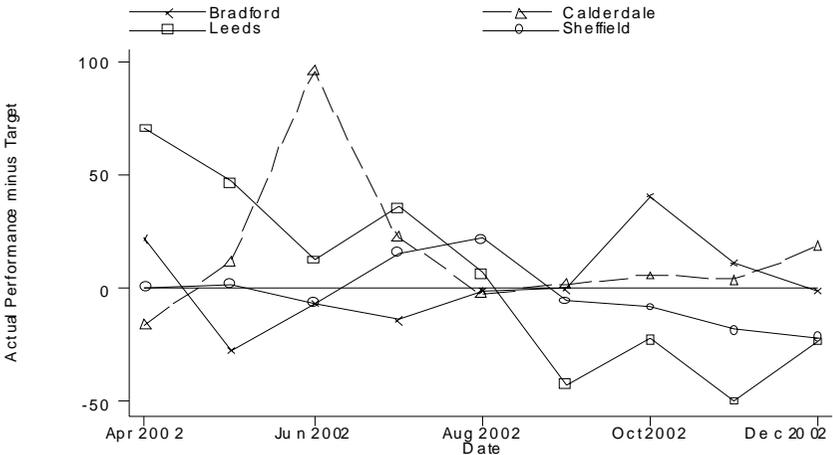


Figure 7j: Employed

Figure 7b – 7j: Performance over the year to date, Yorkshire and Humberside

7.1.8 Employed

The achievement of Employed job entries relative to the target is close to zero for all months in the Makinson district; more so than in other districts.

Comparing actual performance against targets, the district participating in the incentive scheme exhibits less volatile performance: actual performance remains close to the targets. This is not surprising giving the threshold nature of the scheme, as performance above the level of the target is not rewarded.

7.2 Quality

The Customer Service target measures how well Jobcentres respond to the needs of clients and employers using the Jobcentre services and is the first proxy for quality. The second measure of quality is the Business Delivery target, which judges performance against five Jobcentre Plus processes, incorporating aspects such as accuracy and skill screening. We examine whether workers of the Jobcentres focus upon achieving the job entries – quantity - at a cost to quality.

7.2.1 Customer Service

7.2.1.1 First Stage

We assume the functional form for the model which most represented the data in the job entry analysis; a log linear model. Columns 1 and 3 of table 12 report the coefficients from the OLS regression and columns 2 and 4 the Fixed Effect results. We analyse the effect of both district log staff and district log job entries per member of staff upon the quality measure. District staff have a negative effect upon the Customer Service outcome, but columns 2 and 4 show that this is absorbed by the district effect. There is evidence that as staff accumulate job entry points, there is a decline in the Customer Service outcome, although the results are not significant. A strong labour market (claimant inflows / vacancy inflows) tends to improve the Customer Service outcome and again there are noted seasonal effects.

7.2.1.2 *Second Stage*

In table 13 we examine the relationship between variables which are likely to drive working behaviour and the district Customer Service fixed effect. Paradoxically, staff negatively impacts upon the Customer Service outcome. One reason for this could be a lack of clarity of responsibility within the districts. The proportion of Pathfinder offices within Makinson districts, Makinson status and Makinson status interacted with staff do not statistically impact upon the Customer Service outcome. We know from above that the size of the office is important in determining the effort exerted towards achieving the job entry target. Unfortunately the Customer Service target is measured at a district level, thus it is impossible to see whether the outcome differs with office characteristics. However we can control for the number of offices within the district, to examine whether small districts outperform larger districts. It appears not to be the case as the variable is statistically insignificant, even when interacted with the Makinson status.

7.2.2 *Business Delivery*

7.2.2.1 *First Stage*

The first stage regressions on log Business Delivery outcome, reported in table 14 also show a negative effect from staff which disappears once the district fixed effects are controlled for. Across time and districts, job entry points per staff member improve the outcome, but looking only across time there is an adverse (insignificant) effect. The log labour market variable does not statistically influence the Business Delivery outcome.

7.2.2.2 *Second Stage*

Table 15 reports the regression results on the district Business Delivery outcome. Identified is a negative impact from staff upon the district Business Delivery score, but similarly to the Customer Service outcome no other district level variables are significant. All districts, whether participating in the incentive scheme or not do not influence the outcome of the Business Delivery target.

The quality analysis generated results to suggest that the team defined by the district does not entice workers to exert effort towards achieving the Customer Service or the Business Delivery outcome. There are several interpretations for why such results

were generated. Firstly, the sample size is restricted to the 90 districts, with so few degrees of freedom it is difficult to appropriately define the production function. Secondly there may be free rider behaviour within the teams. The quality outcomes are measured at an aggregated level and, as noted above the impact of individual effort (whether the individual is the employee or the office) is hard to verify. In contrast there was strong evidence of differential effort contribution towards the job entry target, measured at office level. In particular, as already mentioned, in small offices and districts, performance on job entries tends to be relatively high. Therefore, the fact that the two quality outcomes do not vary with the number of offices per district may suggest that workers do not try to improve performance on these targets and their motivation is not so strong as for the job entry target – shirking is not easily verifiable. Thirdly, multi-tasking issues traditionally emerge when measuring quantity and quality, as quality elements are intrinsically measured with greater noise. This is certainly true for the Jobcentre Plus quality measures. The Customer Service outcome is measured by a mystery shopper approach and the five elements of the Business Delivery target are recorded at different time periods, making it difficult for the workers to understand how to improve their behaviour in such a way that would raise the score achieved by the district. Given that all targets carry the same bonus, their rational response would be to focus on tasks for which their effort is easily transferable into outcomes: i.e. the quantity target.

In summary, we have analysed the effect of the Makinson scheme both on quantity and on quality. We found strong results for the quantity analysis: the Makinson scheme has had a significantly positive effect on job entries. This effect is smaller in larger offices, and is smaller in districts with many offices. There was some evidence of districts responding to the threshold nature of the scheme: exerting enough effort to ensure that the target was hit, but not higher effort. The quality analysis was less conclusive. However this is not entirely surprising, as the measures for quality are collected at an aggregated level and may not be accurate in measuring the actions of employees.

8 Future analysis

As noted above, this analysis of the team-based incentive scheme is preliminary and we intend to advance the evaluation in a number of ways.

1. The time period of observation will be extended to incorporate information for full four quarters in which the pilot scheme was run. Beyond that, we will collect and use data from subsequent years to undertake a difference-in-difference analysis.
2. We will exploit the point system used to measure the job entry target, asking whether the employees of Jobcentre Plus give precedence to clients deemed high priority over other clients, in order to achieve more points towards the target. There is a difficulty, as the workers will only behave in such a manner if the reward for placing a high priority client (the points achieved) exceeds the cost of doing so (the difficulty of placing the client into employment). The method by which we do tackle the issue is to estimate the difficulty of placing lone parents into employment⁶, using data on the number of lone parents actively seeking employment at every Jobcentre office. If the Jobcentre staff do allocate jobs in accordance with the design of the incentive scheme, we would expect to have higher placements of lone parents, relative to other clients in areas with many lone parents actively seeking employment.
3. We will use the estimated labour market impact to calibrate the labour market risk facing JCP agents. Theory says that this should impact on the design of scheme. Put differently, since we know it has not, there ought to be differential reaction to the scheme in different labour market conditions. We will investigate this as a test of the theory.
4. We will use the data to evaluate models of team incentives, the multi-tasking aspects, and the potential role of public sector motivation.
5. It will be possible to calculate the number of job entries created through the incentive scheme. Thus we can measure the output gained from the pilot scheme. Then, once we know the end of year bonus payments we will conduct welfare analysis, comparing the cost incurred from the incentive scheme to the cost savings, in terms of reduced welfare payments.

9 Conclusion

Although there exists a wealth of economic theory on the implementation of financial incentives in public services, our evaluation of the Jobcentre Plus incentive scheme is to date the first empirical study in the UK. The complex nature of the scheme in

Jobcentre Plus has allowed us to explore the impact across many dimensions. Our findings are that incentive schemes are more successful in small teams. We interpret this as evidence that the free rider problem is mitigated in small teams by positive attributes of team work, such as team morale and peer monitoring, however these mechanisms weaken as teams grow in size. We observed strong, positive effects from the incentive scheme upon quantity produced, but no real impact upon quality. This may confirm theoretical predictions of multi-tasking – whereby workers focus their effort upon targets measured with greater accuracy (i.e. quantity) and for which the outcome of their actions is more easily verifiable. On the other hand, the finding may reflect the small sample size available for quality analysis. Jobcentre Plus employees seem to have responded to the threshold nature of the incentive scheme, exhibiting gaming behaviour by aiming to exert effort enough to hit the target set, but not to exceed the target. There are many more issues relating to the Jobcentre Plus incentive scheme that we wish to investigate. However from the current analysis, evidence suggests that the public sector employees did respond to the incentive scheme and therefore with the appropriate design there is potential for improving the efficiency of the public sector through the use of financial incentives.

⁶ Placement of Lone Parents into employment is rewarded with the maximum of 12 points

Table 1

OLS Regressions using different Labour Market Variable forms
 Dependent variable is Log total job entry points

	(1) vac/population, cf/population	(2) cf/population	(3) vac, cf non- normalised	(4) vac/cf
Log Staff	0.660 (0.010)**	0.647 (0.009)**	0.680 (0.011)**	0.698 (0.029)**
Log Normalised Claimant Inflows	0.188 (0.029)**	0.247 (0.026)**		
Log Normalised Vacancy Inflows	0.355 (0.029)**			
Log Claimant Inflows			-0.093 (0.023)**	
Log Vacancy Inflows			0.104 (0.025)**	
Log Labour Market				0.082 (0.037)*
May 2002		0.109 (0.029)**		
June 2002		-0.025 (0.029)		
July 2002	0.041 (0.029)	-0.040 (0.029)	-0.015 (0.030)	-0.025 (0.015)
August 2002	0.235 (0.029)**	0.147 (0.029)**	0.169 (0.030)**	0.171 (0.012)**
September 2002	0.048 (0.029)	0.064 (0.030)*	0.108 (0.030)**	0.095 (0.015)**
October 2002	0.297 (0.029)**	0.289 (0.029)**	0.274 (0.030)**	0.270 (0.017)**
November 2002	-0.000 (0.029)	0.005 (0.030)	0.057 (0.030)	0.060 (0.016)**
December 2002	-0.498 (0.030)**	-0.608 (0.029)**	-0.607 (0.030)**	-0.621 (0.018)**
Constant	6.832 (0.207)**	5.365 (0.155)**	3.785 (0.049)**	3.839 (0.092)**
Observations	5636	7257	5636	6469
R-squared	0.55	0.52	0.53	0.55

Robust standard errors in parentheses; * significant at 5% level; ** significant at 1% level

Note – ‘staff’ means the sum of AOs and EOs in the office.

Table 2
 Fixed Effect Regressions using different Labour Market Variable forms
 Dependent variable is Log total job entry points

	(1) vac/population, cf/population	(2) cf/population	(3) vac, cf non- normalised	(4) vac/cf
Log Staff	0.112 (0.031)**	0.107 (0.031)**	0.113 (0.038)**	0.096 (0.037)**
Log Normalised Claimant Inflows	-0.322 (0.033)**	-0.291 (0.038)**		
Log Claimant Inflows			-0.160 (0.046)**	
Log Vacancy Inflows			0.213 (0.029)**	
Log Labour Market				0.194 (0.019)**
May 2002		0.084 (0.013)**		
June 2002		0.044 (0.014)**		
July 2002	-0.041 (0.011)**	-0.000 (0.013)	-0.002 (0.014)	-0.012 (0.012)
August 2002	0.144 (0.010)**	0.185 (0.013)**	0.190 (0.015)**	0.188 (0.012)**
September 2002	0.129 (0.012)**	0.165 (0.015)**	0.080 (0.014)**	0.070 (0.012)**
October 2002	0.270 (0.010)**	0.313 (0.013)**	0.276 (0.014)**	0.263 (0.012)**
November 2002	0.120 (0.013)**	0.156 (0.016)**	0.075 (0.015)**	0.078 (0.012)**
December 2002	-0.655 (0.011)**	-0.611 (0.013)**	-0.579 (0.017)**	-0.602 (0.012)**
Constant	3.901 (0.207)**	4.046 (0.236)**	5.219 (0.475)**	5.679 (0.115)**
Observations	7257	7257	5636	6469
Number of officeid	823	823	822	942
R-squared	0.50	0.50	0.57	0.57

Robust standard errors in parentheses; * significant at 5% level; ** significant at 1% level

Note – ‘staff’ means the sum of AOs and EOs in the office.

Table 3
 OLS Regression with varying staff variables; using chosen labour market variable as
 vac/cf
 Dependent variable is Log total job entry points

	(1) Linear	(2) Quadratic	(3) Log
Labour Market	-6.228 (8.376)	13.696 (7.951)	
Staff	9.090 (0.166)**	14.957 (0.260)**	
Staff Squared		-0.036 (0.001)**	
Log Labour Market			0.082 (0.020)**
Log Staff			0.698 (0.009)**
July 2002	-17.874 (16.828)	-14.785 (15.911)	-0.025 (0.027)
August 2002	79.913 (16.837)**	83.000 (15.920)**	0.171 (0.027)**
September 2002	62.106 (16.782)**	61.288 (15.868)**	0.095 (0.027)**
October 2002	192.378 (17.139)**	182.450 (16.209)**	0.270 (0.027)**
November 2002	59.198 (17.058)**	52.946 (16.131)**	0.060 (0.027)*
December 2002	-225.720 (17.109)**	-228.969 (16.178)**	-0.621 (0.027)**
Constant	270.588 (17.515)**	131.987 (17.275)**	3.839 (0.034)**
Observations	6714	6714	6469
R-squared	0.36	0.43	0.55

Robust standard errors in parentheses; * significant at 5% level; ** significant at 1% level

Note – ‘staff’ means the sum of AOs and EOs in the office.

Table 4
 Fixed Effect Regression with varying staff variables; using chosen labour market
 variable vac/cf
 Dependent variable is Log total job entry points

	(1) Linear	(2) Staff Square	(3) Log
Labour Market	35.353 (7.284)**	35.369 (7.284)**	
Staff	-0.707 (0.565)	-0.148 (0.824)	
Staff Squared		-0.005 (0.005)	
Log Labour Market			0.194 (0.019)**
Log Staff			0.096 (0.037)**
July 2002	-10.956 (7.219)	-10.941 (7.220)	-0.012 (0.012)
August 2002	86.655 (7.235)**	86.620 (7.235)**	0.188 (0.012)**
September 2002	56.653 (7.142)**	56.591 (7.142)**	0.070 (0.012)**
October 2002	186.907 (7.408)**	186.672 (7.412)**	0.263 (0.012)**
November 2002	65.201 (7.281)**	64.957 (7.286)**	0.078 (0.012)**
December 2002	-215.995 (7.373)**	-216.224 (7.377)**	-0.602 (0.012)**
Constant	504.979 (20.200)**	496.231 (22.273)**	5.679 (0.115)**
Observations	6714	6714	6469
Number of officeid	986	986	942
R-squared	0.39	0.39	0.57

Robust standard errors in parentheses; * significant at 5% level; ** significant at 1% level
 Note – ‘staff’ means the sum of AOs and EOs in the office.

Table 5: Describing the Fixed Effects

Fixed Effect	Mean	Median	1 st Quartile	3 rd Quartile	Count
Total	6.002	6.052	5.522	6.525	942
Pathfinder Offices	5.752	6.073	5.389	6.640	48
Non-Pathfinder Offices	6.015	6.051	5.522	6.520	894
Offices in Makinson Districts	5.939	6.042	5.478	6.526	217
Offices in Non-Makinson Districts	6.021	6.053	5.524	6.524	725
Non-Pathfinder offices in Makinson districts	5.993	6.025	5.478	6.514	169

Table 6: Breakdown of Fixed Effects

Table 6a: Table of Fixed Effects: Total

		Pathfinder Office				<i>Total</i>
		Yes		No		
Makinson District	Yes	Mean	5.752	Mean	5.993	
		Count	48	Count	169	217
	No	Mean		Mean	6.021	
		Count		Count	725	725
<i>Total</i>			48		894	942

Table 6b: Table of Fixed Effects: Small Offices (<25 Staff)

		Pathfinder Office				<i>Total</i>
		Yes		No		
Makinson District	Yes	Mean	5.244	Mean	5.565	
		Count	11	Count	84	95
	No	Mean		Mean	5.569	
		Count		Count	371	371
<i>Total</i>			11		455	466

Table 6c: Table of Fixed Effects: Large Offices (>=25 Staff)

		Pathfinder Office				<i>Total</i>
		Yes		No		
Makinson District	Yes	Mean	5.903	Mean	6.415	
		Count	37	Count	85	122
	No	Mean		Mean	6.493	
		Count		Count	354	354
<i>Total</i>			37		439	476

Table 6d: Table of Fixed Effects: Good (above average) Labour Market Conditions

		Pathfinder Office				<i>Total</i>
		Yes		No		
Makinson District	Yes	Mean	5.167	Mean	5.763	
		Count	15	Count	71	86
	No	Mean		Mean	5.793	
		Count		Count	276	276
<i>Total</i>			15		347	362

Table 6e: Table of Fixed Effects: Poor (below average) Labour Market Conditions

		Pathfinder Office				<i>Total</i>
		Yes		No		
Makinson District	Yes	Mean	6.018	Mean	6.159	
		Count	33	Count	98	131
	No	Mean		Mean	6.161	
		Count		Count	449	449
<i>Total</i>			33		547	580

Note – ‘staff’ means the sum of AOs and EOs in the office.

Table 7: Office characteristics summary by Makinson District Status

		Pathfinder (%)	Office Staff (AO + EO)	Number of District offices in District	of District Office (%)	(HQ) Mean labour market conditions
Offices in Non- Makinson Districts	Mean		29.47	11.354	0.105	0.189
	Median		24	11	0	0.144
	Sd		26.76	4.061	0.307	0.335
	Q10		7	6	0	-0.142
	Q90		57	17	1	0.612
Offices in Makinson Districts	Mean	0.221	36.111	14.475	0.065	0.182
	Median	0	27	16	0	0.176
	Sd	0.416	32.727	5.156	0.246	0.26
	Q10	0	8	7	0	-0.129
	Q90	1	78	22	0	0.545
All offices	Mean	0.051	31	12.073	0.096	0.187
	Median	0	25	12	0	0.175
	Sd	0.22	28.366	4.53	0.294	0.319
	Q10	0	8	7	0	-0.129
	Q90	0	61	17	0	0.57

Note – ‘staff’ means the sum of AOs and EOs in the office.

Table 8: Regressions on the Fixed Effects
 Dependent variable is Office Fixed Effect

	1	2	3	4	5	6	7
Pathfinder Office	-0.697 (0.085)**	-0.682 (0.093)**	-0.537 (0.105)**	-0.582 (0.106)**	-0.581 (0.106)**	-0.576 (0.106)**	-0.576 (0.105)**
District Office	0.251 (0.064)**	0.249 (0.065)**	0.238 (0.064)**	0.234 (0.064)**	0.233 (0.064)**	0.238 (0.064)**	0.239 (0.064)**
log Staff	0.557 (0.023)**	0.557 (0.023)**	0.586 (0.025)**	0.583 (0.026)**	0.583 (0.026)**	0.589 (0.026)**	0.593 (0.025)**
Mean labour market conditions	-0.135 (0.039)**	-0.136 (0.039)**	-0.131 (0.039)**	-0.125 (0.038)**	-0.125 (0.038)**	-0.139 (0.039)**	-0.139 (0.039)**
Makinson District Status		-0.019 (0.048)	0.099 (0.063)	0.432 (0.146)**	0.429 (0.147)**	0.408 (0.147)**	0.467 (0.133)**
Makinson Status*Staff			-0.004 (0.001)**	-0.005 (0.001)**	-0.005 (0.001)**	-0.005 (0.001)**	-0.005 (0.001)**
Number of Offices in District				-0.004 (0.005)	-0.004 (0.005)	-0.004 (0.005)	
Makinson Status*Number of offices				-0.02 (0.009)*	-0.02 (0.009)*	-0.019 (0.009)**	-0.024 (0.008)**
% High grade staff in office					-0.239 (0.559)	-0.254 (0.557)	
Private Public Wage Gap						-0.018 (0.008)*	-0.018 (0.008)*
Constant	4.459 (0.097)**	4.463 (0.098)**	4.369 (0.103)**	4.421 (0.126)**	4.429 (0.127)**	4.431 (0.127)**	4.356 (0.102)**
Observations	942	942	942	942	942	942	942
R-squared	0.46	0.45	0.46	0.47	0.47	0.47	0.47

Note – ‘staff’ means the sum of AOs and EOs in the office.

Standard errors in parentheses; * significant at 5% level; ** significant at 1% level

Table 9: Regressions on the Fixed Effects – Alternative Size Variables
 Dependent variable is Office Fixed Effect

	1	2	3	4	5	6
Makinson Office, staff <= 12	0.262 (0.160)	0.333 (0.146)*				
Makinson Office, 12 < staff <= 25	0.285 (0.159)	0.351 (0.147)*				
Makinson Office, 25 < staff <= 40	0.351 (0.150)*	0.413 (0.138)**				
Makinson Office, 40 < staff <= 60	0.293 (0.161)	0.353 (0.152)*				
Makinson Office, staff > 60	0.016 (0.168)	0.073 (0.159)	-0.285 (0.120)*			-0.292 (0.120)*
Makinson District Status			0.308 (0.137)*	0.282 (0.137)*	0.299 (0.140)*	0.371 (0.124)**
Makinson Office, staff > 50				-0.181 (0.115)		
Makinson Office, staff > 40					-0.124 (0.094)	
Number of Offices in District	-0.006 (0.005)		-0.005 (0.005)	-0.006 (0.005)	-0.006 (0.005)	
Makinson Status*Number of offices	-0.018 (0.009)	-0.024 (0.008)**	-0.019 (0.009)*	-0.017 (0.009)	-0.018 (0.009)	-0.024 (0.008)**
Observations	942	942	942	942	942	942
R-squared	0.46	0.46	0.46	0.46	0.46	0.46

Note – also included in the regressions are intercept, Pathfinder Office status, District Office status, log staff, and mean labour market conditions; the coefficients not shown but available from the authors.

Note – ‘staff’ means the sum of AOs and EOs in the office.

Standard errors in parentheses; * significant at 5% level; ** significant at 1% level

Table 10: Alternative Team Sizes
 Dependent variable is Office Fixed Effect

	1	2	3
Makinson District, 10 < offices <= 17	0.032 (0.144)		
Makinson District, 18 < offices <= 20	-0.249 (0.161)		
Makinson District, offices <= 21	-0.243 (0.147)		
Makinson District, 364 < staff			0.210 (0.079)**
Makinson District, 365 < staff <= 550		-0.102 (0.081)	0.108 (0.107)
Makinson District, 551 < staff <= 770		-0.071 (0.081)	0.139 (0.106)
Makinson District, staff <= 771		-0.210 (0.079)**	
Observations		942	942
R-squared		0.46	0.46

Note – also included in the regressions are intercept, Pathfinder Office status, District Office status, log staff, and mean labour market

Table 11: Calculating the Gain in Performance

	Number of offices per district					Total
	0 – 5	6 – 10	11 – 15	16 – 20	21+	
% Gain	31.4	22.5	14.2	6.5	0.0	
Number of districts	1	8	2	4	2	17
Ratio of offices with less than 60 staff to total offices	4/5	53/71	25/26	56/72	43/43	181/217
Average % Stretch	7.5	8.3	6.25	5.0	5.0	6.29

Note: mid-points used to calculate expected gain

Uses regression results from table 9 column 3 (which understate gain relative to col. 6)

Table 12: OLS and Fixed Effect Regressions
 Dependent Variable is Log Customer Service Outcome

	1	2	3	4
District Log Staff	-0.012 (0.005)*	0.086 (0.057)		
District Log (Job Entries/Staff)			-0.001 (0.003)	-0.001 (0.003)
District Log Labour Market	0.016 (0.009)	0.011 (0.019)	0.021 (0.009)*	0.006 (0.020)
September 2002	-0.022 (0.005)**	-0.020 (0.003)**	-0.022 (0.005)**	-0.023 (0.003)**
December 2002	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Constant	-0.180 (0.007)**	-0.060 (0.069)	-0.165 (0.004)**	-0.161 (0.005)**
Observations	180	180	174	174
Number of districtid		90		90
R-squared	0.17	0.37	0.14	0.39

Table 13: Regressions on the Fixed Effect
 Dependent Variable is District CST Fixed Effect

	1	3	4	5	6	7
District log Staff	-0.097 (0.007)**	-0.096 (0.007)**	-0.101 (0.007)**	-0.102 (0.008)**	-0.111 (0.010)**	-0.112 (0.010)**
District Mean labour market conditions	0.007 (0.008)	0.009 (0.008)	0.008 (0.008)	0.008 (0.008)	0.002 (0.008)	0.002 (0.008)
Makinson District Status			0.015 (0.008)	0.013 (0.018)	0.013 (0.018)	0.019 (0.021)
Makinson Status*Staff				0.005 (0.038)	0.001 (0.038)	0.013 (0.045)
Number of Offices in District					0.002 (0.001)	0.002 (0.001)
Makinson Status*Number of offices						-0.001 (0.002)
% PF offices within the district		-0.006 (0.005)	-0.008 (0.005)	-0.008 (0.005)	-0.008 (0.005)	-0.009 (0.005)
Constant	-0.291 (0.011)**	-0.217 (0.058)**	-0.209 (0.058)**	-0.208 (0.058)**	-0.220 (0.058)**	-0.222 (0.058)**
Observations	90	90	90	90	90	90
R-squared	0.74	0.74	0.75	0.75	0.76	0.76

Table 14: OLS and Fixed Effect Regressions
 Dependent Variable is Log Business Delivery Outcome

	1	2	3	4
District Log Staff	-0.013 (0.006)*	0.020 (0.037)		
District Log (Job Entries/Staff)			0.008 (0.003)	-0.002 (0.002)
District Log Labour Market	-0.008 (0.012)	-0.004 (0.016)	0.000 (0.011)	-0.003 (0.016)
September 2002	0.010 (0.010)	0.006 (0.005)	0.006 (0.010)	0.007 (0.005)
October 2002	0.002 (0.010)	0.006 (0.005)	-0.003 (0.010)	0.007 (0.006)
November 2002	0.012 (0.010)	0.016 (0.005)**	0.009 (0.010)	0.017 (0.005)**
December 2002	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Constant	4.488 (0.011)**	4.525 (0.046)**	4.500 (0.009)**	4.500 (0.006)**
Observations	287	287	285	285
Number of districtid		89		89
R-squared	0.03	0.09	0.04	0.09

Table 15: Regressions on the Fixed Effect
 Dependent Variable is District BDT Fixed Effect

	1	2	3	4	5	6
District log Staff	-0.034 (0.012)**	-0.033 (0.012)**	-0.040 (0.013)**	-0.038 (0.015)*	-0.044 (0.017)*	-0.050 (0.017)**
District Mean labour market conditions	-0.016 (0.015)	-0.015 (0.016)	-0.018 (0.016)	-0.018 (0.016)	-0.022 (0.016)	-0.020 (0.016)
Makinson District Status			0.019 (0.014)	0.029 (0.032)	0.029 (0.032)	0.064 (0.038)
Makinson Status*Staff				-0.023 (0.069)	-0.026 (0.069)	0.041 (0.080)
Number of Offices in District					0.001 (0.001)	0.002 (0.002)
Makinson Status*Number of offices						-0.005 (0.003)
% PF offices within the district		-0.004 (0.008)	-0.005 (0.009)	-0.005 (0.009)	-0.005 (0.009)	-0.006 (0.009)
Constant	4.479 (0.021)**	4.522 (0.104)**	4.531 (0.103)**	4.528 (0.105)**	4.520 (0.105)**	4.512 (0.104)**
Observations	89	89	89	89	89	89
R-squared	0.08	0.08	0.10	0.10	0.11	0.14

References

- S. Burgess, M.L. Ratto “The role of incentives in the public sector: issues and evidence”, *Oxford Review of Economic Policy*, 2003, (forthcoming).
- A. Dixit “Incentives and organisations in the public sector: an interpretative review” *Journal of Human Resources*, vol 37(4), Fall 2002, 696-727.
- B. Holmström “Moral hazard in teams”, *Bell Journal of Economics*, 13, 1982, 324-340.
- B. Holmström, P. Milgrom. “Regulating trade among agents”, *Journal of Institutional and Theoretical Economics*, vol. 146(1), 1990, 85-105.
- B. Holmström, P. Milgrom “Multi-task principal-agent analyses: Linear contracts, asset ownership and job design”, *Journal of Law, Economics and Organisation*, vol 7, 1991, 24-52.
- H. Itoh “Incentives to help in multi-agent situations”, *Econometrica*, vol 59, (3),1991, 611-636.
- J. Makinson “Incentives for change. Rewarding performance in national government networks”, *Public Service Productivity Panel*, 2000.
- G. MacDonald, L. M. Max “Adverse Specialization”, *Journal of Political Economy*, vol 109 (4), 2001, 864-899.
- C. Prendergast “The provision of incentives in firms”, *Journal of Economic Literature*, vol 37, 1999, 7-63.

Appendices

Appendix 1: Job Entry Priority Group Categories

Priority Client Group 1	Job entry points score 12
Jobless Lone Parents including people on the New Deal for Lone Parents Those on the New Deal for Disabled People People with Disabilities in receipt of a specified primary benefit Other people in receipt of a specified primary benefit	
Priority Client Group 2	Job entry points score 8
People on the New Deal 50 plus People on the New Deal 25 plus Those on the New Deal for Young People Employment Zones Other People with Disabilities not included in Priority Client Group 1 Jobseeker's Allowance (JSA) long term claimants	
Priority Client Group 3	Job entry points score 4
JSA short term claimants	
Priority Client Group 4	Job entry points score 2
Unemployed non claimants	
Priority Client Group 5	Job entry points score 1
Employed People	

Appendix 2: Regressions on the Fixed Effects using Claimant Inflow as the Labour Market Variable
 Dependent variable is Office Fixed Effect

	1	2	3	4	5	6	7
Pathfinder Office	-0.719	-0.728	-0.589	-0.650	-0.649	-0.621	-0.618
	(0.100)**	(0.110)**	(0.125)**	(0.125)**	(0.125)**	(0.124)**	(0.124)**
District Office	0.186	0.187	0.174	0.172	0.170	0.188	0.191
	(0.076)*	(0.077)*	(0.077)*	(0.076)*	(0.076)*	(0.076)*	(0.076)*
log Staff	0.723	0.723	0.752	0.739	0.739	0.727	0.740
	(0.028)**	(0.028)**	(0.030)**	(0.031)**	(0.031)**	(0.030)**	(0.030)**
Mean Claimant Inflow	0.034	0.034	0.034	0.034	0.034	0.048	0.048
	(0.002)**	(0.002)**	(0.002)**	(0.002)**	(0.002)**	(0.004)**	(0.004)**
Makinson District Status		0.010	0.126	0.386	0.380	0.316	0.514
		(0.057)	(0.076)	(0.179)*	(0.179)*	(0.178)	(0.161)**
Makinson Status*Staff			-0.004	-0.004	-0.004	-0.004	-0.004
			(0.002)*	(0.002)*	(0.002)*	(0.002)*	(0.002)*
Number of Offices in District				-0.014	-0.014	-0.015	
				(0.006)*	(0.006)*	(0.006)*	
Makinson Status*Number of offices				-0.012	-0.011	-0.008	-0.023

				(0.010)	(0.010)	(0.010)	(0.008)**
% High grade staff in office					-0.408	-0.321	
					(0.689)	(0.682)	
Private Public Wage Gap						-0.069	-0.068
						(0.015)**	(0.015)**
Constant	3.601	3.599	3.513	3.722	3.737	3.703	3.469
	(0.085)**	(0.086)**	(0.093)**	(0.127)**	(0.130)**	(0.129)**	(0.092)**
Observations	943	943	943	943	943	943	943
R-squared	0.57	0.57	0.58	0.58	0.58	0.59	0.58

Note – ‘staff’ means the sum of AOs and EOs in the office.

Standard errors in parentheses; * significant at 5% level; ** significant at 1% level