

Evaluation of the Introduction of the Makinson Incentive Scheme in Jobcentre Plus

Final Report

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Executive Summary

This report uses economic theory and statistical analysis to provide an evaluation of the introduction of the Makinson scheme into Jobcentre Plus.

Makinson is a team based incentive scheme. Economic theory of team incentives provides the hypotheses we test in this report. Our hypotheses are:

- The bigger the team, the less the impact on quantity of the scheme, possibly due to free riding. Teams in the Jobcentre Plus are defined by district. So teams will be large if offices are large or if there are many offices in a district or both.
- The design of the bonus may encourage teams to focus effort on a limited set of activities

Our statistical approach is to examine the effect of the scheme, netting out factors that may affect performance over and above the impact of the scheme. The factors that are netted out are differences in staffing, labour market conditions, and seasonal factors. Once these are controlled for we find:

- The 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.
- No effect of the scheme was observed on a quality measure: the customer service.

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1. Signposting the Report

This report first briefly documents the nature of the Team Based Incentive incentive scheme and the relevant organisational structure of Jobcentre Plus. Second, we set out what economic analysis tells us of the likely impact of the scheme. Thirdly we present the empirical analysis and discuss our main results. Finally we provide a summary of the results. Appendices give further details on the theory, data and statistical techniques.

Clicking on the hyperlinks below will take you straight to the relevant sections:

[The Incentive Scheme](#)

[What impact might the scheme have: the predictions for Jobcentre Plus from economic theory](#)

[Empirical Analysis](#)

[Summary of Findings](#)

[Appendix A: A brief review of the economic theory of team incentives](#)

[Appendix B: Statistical Approach](#)

2. The Incentive Scheme

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. Similar incentive schemes have been designed for Child Support Agency and HM Customs and Excise. The idea of piloting a team-based incentive scheme in public agencies dates back to the Makinson report (2000). John Makinson (then Group Finance Director of Pearson plc) was recruited to the Public Service Productivity Panel to analyse how performance-based incentives operated in four public organisations (Benefits Agency, Employment Service, HM Custom and Excise, and Inland Revenue) and how they might be improved. In his report particular emphasis is made on the use of team-based incentives, with the view that teamwork better reflects the way in which most public servants actually work. In particular the reasons for adopting team-based rewards, according to the document, are as follows:

- “The public service ethos stresses the importance of collective rather than individual achievement. Team-based rewards would, if properly executed, reinforce this positive affinity and motivation.

- Team based rewards are more capable of measurement. There is an abundance of benchmark data available in each agency on the relative performance of individual offices on a variety of measures.
- Team rewards would address concerns that individual performance measurement reflects biases against women, ethnic minorities and part-time workers.
- It will be easier to integrate pay incentive with non pay-based recognition in a team framework. The “office of the month”, rewarded by a benefit in which everyone can share, is a less divisive idea than the “employee of the month”. It also provides an opportunity to recognise team behaviour.
- Team rewards foster a spirit of internal competition between offices, which is more productive than internal competition within an office”¹.

The Makinson report makes some recommendations on how incentives should be designed and distributed. In particular

- Every member of staff should have a bonus opportunity representing at least 5% of base salary.
- Incentives should relate to targets already embodied in the Public Service agreements (PSA) of the respective agencies - this is to ensure that incentives reinforce the strategic objectives of the organisation - and no employee should be judged on a wide range of targets.
- As a rule of thumb, five targets should be the maximum for junior grades and eight targets the limit for more senior staff.
- Team-based incentives should in general relate to the performance of an individual office. The relative performance of offices and districts should be made widely available within each agency.
- Incentives should be funded largely from improved productivity. The entitlement of individual agencies should be based on their overall performance. Extra funding for performance incentives should be released not just for making cost savings, but also for better than targeted service delivery and overall performance.

As we shall see some of these recommendation have been followed by the designers of the incentives scheme at Jobcentre Plus.

¹ Makinson (2000), p. 17.

Brief outline of the history and structure of Jobcentre Plus

Jobcentre Plus was created in April 2002 as the result of a major reorganisation within the Benefits Agency and the Employment Service, which started in June 2001. At this time the Benefits Agency and the Employment Service became part of the same Department (the Department for Work and Pensions), in order to bring together their work.

This major reorganisation meant redesigning districts (the 126 original districts were reorganised in 90 districts in April 2002), setting new PSA targets and changing the way of delivering business. In particular new offices were formed: the Pathfinder Offices which offer an integrated service and combine the work of the original social security offices and jobcentres. These new offices were first introduced in the 17 Pathfinder districts, formed in October 2001, in order to launch Jobcentre Plus. New Jobcentre Plus offices are being introduced and this structural change is still in progress and by 2006 Jobcentre Plus offices will operate in all 90 districts. There has been a further structural change in Jobcentre Plus since Sept 2002. The structure of decision making is now more decentralised: Head offices and Regional offices decision making, districts more operative.

Now there are 90 Districts and 1300 offices: 17 are the Pathfinder Districts, where there is at least one Pathfinder office and 73 Districts where we have Jobcentre offices (ex-ES) and Social Security offices (ex-BA).

The scheme structure and targets

The Teams

These are the 17 Pathfinder Districts – that is, the team is the District. These districts differ in the number of Pathfinder offices. Members of a team are:

- everyone working for the District Manager
- disability employee advisors (under the control of District Managers by April 02)
- fraud and investigation staff (not managed by District Managers, but do contribute to the MVFE target)

There are from 500 to 2000 people in a team.

The targets

The targets are the same as the annual Jobcentre Plus targets. However, for Pathfinder districts there is a stretch factor added to this. The District manager is responsible for achieving the Makinson targets. There are five targets, briefly discussed below:

- Job Entry
- Customer Service
- Employer Outcome
- Business Delivery
- Monetary Value of Fraud and Error

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. They are:

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	

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, and
- Every JSA client who remains off benefit 4 weeks after starting a job

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.

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 so-called *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 (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%.

Employer Outcome

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

- if the vacancy was filled (75% of the target is achieved by performance against this element)
- if the vacancy was filled in a time scale that met the employers' needs (25%)

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.

The Bonus structure

Each of the five targets carries a fixed bonus for each team member, dependent upon their grade. So the absolute amount of the bonus gained depends on salary grade. The District must hit at least two targets to get any bonus, and if all 5 are reached, 50% of the standard rate per grade is paid as an addition.

3. What impact might the scheme have: the predictions for Jobcentre Plus from economic theory

The design of an optimal incentive scheme is a complex matter. The measurability of performance, the size of the team, the multi-dimensionality of tasks are all elements to be considered. In Appendix A we briefly review what theory has to say about incentives in teams. This section uses this analysis to put forward hypotheses as to what might be the effect of the Team Based Incentive scheme in Jobcentre Plus.

The incentives in the Jobcentre Plus scheme

It is clear that the design of an optimal incentive scheme is a complex matter. The measurability of performance, the size of the team, the multi-dimensions of tasks and the characteristics of the organisation are all elements which need to be considered in the design of team-based incentives and in any evaluation of a scheme.

The nature of Jobcentre Plus

In terms of tasks, Jobcentre Plus provides support for people of working age by helping them in the job search and in claiming for benefits. A wide variety of customers approach Jobcentre Plus, with different needs: young people, lone parents, disabled people, people over 50. Different programmes and activities have to be undertaken in order to match their different needs. Jobcentre Plus staff are engaged in multiple activities, which are very difficult to measure.

Jobcentre Plus is a not-for profit organisation so there is not an indicator of overall performance comparable to profit in a private company. So assessing performance is complicated and requires that all the different activities undertaken are taken into consideration. Some of these activities are complements – more effort in one task means greater performance also in another task- and some are substitutes – more effort on one task means less effort on another.

The implications for the operation of the Jobcentre Plus incentive scheme

Given this, what can expect from the incentive scheme? We focus on how the teams were defined, which targets were chosen and the reward system.

Teams

There are 17 teams, defined at District level. The number of offices in each district varies from a minimum of 32 to a maximum of 171. The number of people varies from 500 to 2000. This

definition of a team is very broad. The team is created merely by the reward system, in that individual rewards depend on the performance of the whole district. While staff interact within offices, there is little need for interactions between team members located in different offices and carrying out their tasks independently. Team members may find it hard to identify with their team.

As a consequence we can expect:

- The free-riding problem to be quite substantial. In small groups, office managers and peer pressure may mitigate this.
- The compensation system will not be enough to provide incentives for better performance so responses will be limited and some form of (additional) monitoring to hit output targets essential.
- The bigger the team, the less the impact of the scheme.

Targets

There are 5 targets to reach: job entry, customer service, employer outcome, business delivery and monetary value of fraud and error. The Jobcentre Plus environment is clearly a multi-tasking context. The current scheme has:

- Positive interdependencies between targets. For example, a good performance in the customer service target may have spill over effects on the employer outcome: understanding well the customers' requests, meeting their individual needs and giving them accurate information (these are the proactivity and accuracy elements of the customer service target) may speed up the process of filling vacancies (employer outcome). This may also facilitate the creation of job entries.
- Negative interdependencies between targets. The business delivery target and the monetary value of fraud and error may be substitute activities in relation to job entry, customer service and employer outcome: more time spent on income support or jobseekers' claims means less time to be devoted to the creation of job entries.
- Difficulties of measuring targets. Some of the targets relate to outputs that are very difficult to measure. The customer service and the employer outcome represent the quality of the service offered by Jobcentre Plus, but measurement of this is difficult and has to rely on surveys and the mystery shopping approach. The business delivery target covers very different activities and is also measured from random samples. Performance on these is measured at district level, so that the contribution of a single office to these targets may be not easy to distinguish and the precision of measurement may be quite poor. The measurement of the monetary value of fraud and error target is even more difficult and there

is only one measure for all the teams in the scheme. The difficulty in measuring outputs is intrinsic in the nature of the output of Jobcentre Plus and also depends on the fact that the agency has only a limited amount of funds that can be allocated to measure performance. Better precision in measurement could be achieved if bigger sample sizes could be used, but this implies more resources to be spent in doing surveys and visiting premises.

- 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. So if some offices do not hit their targets but at district level they are met, they still get the bonus.
- Varying labour market conditions across areas. These will have an impact on the outcome of Jobcentre Plus staff actions yet be beyond their control.

We expect the consequences of these features to be to weaken the power of the scheme through

- Free riding
- Possible allocation of effort in unintended directions
- Possible lack of attempts to hit those targets measured at district level

The design of the bonus

Each of the five targets carries a fixed rate bonus per grade. 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 an additional payment equal to 50% of the standard rate per grade is paid. 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

- offices to focus on some targets and giving up on overall success (i.e. not trying to reaching all 5 targets)

Finally, there is one aspect of the scheme that may overcome some of these problems. Each district has a District Manager who is responsible for achieving the targets and has autonomy in deciding how to allocate the targets down to office level. If these District Managers decide to allocate targets to offices pro-actively, they can have an important role in monitoring performance at office level. The allocation of targets at office level may make offices aware that their performance will be assessed. This could alleviate the free-riding problem.

4. Empirical Analysis

We begin with an overview of our methodology, and then present our main results. Note: we refer to districts in the Team Based Incentive incentive scheme as Makinson districts, and new Pathfinder offices as Pathfinder offices. So old-style ex-ES offices in Makinson districts are referred to as non-Pathfinder offices in Makinson districts.

Methodology

Policy Evaluation

The key question for any policy evaluation is a very simple one: is the outcome any different with the new policy, than it would have been without it? In this context, the outcomes are the set of measures of outputs and the satisfaction of client groups (we are also interested in productivity). The major difficulty in a policy evaluation is to define the counter-factual, what would have happened without the policy. Some assumptions have to be made to *estimate* what the outcome would have been in the absence of the policy. The best approach (in this non-experimental setting) is to use another, similar, set of organisations as a control group. In our context, the control group has to be similar to the policy group and, importantly, subject to the same general set of influences. The idea is to compare the *change* in outcome in the targeted organisation with the *change* in outcome for the control organisation. For obvious reasons, this is called a “difference in difference” approach. This is the technique we will use for our final report, looking at the difference between the year 2002/3 and 2003/4.

For this interim report, that approach is not possible as a comparison between 2001/02 (before the incentive policy) and 2002/03 is compromised by a number of other simultaneous organisational changes (as noted above). We therefore simply compare the offices in Makinson districts with those in non-Makinson districts, and try to control for as many potentially confounding factors as possible. As we have noted in our earlier correspondence, this is not perfect, but is all that is feasible for this report. If allocation of Makinson status to districts is random, as opposed to being correlated with factors influencing performance, then our results will give a fair estimate of the impact of The Team Based Incentive Scheme. Any non-randomness that we do not control for directly with covariates will introduce bias.

Our Modelling approach

Our approach is based on economic models of production where staff can apply more or 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 they have to deal with, 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.

To measure the impact of the incentive scheme, we choose the job entry outcomes as a measure of quantity produced by the Jobcentre Plus staff and the customer service outcomes as a measure of the quality with which output is produced. The job entry target is measured at the level of the office and the customer service target at the level of the district.

Our analysis is undertaken in two stages. First we run a regression over the whole period to isolate an office (or district) average effect. This controls for seasonal and other common time effects, for fluctuations of numbers of staff and in the labour market over the period. Second, we take this calculated average for each office (district) and examine how these compare across offices (districts) included and excluded from the incentive scheme.

It is important to be aware what is captured by these adjusted averages. They depend on the:

- average size (staff) of the office or district,
- average labour market conditions,
- Pathfinder office status
- Makinson district status
- Other unobservable characteristics of the office or district

We need therefore to adjust for the first three of these before we can attempt to isolate the Makinson effect. But it is clear that without either a random assignment of districts to Makinson status, or a proper difference-in-difference set-up, any effects might be attributable to correlation of the fifth factor above and Makinson status. For example, suppose that more efficient districts were more likely assigned to the Team Based Incentive scheme. Then any positive effect we find from The Team Based Incentive scheme may well be attributable to the innate level of achievement. Or if districts with more challenging labour markets were more likely to be included, 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.

The controls in the first stage

We examine the staff data to decide the most useful and parsimonious way to include it in the regression. Unsurprisingly, the numbers of staff in different grades are highly correlated – so for example, there is roughly 1 EO to 2 AOs. Also, many offices do not have any staff of high grade. We therefore decided to use the sum of EOs and AOs as the measure of office staff.

There is no information available on the quality of the equipment and infrastructure with which office are equipped. We are therefore forced to make the assumption that this is not correlated across offices with scheme status. However, as discussed above, one important feature of the infrastructure that we do know is whether an office is a Pathfinder office. These are newly (re)fitted, and perform a different set of tasks to other ex-ES offices.

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 entries. We measure this in the following way. Using the postcode of the Jobcentre Plus office, we locate it in a ward and then 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 (depend on) 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.

Results

Overall impact of the Team Based Incentive scheme on job entry

First stage

The first stage regression results are in Tables 1 to 4. These are in two pairs. Tables 1 and 2 look at different ways of modelling the labour market conditions, and 3 and 4 examine the best way to model the relationship between output and the number of staff. There is no obvious best way of doing this from economic theory, so we allow the data to influence our choice. We present results

both from a regular regression incorporating variation over offices and over time (tables 1 and 3) and fixed effect regressions which only use variation over time (tables 2 and 4). Differences between offices are swept up into the adjusted office effects that we analyse in the next section. We work on a log scale² to minimise the impact of heteroskedasticity.

There are a number of data issues that are important in the labour market data. Claimant inflows are available for all our period. As noted above, they both measure (some of) the “raw material” for Job Centres to work with (so might be expected to positively influence job entries), but are also a proxy for the state of the local labour market (and hence have a negative impact). Vacancy inflows represent a partial measure of jobs available to secure a job entry, and so should have a positive effect; these data are only available from June 2002, so we lose two months at the start of the period using them. These months were before the scheme was fully announced to staff. 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 makes sense – the long run average is a measure of the amount of inflow Jobcentre Plus staff have to work with. The OLS regressions combine both effects and so are positive in some columns in Table 1. We adopt a specification that takes the (log of the) 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, and is accepted by our data. 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 means that this is not a trivial risk factor that staff bear.

Turning to the staff data, 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.

² i.e. take logs of the total job entry points

Above we noted that 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 weaker in the panel analysis because it is simply absorbed by the fixed effect. (We shall see that the estimated office fixed effects are strongly related to office average size).

The final points to note from these first stage regressions are the importance of seasonal effects, and that the regressions explain around half of the overall variation. We chose the specification in column 3 of table 4 (the same as column 4 in table 2). 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.

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. Comparing offices in non-Makinson districts with non-Pathfinder offices in Makinson districts, we see that the offices effects are fairly similar in the two districts, with the former being slightly higher. Pathfinder offices are clearly associated with lower job entry figures. Figures 2 to 4 present the whole distributions for these comparisons.

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 and Makinson 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 office³.

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 impact of Makinson. 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 district⁴, 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 between offices in non-incentivised districts, but that this is attempted in incentivised districts but less effective in districts with many offices. Finally, we examine whether the number of high grade staff in the office has any independent effect but it appears not to. Deleting insignificant variables, we end up with the preferred specification in column 6. This regression explains about half of the variation between offices, and shows significant and heterogeneous effects from the incentive scheme.

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 (this is AOs + EOs). We have tried different cut-off points, but the data prefer a cut-off of 60. 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 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.

³ 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.

⁴ These are offices with positive job entries – not all JOBCENTRE PLUS offices.

Overall impact of the Team Based Incentive scheme on customer service

The Customer Service target measures how well Jobcentres respond to the needs of clients and employers using the Jobcentre services and is the proxy for quality.

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 10 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 11 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 in incentivised districts, as the variable is statistically insignificant when interacted with the Makinson status.

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

outcome is 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. In particular in small offices and districts, performance tends to be relatively high. However the quality outcome does not vary with the number of offices per district, which may suggest that workers do not try to improve performance on these targets and the motivation is not as strong as 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 in part measured by a mystery shopper approach, 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. Their rational response would be to focus on tasks for which their effort is easily transferable into outcomes: i.e. the quantity target. The quantity-quality trade-off is exacerbated in Jobcentre Plus as the outcomes are measured at a higher level in the hierarchy than performance.

In summary, we have analysed the effect of the Team Based Incentive scheme both on quantity and on quality. We found strong results for the quantity analysis. The Team Based Incentive incentive scheme

- showed a higher job entry performance
- the impact depends on the office size and the number of offices per district.

This effect is smaller in larger offices, and is smaller in districts with many offices.

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 the employees.

Summary of findings

Our statistical approach is to examine the effect of the scheme, netting out factors that may affect performance over and above the impact of the scheme. The factors that are netted out are differences in staffing, labour market conditions, and seasonal factors. Once these are controlled for we find:

- The 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.
- No effect from the scheme was observed on the quality aspect of Jobcentre Plus.

Finally it must be noted that because of other organisational change coinciding with the introduction of the scheme, we are not able to rule out all possible confounding factors: these results rest on the assumption that Makinson status is not systematically associated with other factors which make offices perform better.

5. Tables and Figures

Table 1

OLS Regressions using different Labour Market Variable forms

Dependent variable: Log total job entry points

	(1) vac/population, cf/population	(2) cf/population	(3) vac, cf normalised	(4) non- vac/cf
Log Staff	0.650 (0.008)**	0.641 (0.008)**	0.671 (0.009)**	0.690 (0.029)**
Log Normalised Inflows	0.345 (0.025)**			
Log Normalised Inflows	0.224 (0.026)**	0.288 (0.023)**		
Log Vacancy Inflows			0.099 (0.022)**	
Log Claimant Inflows			-0.085 (0.021)**	
Log Labour Market				0.072 (0.038)
May 2002		0.112 (0.030)**		
June 2002		-0.035 (0.030)		
July 2002	0.046 (0.031)	-0.044 (0.030)	-0.012 (0.031)	-0.023 (0.015)
August 2002	0.240 (0.031)**	0.144 (0.030)**	0.173 (0.031)**	0.173 (0.012)**
September 2002	0.050 (0.031)	0.054 (0.031)	0.112 (0.031)**	0.099 (0.016)**
October 2002	0.306 (0.031)**	0.288 (0.030)**	0.279 (0.031)**	0.274 (0.018)**
November 2002	0.001 (0.031)	-0.005 (0.031)	0.061 (0.031)	0.063 (0.017)**
December 2002	-0.491 (0.031)**	-0.608 (0.030)**	-0.603 (0.031)**	-0.618 (0.018)**
January 2003	0.400 (0.038)**	0.047 (0.030)	0.130 (0.036)**	0.097 (0.038)*
February 2003	-0.216 (0.031)**	-0.255 (0.031)**	-0.148 (0.031)**	-0.155 (0.022)**
March 2003	-0.152 (0.031)**	-0.251 (0.030)**	-0.247 (0.031)**	-0.256 (0.021)**
Constant	6.999 (0.179)**	5.614 (0.140)**	3.792 (0.044)**	3.862 (0.091)**
Observations	8116	9737	8116	9312
R-squared	0.52	0.50	0.50	0.51

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: Log total job entry points

	(1) vac/population, cf/population	(2) cf/population	(3) vac, cf normalised	(4) non- vac/cf
Log Staff	0.222 (0.026)**	0.206 (0.023)**	0.222 (0.026)**	0.199 (0.025)**
Log Normalised Vacancy Inflows	0.212 (0.025)**			
Log Normalised Claimant Inflows	-0.093 (0.041)*	-0.212 (0.036)**		
Log Vacancy Inflows			0.212 (0.025)**	
Log Claimant Inflows			-0.093 (0.041)*	
Log Labour Market				0.190 (0.016)**
May 2002		0.088 (0.014)**		
June 2002		0.034 (0.015)*		
July 2002	0.001 (0.015)	-0.006 (0.015)	0.001 (0.015)	-0.013 (0.013)
August 2002	0.194 (0.016)**	0.180 (0.014)**	0.194 (0.016)**	0.187 (0.013)**
September 2002	0.075 (0.016)**	0.148 (0.017)**	0.075 (0.016)**	0.071 (0.013)**
October 2002	0.284 (0.015)**	0.312 (0.014)**	0.284 (0.015)**	0.265 (0.014)**
November 2002	0.068 (0.016)**	0.138 (0.017)**	0.068 (0.016)**	0.079 (0.013)**
December 2002	-0.568 (0.018)**	-0.608 (0.014)**	-0.568 (0.018)**	-0.601 (0.013)**
January 2003	0.226 (0.029)**	0.047 (0.014)**	0.226 (0.029)**	0.188 (0.019)**
February 2003	-0.161 (0.017)**	-0.097 (0.019)**	-0.161 (0.017)**	-0.145 (0.014)**
March 2003	-0.267 (0.017)**	-0.294 (0.014)**	-0.267 (0.017)**	-0.289 (0.013)**
Constant	5.913 (0.300)**	4.179 (0.214)**	4.395 (0.406)**	5.361 (0.079)**
Observations	8116	9737	8116	9312
Number of officeid	840	841	840	962
R-squared	0.45	0.41	0.45	0.46

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: Log total job entry points

	(1) Linear	(2) Quadratic	(3) Log
Staff	8.660 (0.138)**	14.095 (0.216)**	
Labour Market	-7.827 (7.478)	10.544 (7.148)	
Staff Squared		-0.034 (0.001)**	
Log Staff			0.690 (0.008)**
Log Labour Market			0.072 (0.018)**
July 2002	-17.457 (17.000)	-14.683 (16.196)	-0.023 (0.028)
August 2002	80.278 (17.007)**	83.041 (16.203)**	0.173 (0.028)**
September 2002	62.668 (16.963)**	61.813 (16.161)**	0.099 (0.028)**
October 2002	202.910 (17.051)**	199.796 (16.245)**	0.274 (0.028)**
November 2002	71.370 (16.987)**	71.788 (16.183)**	0.063 (0.028)*
December 2002	-209.494 (17.031)**	-206.358 (16.226)**	-0.618 (0.028)**
January 2003	33.387 (17.897)	45.299 (17.055)**	0.097 (0.032)**
February 2003	-57.684 (17.045)**	-55.410 (16.239)**	-0.155 (0.028)**
March 2003	-103.984 (16.978)**	-102.219 (16.176)**	-0.256 (0.028)**
Constant	284.661 (16.492)**	157.125 (16.221)**	3.862 (0.032)**
Observations	9836	9836	9312
R-squared	0.33	0.39	0.51

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: Log total job entry points

	(1) Linear	(2) Quadratic	(3) Log
Staff	0.267 (0.295)	0.898 (0.492)	
Labour Market	38.649 (6.097)**	38.614 (6.097)**	
Staff Squared		-0.006 (0.004)	
Log Staff			0.199 (0.025)**
Log Labour Market			0.190 (0.016)**
July 2002	-10.459 (7.466)	-10.440 (7.466)	-0.013 (0.013)
August 2002	87.268 (7.477)**	87.214 (7.476)**	0.187 (0.013)**
September 2002	56.888 (7.412)**	56.779 (7.412)**	0.071 (0.013)**
October 2002	183.082 (7.515)**	182.975 (7.514)**	0.265 (0.014)**
November 2002	63.943 (7.423)**	63.828 (7.423)**	0.079 (0.013)**
December 2002	-212.356 (7.486)**	-212.472 (7.485)**	-0.601 (0.013)**
January 2003	71.349 (8.745)**	71.111 (8.746)**	0.188 (0.019)**
February 2003	-46.834 (7.531)**	-47.040 (7.532)**	-0.145 (0.014)**
March 2003	-107.403 (7.426)**	-107.505 (7.426)**	-0.289 (0.013)**
Constant	470.337 (12.951)**	462.078 (13.942)**	5.361 (0.079)**
Observations	9836	9836	9312
Number of officeid	986	986	962
R-squared	0.32	0.32	0.46

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	5.960	6.002	5.543	6.437	962
Pathfinder Offices	5.610	5.971	5.361	6.457	49
Non-Pathfinder Offices	5.979	6.006	5.553	6.434	913
Offices in Makinson Districts	5.871	5.972	5.501	6.434	222
Offices in Non-Makinson Districts	5.987	6.017	5.564	6.446	740
Non-Pathfinder offices in Makinson districts	5.945	5.974	5.521	6.390	173

Table 6: Breakdown of Fixed Effects

Table 6a: Table of Fixed Effects: Total

		Pathfinder Office			<i>Total</i>	
		Yes		No		
Makinson District	Yes	Mean	5.610	Mean	5.944	
		Count	49	Count	173	222
	No	Mean		Mean	5.986	
		Count		Count	740	740
<i>Total</i>			49		913	962

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

		Pathfinder Office			<i>Total</i>	
		Yes		No		
Makinson District	Yes	Mean	5.331	Mean	5.593	
		Count	11	Count	88	99
	No	Mean		Mean	5.618	
		Count		Count	382	382
<i>Total</i>			11		470	481

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

		Pathfinder Office			<i>Total</i>	
		Yes		No		
Makinson District	Yes	Mean	5.690	Mean	6.308	
		Count	38	Count	85	123
	No	Mean		Mean	6.380	
		Count		Count	358	358
<i>Total</i>			38		443	481

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

		Pathfinder Office				<i>Total</i>
		Yes		No		
Makinson District	Yes	Mean	5.863	Mean	6.090	
		Count	34	Count	102	136
	No	Mean		Mean	6.101	
		Count		Count	464	464
<i>Total</i>			34		566	600

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

		Pathfinder Office				<i>Total</i>
		Yes		No		
Makinson District	Yes	Mean	5.036	Mean	5.735	
		Count	15	Count	71	86
	No	Mean		Mean	5.793	
		Count		Count	276	276
<i>Total</i>			15		347	362

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		29.00	12.743	0.068	1.213
	Median		23	13	0	1.101
	Sd		26.03	4.198	0.252	0.475
	Q10		7	7	0	0.829
	Q90		56	20	0	1.679
Offices in Makinson Districts	Mean	13.976	35.418	16.871	0.056	1.174
	Median	14.00	27	18	0	1.115
	Sd	1.383	31.086	5.978	0.231	0.305
	Q10	12.174	8	10	0	0.829
	Q90	15.68	71.5	23	0	1.543
All offices	Mean	2.952	30.459	13.688	0.065	1.204
	Median	0	24	13	0	1.112
	Sd	5.756	27.403	5.175	0.247	0.442
	Q10	0	8	7	0	0.829
	Q90	14	60	22	0	1.662

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

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

	(1)	(2)	(3)	(4)	(5)	(6)
Pathfinder Office	-0.742** (0.092)	-0.707** (0.102)	-0.541** (0.116)	-0.586** (0.116)	-0.585** (0.116)	-0.585** (0.116)
District Office	0.052 (0.081)	0.052 (0.081)	0.048 (0.081)	0.049 (0.081)	0.049 (0.081)	0.047 (0.080)
log Staff	0.456** (0.025)	0.456** (0.025)	0.487** (0.027)	0.486** (0.027)	0.486** (0.027)	0.488** (0.027)
Mean labour market conditions	-0.181** (0.047)	-0.183** (0.047)	-0.176** (0.046)	-0.170** (0.046)	-0.170** (0.046)	-0.171** (0.046)
Makinson District Status		-0.043 (0.052)	0.090 (0.069)	0.468** (0.160)	0.466** (0.160)	0.493** (0.144)
Makinson Status*Staff			-0.005** (0.002)	-0.005** (0.002)	-0.005** (0.002)	-0.005** (0.002)
Number of Offices in District				-0.002 (0.006)	-0.002 (0.006)	
Makinson Status*Number of offices				-0.024** (0.010)	-0.024** (0.010)	-0.026** (0.008)
% High grade staff in office					0.143 (0.610)	
Constant	4.799** (0.106)	4.809** (0.106)	4.705** (0.111)	4.725** (0.136)	4.730** (0.138)	4.697** (0.111)
Observations	962	962	962	962	962	962
R-squared	0.31	0.31	0.32	0.32	0.32	0.32

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 variables is Office Fixed Effect

	(1)	(2)	(3)	(4)	(5)	(6)
Makinson Office, staff <= 12	0.233 (0.173)	0.280 (0.157)				
Makinson Office, 12 < staff <= 25	0.297 (0.176)	0.350* (0.162)				
Makinson Office, 25 < staff <= 40	0.373* (0.168)	0.424** (0.155)				
Makinson Office, 40 < staff <= 60	0.349 (0.180)	0.398* (0.168)				
Makinson Office, staff > 60	-0.009 (0.194)	0.038 (0.184)	-0.333* (0.137)			-0.338* (0.136)
Makinson District Status			0.331* (0.153)	0.291 (0.153)	0.296 (0.156)	0.361** (0.137)
Makinson Office, staff > 50				-0.185 (0.124)		
Makinson Office, staff > 40					-0.095 (0.103)	
Number of Offices in District	-0.004 (0.006)		-0.004 (0.005)	-0.004 (0.006)	-0.004 (0.006)	
Makinson Status*Number of offices	-0.019* (0.009)	-0.023** (0.008)	-0.019* (0.009)	-0.018 (0.009)	-0.018 (0.009)	-0.023** (0.008)
Observations	962	962	962	962	962	962
R-squared	0.32	0.32	0.32	0.32	0.32	0.32

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

	1	2	3	4
District Log Staff	-0.018 (0.004)**	0.040 (0.020)*		
District Log (Job Entries/Staff)			0.002 (0.002)	-0.001 (0.002)
District Log Labour Market	0.010 (0.007)	0.018 (0.012)	0.021 (0.007)**	0.020 (0.012)
September 2002	-0.022 (0.005)**	-0.021 (0.003)**	-0.022 (0.005)**	-0.022 (0.004)**
December 2002	-0.010 (0.005)	-0.008 (0.004)*	-0.007 (0.005)	-0.009 (0.004)*
March 2003	-0.004 (0.005)	-0.003 (0.003)	-0.002 (0.005)	-0.004 (0.004)
Constant	-0.180 (0.007)**	-0.060 (0.069)	-0.165 (0.004)**	-0.161 (0.005)**
Observations	356	356	348	348
Number of districtid		90		90
R-squared	0.12	0.16	0.08	0.14

Table 11: Regressions on the Fixed Effect
 Dependent Variable is District CST Fixed Effect

	1	3	4	5	6	7
District log Staff	-0.055 (0.007)**	-0.057 (0.008)**	-0.057 (0.008)**	-0.059 (0.009)**	-0.070 (0.010)**	-0.072 (0.010)**
District Mean labour market conditions	-0.005 (0.008)	-0.005 (0.008)	-0.005 (0.008)	-0.005 (0.008)	-0.013 (0.009)	-0.013 (0.009)
Makinson District Status			-0.034 (0.135)	-0.020 (0.138)	-0.016 (0.135)	-0.005 (0.136)
Makinson Status*Staff				0.024 (0.046)	0.019 (0.045)	0.037 (0.053)
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		0.000 (0.001)	0.003 (0.009)	0.001 (0.010)	0.001 (0.010)	0.001 (0.010)
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	0.45	0.45	0.45	0.45	0.48	0.48

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

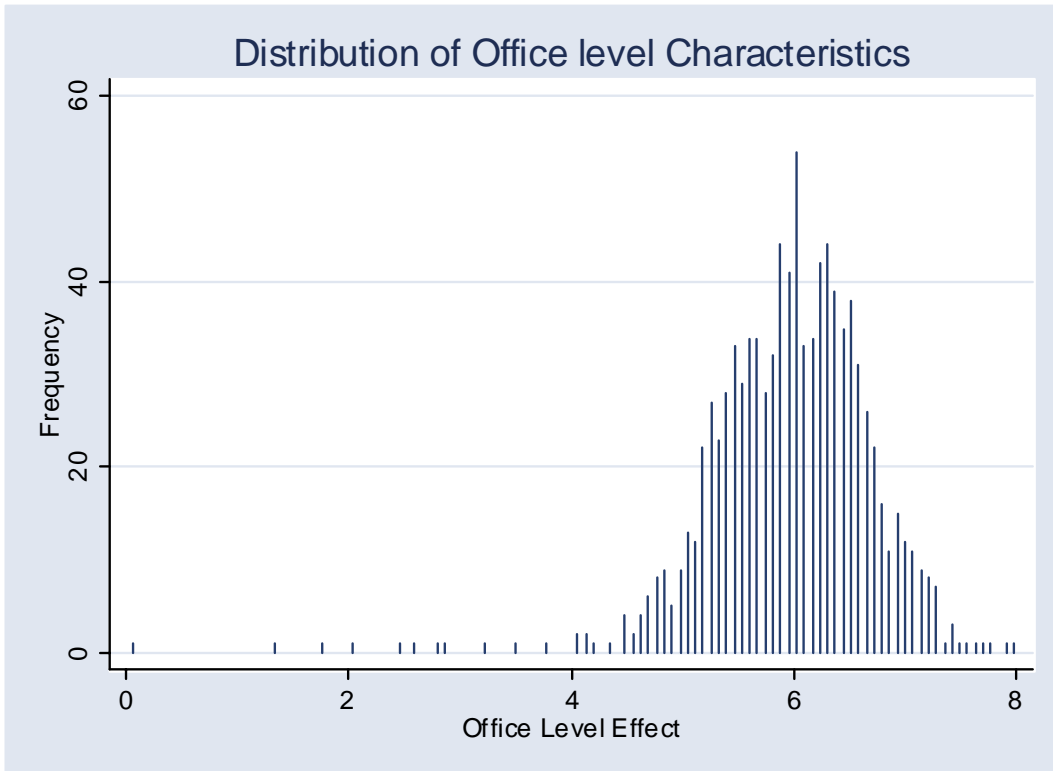


Figure 2: Distribution of Office Fixed Effects (Adjusted mean log TJEP) – by Pathfinder Office Status

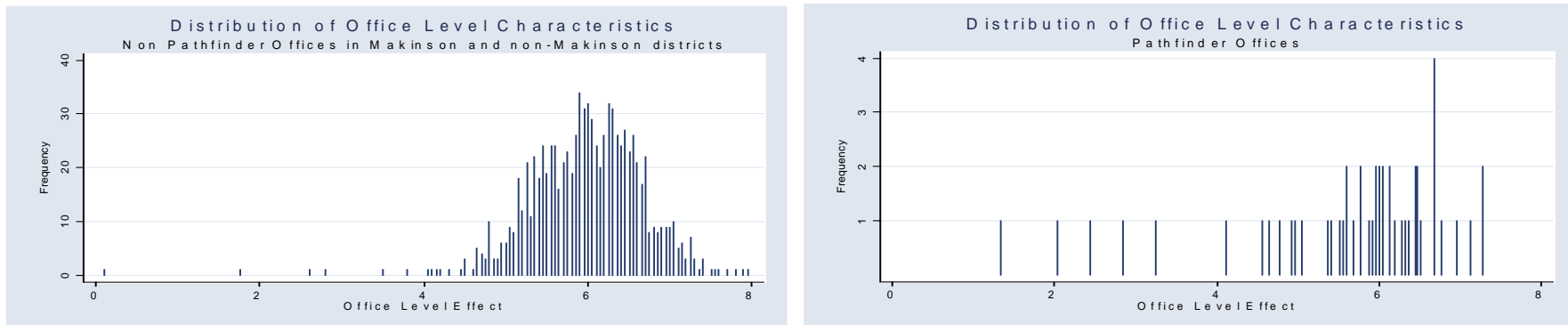


Figure 3: Distribution of Office Fixed Effects (Adjusted mean log TJEP) – by Pathfinder District Status

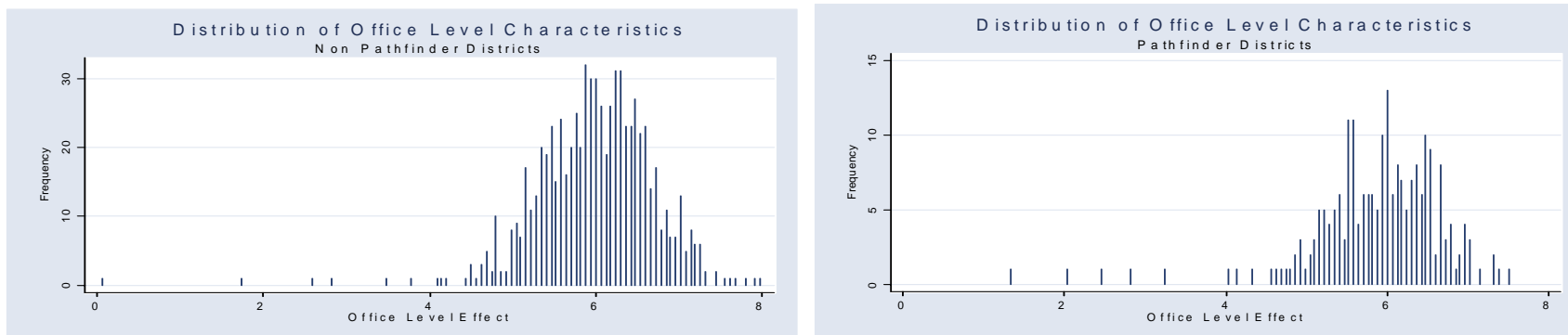


Figure 4: .. Distribution of Office Fixed Effects (Adjusted mean log TJEP) – by Pathfinder and Makinson Status

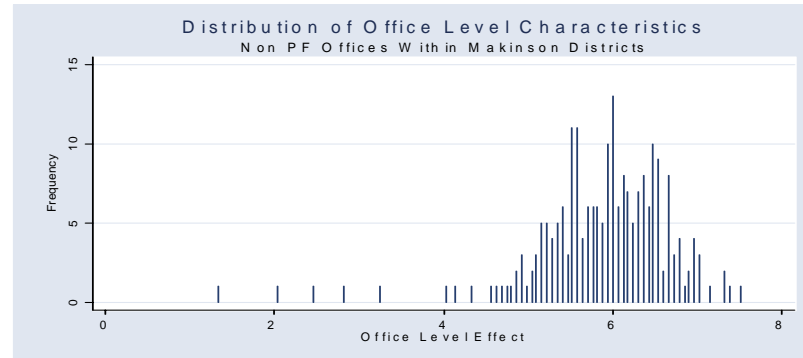
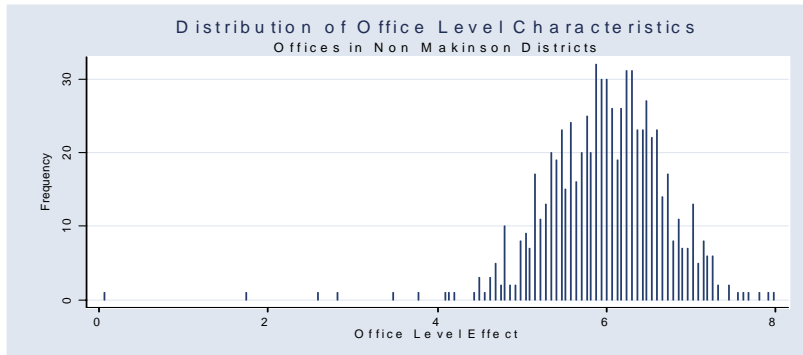
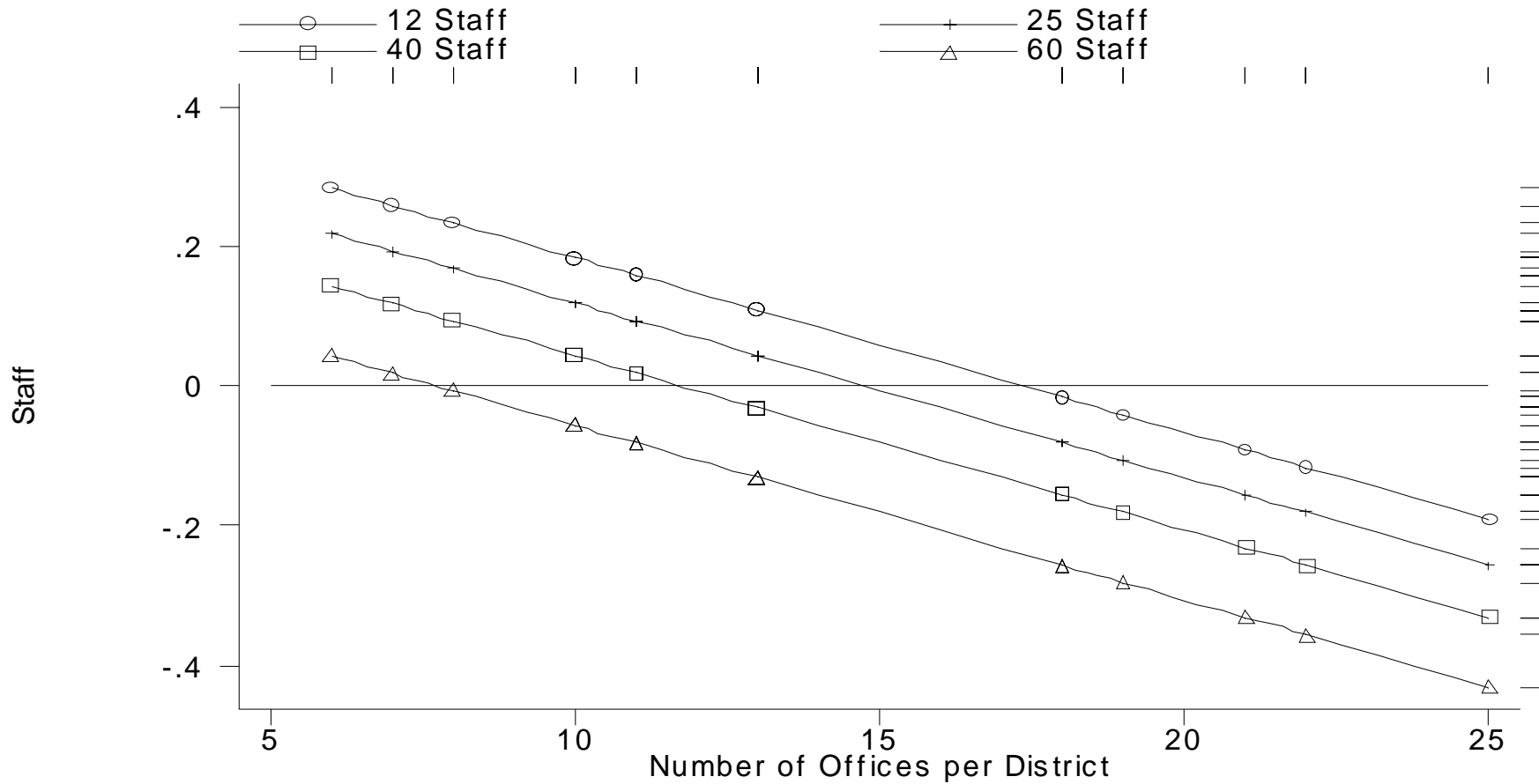


Figure 5



Makinson Effect for Various Number of Staff per Office

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7. Appendix A: A brief review of the economic theory of team incentives

A general insight from the economic literature on the theory of incentives in teams is that the effectiveness of group rewards on individual and group performance depends on the type of the organisation where the scheme is implemented and on the characteristics of its production process. More precisely there are several aspects related to the type of the organisation and to how output is produced and measured that need to be considered in designing the optimal incentive scheme. The optimal incentive scheme is that which delivers the desired effects on performance with the minimum cost for the designer.

In this section we briefly review the theory of incentives in teams. We focus on the predictions of how the optimal reward scheme should be designed and on the characteristics of public sector agencies that have an impact on the delivery of incentives. Given this we identify the points of strength and weaknesses of the incentive scheme designed at Jobcentre Plus.

The use of incentive schemes in teams

Incentive schemes are used whenever there are two parties writing a contract and one has imperfect information on some elements/aspects that have an important impact on the outcome of the transaction but cannot be contracted for. One example, which is relevant for our context, is the case of moral hazard. Problems of moral hazard arise in situations in which one individual (the principal) hires another to take an action for him as her “agent” and this latter has private information on the action (e.g. effort) he chooses.

If the action were observable, the contracting problem between the two individuals would be relatively straightforward and the contract would simply specify the exact action to be taken by the agent. However, when effort is not observable by the principal, the compensation scheme has to be designed in a way that indirectly gives the agent the incentive to take the correct action. In the case of individual production, paying an individual the full value of his output will induce the efficient level of effort, in that final output, if perfectly measured as in the case of a monetary outcome, provides a good indicator of the agent’s effort. The incentive to exert the desired level of effort is provided by linking the agent’s compensation to his performance. An incentive scheme can then be defined as a reward system where part or all of the reward depends on performance. The power of the incentive scheme is measured by how much the compensation depends on final output. High powered incentives schemes are those schemes where the proportion of the reward which depends on performance is predominant.

How precisely performance is measured is of paramount importance for the effectiveness of an incentive scheme. When a precise measure of output is available, the principal can better infer the agent’s effort from the output and hence can set higher incentives.

Delivering incentives in a team is more complex than in the case of individual output. In a team final output is made up by all team members’ contributions, and hence even if the principal observes final output perfectly, it is not a good indicator of each agent’s inputs. Holmstrom (1982) provides one of the seminal contributions to the theory of incentives in teams. He shows that, in a setting where team members depend on each other to produce final output, i.e where there are complementarities in production, if all the output of the team is shared among team members, team members are induced to free ride.

The intuition behind this idea is that paying an amount equal to total output to team members creates a negative externality for the team. If output is fully shared among team members, 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 the 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. Intuitively, this free-rider problem becomes greater in large organisations.

Holmstrom shows that it is possible to solve this free-rider problem by choosing an appropriate reward system. The optimal system of rewards in teams depends on how precisely output can be measured. First, if final output is perfectly measurable, a first best solution is attainable by imposing a system of group penalties whenever output falls below the desired level. This acts as an incentive to exert efficient levels of effort. Second, if output is measured with error (this will occur whenever output is not a monetary outcome) the size of the team becomes relevant for designing the optimal compensation scheme. Defining the optimal reward scheme is easier in small teams, where each agent has a substantial impact on the probability distribution of final output. In this case it is possible to elicit the appropriate level of effort through a reward system similar to the certainty case. In a large team, the contribution of each worker to joint production is less clear to identify and financial rewards are not enough to promote the desired action. The greater the uncertainty in output measurement and the greater the size of the team the more complex is the design of an optimal incentive scheme and explicit (financial) rewards will not be enough to get the desired actions. Some form of monitoring will become necessary.

The use of team-based rewards in the absence of complementarities in production

The Holmstrom analysis focuses on teams where agents' contributions to final output are interdependent. However, team-based rewards can also be used when the contribution of team members can be separately observed, so that there are no complementarities in production, but there are some positive aspects of teamwork that one might wish to promote.

Team-based rewards can be used to foster *cooperation* among team members. Milgrom-Roberts (1991) suggest that if co-operation within a group of individuals is important for the overall organisational objectives, then rewarding individual performance can detract from team performance by raising the marginal cost of effort in co-operating. Itoh (1991) analyses the relationship between financial incentives and 'helping' effort. He addresses the issue of whether it is always the case that, in moving from an individual based contract (i.e. one where individuals are paid only for their own output) towards one where rewards are based on teamwork, agents are induced to increase the level of helping effort. He finds that whether cooperation can be induced through financial rewards depends on the strategic interactions among agent's attitudes towards performing multiple tasks. In particular, agents can be induced to provide help, even for a small change in the wage schedule, if they get positive benefit from both types of effort. If, instead, tasks are similar and agents only care about the total amount of effort, they are reluctant to provide even a small amount of help. In this case a large perturbation of the individual-based contract is required to induce any helping effort from the individual.

Team based rewards may be used to benefit from the positive externalities of teamwork. Teamwork may facilitate a process of *communication and sharing of job experience*. It may also induce *peer monitoring*. If members of a team work in the same location and the organisation of work is such that they are able to observe each other, if their reward is linked to the team performance, they are more inclined to monitor how their peers are performing. This can help in enforcing proper levels of effort and tackle the free-rider problem. Teamwork can help insulate individuals against poor outcomes beyond their control as rewards are shared at a level bigger than the individual - *risk pooling*.

Which of these is more important depends on the organisation and the nature of output. In the context of Jobcentre Plus the positive externality of risk pooling created by the use of team-based rewards may be the most relevant. Final output in Jobcentre Plus consists of putting people into jobs. The creation of job entries is subject to the risk of adverse labour market conditions: an

unanticipated crisis in a local business may create substantial job losses, which may be difficult to tackle, whatever the effort of the staff in Jobcentre Plus. Achieving a given number of job entries not only depends on how hard staff at Jobcentre Plus work, but also on the type of the customer they deal with and the local labour market situation. This implies that the outcome of Jobcentre Plus is uncertain. Setting rewards conditional on individual performance would expose staff in Jobcentre Plus to too much risk in case of a local shock and hence would not be a good incentive device. If individual rewards are linked to the output of a whole district instead, the risk of not reaching a certain number of job entries due to some local shocks is spread among all the offices in the district and staff may be better motivated to achieve a targeted number of job entries.

Delivering incentives in the public sector

There are some characteristics of public sector agencies that play an important role in the design of an incentive scheme. Dixit (2000) provides an overview of the differences between the private and public sector and how these impact on the optimal incentive scheme. Here we briefly mention those that are relevant for Jobcentre Plus.

Measuring performance in the public sector

An important aspect in designing the optimal reward system is how easy output is to measure. In the public sector output is often vaguely measured. This means that the information on the actions of agents is quite difficult to infer from the available measure of performance. The theory suggests in this case that weaker incentive schemes should be used.

Multi-tasking

Public sector agencies are complex organisations and are generally required to deliver a range of outcomes. This has an important impact on the incentive scheme. In particular, the interaction among the different tasks affects the power of the incentive scheme: if actions are substitutes the use of high powered incentive schemes may have undesirable effects on overall performance. This is because exerting more effort on one task increases the marginal cost of any task that is a substitute and the agent can end up neglecting some tasks. In this case each outcome cannot be rewarded in isolation and lower powered incentives should be used.

An interesting case arises 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. Marx and MacDonald (2001) show that if the principal is unsure about the agent's preferences over tasks, setting rewards on success on individual tasks may be sub optimal in that it may induce workers to focus and specialise in the less costly tasks. Results suggest that in this situation the system of reward should be non-monotonic, in that it defines different rewards according to the observed failure, partial success or full success on all tasks. The authors show that it is useful to reward failure on all tasks to some degree since this reduces the risk the agent has to bear for spreading his time across multiple activities. Of course the reward for overall failure cannot be too large in that this outcome is easily achieved by the agent. Likewise the payment of success for achieving a subset of the tasks shouldn't be too large to avoid giving the agent an incentive to specialise only on some tasks. To avoid adverse specialisation it is typically optimal to reward no success more than partial success. In order to make general success attractive to the agent, since success on multiple activities is difficult to achieve, the compensation for succeeding must be very high. In conclusion, in an optimal contract, full success and only full success is rewarded highly and little specific compensation is awarded for each task.

Low powered incentive schemes should also 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.

In conclusion, in a multitasking environment higher incentive schemes may be vulnerable to gaming by agents. This needs to be given particular weight in the public sector where principals may face more risk than in the private sector due to the fact that (a) it is more difficult to diversify the risks of bad outcomes of public policies and (b) there are critical threshold levels of public tolerance for failure by politicians. So politicians and senior civil servants can be very risk averse (in contrast with the assumption of the standard model where principals are risk neutral and do not have any concern for risk). The consequence of this is that politicians and senior civil servants may be *more* inclined to use high powered incentive schemes rather than setting low powered incentives schemes.

8. Appendix B: Statistical Approach

First stage – estimate office average, conditioning on time-varying variables

We run the following as a fixed effect regression:

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

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 Team Based Incentive 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.

Second stage – analyse the distribution of office averages

We compare the distribution of ϕ_o across Pathfinder and non-Pathfinder offices, and across Makinson-district offices and non-Makinson-district offices. Finally, we compare non-Pathfinder offices in Makinson districts, and non-Makinson-district offices. We also control for differences in office size and labour market status. We then summarise these results using regression analysis.