Doing the Right Thing? Does Fair Share Capitalism Improve Workplace Performance?

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Abstract

The paper considers whether 'fair share capitalism' improves workplace productivity. 'Fair share capitalism' (FSC) is a generic term for the financial mechanism that links employees' pay to group or company performance. The traditional rationale for FSC is that where employers find it difficult or costly to monitor inputs they will choose to pay for outputs. FSC can then be used to align worker and employer objectives in maximising those outputs, provided any free-rider problem from group FSC can be overcome. This implies a potential to reduce managerial monitoring (MM) of inputs where one is able to reward outputs through FSC. At the same time, it seems likely that employers will only want to link pay to performance, and employees will only be prepared to shoulder the additional risk to their income of doing so, where there is autonomy in employee decision-making (EDM) which permits employees to affect output. These relationships are explored with data for the private sector from the 2004 British Workplace Employment Relations Survey (WERS 2004). FSC is positively associated with employer perceptions of EDM, but not employee perceptions of EDM. Contrary to expectations, FSC is strongly positively associated with MM. FSC is positively associated with labour productivity. However, the productivity results are sensitive to the type of FSC scheme, its coverage and the measure of labour productivity used. The positive association between productivity and FSC was most apparent in workplaces with high EDM.

Key words: fair share capitalism, payment methods, employee decision-making, managerial monitoring, productivity

JEL classification: J24, J33, L23, M52, M54

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Motivation

This paper considers whether 'fair share capitalism' improves workplace productivity. 'Fair share capitalism' (FSC) is a generic term for the financial mechanism that links employees' pay to group or company performance. In spite of increasing evidence of positive effects of FSC on productivity in the United States (Kruse and Blasi, 1995; Dube and Freeman, 2006; Freeman et al., 2006) the literature for the UK is in some disarray with few empirical regularities being replicated across studies and over time. Consequently there is a great deal of uncertainty about what effects FSC has on workplace productivity.

The paper contributes to this literature in two ways using linked employer-employee data from the British 2004 Workplace Employment Relations Survey (WERS). First, it tries to further understanding of FSC and its potential impact on behaviour by considering the conditions under which FSC operates in British workplaces. In particular, the focus is on the relationship between FSC and two theoretically important aspects of production, namely managerial monitoring (MM) of employee effort and autonomy in employee decision-making (EDM). The traditional rationale for FSC is that where employers find it difficult or costly to monitor inputs they will choose to pay for outputs. FSC can then be used to align worker and employer objectives in maximising those outputs, provided any free-rider problem from group FSC can be overcome. This implies a potential to reduce managerial monitoring (MM) of inputs where one is able to reward outputs through FSC. At the same time, it seems likely that employers will only want to link pay to performance, and employees will only be prepared to shoulder the additional risk to their income of doing so, where there is autonomy in employee decision-making (EDM) which permits employees to affect output. Our second contribution is to establish independent associations between FSC and labour productivity using accounting-based measures of productivity not hitherto used in the literature. The empirical analysis benefits from the use of a very rich set of FSC variables, permitting us to distinguish the effects of different forms of FSC and their workplace coverage, and from a comparison of their effects on three different productivity measures.

There are two other compelling reasons for exploring these issues in the UK at the present time. The first is that there is a new policy interest in the effects of FSC on employees and performance. Since 1997 when New Labour came to power there has been more favourable taxation of share ownership schemes at the expense of profit-related pay (PRP) schemes. PRP schemes are now fully taxable; deferred profit-sharing schemes have been outlawed and there are new tax breaks for some share ownership

schemes.[1] One reason for this shift in policy may be the expectation that share ownership can improve company performance. In 1998 the UK Chancellor of the Exchequer (HM Treasury, 1998: 1-2) said:

'Share ownership offers employees a real stake in their company…I want, through targeted reform, to reward long term commitment by employees, I want to encourage the new enterprise culture of team work in which everyone contributes and everyone benefits from success…Employee share ownership has a contribution to make towards increasing Britain's productivity…Research evidence indicates that employee share ownership has a positive effect on employee productivity'.

The second compelling reason for current interest in the effects of FSC is that it is widespread in British private sector workplaces, as indicated in Table 1.[2] The table shows the incidence and coverage of FSC in Britain as captured in WERS 2004 for private sector workplaces with 5 or more employees. Around one-fifth of workplaces had an employee share ownership scheme (ESOS), the most popular being SAYE followed by SIP and CSOP. One-quarter of workplaces had some form of profit-related pay (PRP) for non-managerial employees, and one-quarter had some form of group-based payment by results (PBR). The vast majority of share ownership schemes covered all non-managerial employees, as did over two-thirds of PRP schemes. For reasons that will become apparent later, PRP, group-based PBR and employee share-ownership are included in the measure of FSC. Half of all private sector workplaces had at least one such scheme, with 17 per cent having two and 6 per cent all three schemes. In addition, one-third of workplaces used some form of individual PBR with objectively determined performance criteria used to establish performance and 16 per cent had merit pay where pay is related to a subjective assessment of individual performance by a supervisor or manager. The second column in Table 1 shows the percentage of employees working in workplaces with these schemes. The percentages are higher than those for workplaces in column 1 indicating that these schemes were more prevalent in larger workplaces.

Table 1 also shows that one-tenth of private sector workplaces had introduced some form of performance-related pay over the last two years. In the United States shared forms of compensation (share ownership plans, stock options, profit and gain-sharing) have been rising since the 1980s, a trend that seems to have accompanied greater employee involvement in decision-making (Dube and Freeman, 2006). The trends are very different in the UK. Task discretion declined in Britain in the 1990s (Gallie et al., 2004). Both profit-related pay and share-ownership schemes grew in the 1980s, with government tax incentives playing some part, but their incidence has remained fairly static since then and there has been little change in the incidence of payments-by-results in Britain

[1] For details go to: http://www.hmrc.gov.uk/stats/emp_share_schemes/menu.htm.
[2] Appendix One provides details of the survey questions used to derive these variables.

since 1990 (Bryson, 2006).[3] This may account for the recent changes in tax treatment of FSC discussed above.

Table 1. FSC Coverage – Workplaces and Employees, 2004

	Workplaces (%)	Employees (%)
Individual PBR	34	43
Merit Pay	16	26
Group PBR	26	30
Profit Related Pay		
None	76	71
1-99% non-managerial	7	12
100% non-managerial	16	18
ESOSs		
None	80	68
Managers only	3	4
1-99% non-managerial	3	6
100% non-managerial	14	22
Share schemes		
SIP	7	11
SAYE	12	21
EMI	<1	<1
CSOP	6	11
Others	3	6
Introduced performance-related pay in last 2 years	10	13
FSC count (PRP+ESOS+Group PBR)		
0	50	38
1	27	30
2	17	24
3	6	9
Individual PBR	34	43

Source: Workplace Employment Relations Survey, 2004

Classifying workplaces according to the size of the workplace to which they belong, Table 2 shows that the incidence of FSC was considerably higher in workplaces belonging to large firms (250+ employees) than among workplaces belonging to small firms (<50 employees) and those belonging to medium-sized firms (50-249 employees). ESOS's were very unusual in the SME sector, yet existed in over two-fifths of workplaces belonging to large firms. PBR and merit pay were much more common in SME's than ESOS's, with around one-third of SME workplaces using at least one such scheme. However, they existed in over half of workplaces belonging to large firms. PRP was present in half of workplaces in large firms compared to one-quarter of SME workplaces.

[3] There is, however, evidence to the contrary. White et al. (2004: 89) say that over the 1990s the proportion of employees taking part in group-based incentives rose from 5 to 17 percent.

Table 2. Incidence of Variable Pay Schemes, by firm size

	All private sector	SME's	Small	Medium-sized	Large
Employee Share Ownership Schemes	20	2	1	5	44
Any merit/PBR:	44	34	34	35	57
Merit only:	9	8	8	6	11
PBR only:	28	22	22	26	37
Both:	6	4	4	2	10
Profit-related Pay	35	24	21	38	49

Source: Workplace Employment Relations Survey 2004

The rest of the paper is set out as follows. Section Two discusses the theory linking FSC to productivity and the roles played by MM and EDM. Section Three reviews the existing literature. Section Four introduces the data. Section Five presents results and Section Six concludes.

FSC is positively associated with employer perceptions of EDM, but not with employee perceptions of EDM. FSC is strongly positively associated with MM. FSC is positively associated with labour productivity, although FSC effects varied by the type of FSC scheme, its coverage and the measure of labour productivity used.

2
Theory

FSC may have an impact on workplace performance through worker productivity. The FSC effect on productivity may be a direct one arising from its effect on worker effort – what some have termed its 'motivational effect' (Mitchell et al., 1990). This occurs if workers optimise their income by raising effort where pay is linked to performance. FSC induces greater effort by equating the marginal value of an extra unit of output with the marginal cost of producing it (Weitzman and Kruse, 1990). This effort incentive effect applies to all FSC but may differ with the transparency of link between individual's performance and rewards, the degree to which the employee can alter pay through individual effort, and the time delay between assessed performance and reward.

FSC may also have indirect effects on worker effort where it educates employees about the link between pay and performance, reduces fears that increased productivity will result in lay-off, increases identification with the firm or improves worker morale or job satisfaction, thus reducing the disutility of effort. These effects may be apparent in reduced absenteeism as well. Worker sorting effects may occur where FSC attracts more able workers or increases (reduces) the likelihood that the least (most) able leave (Bishop, 1987; Mitchell et al., 1990).[4] In turn, this may raise employer incentives to invest in human capital.

Yet, as noted above, FSC is not present in all workplaces. A number of reasons have been advanced as to why firms do or do not adopt FSC.[5] For instance, the uneven distribution of FSC by firm size shown in Table 2 raises questions about the net benefits of FSC for SME's which are akin to those raised in the context of the employee involvement and high commitment practice literatures (Bryson, 1999). However, this paper focuses on the relationship between FSC and two other elements in the production process which influence both the incidence of FSC and productivity, namely employee decision-making (EDM) and managerial monitoring (MM) of employee inputs. Theoretical considerations would lead us to expect a positive relationship between EDM and FSC which, if

[4] Worker sorting effects may be beneficial to the firm but detrimental to other employers, leading to ambiguous outcomes for the economy as a whole.

[5] Empirical studies identify a variety of reasons that employers give for introducing FSC (Bryson and Millward, 1997). These include enhancing worker conditions (Osterman, 1994); managers wishing to make a name for themselves (Marchington et al., 1993); and recruitment and retention (Kessler and Purcell, 1992). In the USA Employee Share Option Plans (ESOP's) are used by employers as a tax efficient employee benefit, to raise productivity and as a way of warding off takeovers (Kruse and Blasi, 1995). It seems that employers rarely evaluate productivity gains of schemes to involve employees (Loveridge, 1980; Kessler and Purcell, 1992).

unaccounted for in empirical analysis, might lead to biased estimates of FSC links to productivity. The link between MM and FSC is more ambiguous, as outlined below, but again, omission of MM from empirical investigation could bias estimates of the FSC-productivity link.

Employers may offer substantial decision-making autonomy when the worker is capable of making better decisions than a supervisor or manager, for instance where the employee has 'private' information about the production process. In these circumstances the employer will seek to align the worker's decision-making with the employer's interests by offering an incentive to make the 'right' decisions, as principal-agent theory would suggest. FSC may also be used as an incentive for workers to share their 'private' information about the production process with the employer (Levine and Tyson, 1990; Jones, 1987). FSC financial incentives can also compensate employees for what they might perceive to be higher levels of job responsibility that come with decision-making autonomy, thus raising the net benefits from this additional investment. One might therefore expect a positive productivity effect arising from the combination of FSC and EDM. Without these financial incentives EDM might have negative effects on worker motivation (Ben-ner and Jones, 1995) and FSC may have little or no effect on productivity. The empirical analysis presented in this paper tests the proposition that FSC effects on productivity differ with the extent of EDM.

Turning to the relationship between FSC and MM, the common assumption is that employers will choose to pay employees via FSC where effort is not observable, or is very costly to observe, but outputs can be monitored. A piece-rate which allows the worker to decide how much to work and thus how much to get paid obviates the need for monitoring inputs (Simon, 1951). One might therefore anticipate a negative correlation between FSC and monitoring inputs for, as Marx remarked: "since the quality and intensity of work are…controlled by the form of the wage itself, the superintendence of labour becomes to a great extent superfluous" (Marx, 1976: 695).

In practice pure piece-rate pay is confined to occupations where monitoring inputs can be costly or difficult but outputs can easily be observed, such as salespeople working for commission and fruit pickers. Since pay for performance is usually combined with a fixed wage employees retain some discretion about the effort they put in so that the problem of worker shirking still provides a rationale for MM. Furthermore, from an alternative theoretical perspective MM and FSC can both be characterised as means of controlling workers.[6] Frederick Taylor viewed

[6] There is a long tradition of viewing performance-related pay in this way in Britain. Thus, originators of the British Workplace Industrial Relations Surveys reported their findings on payments-by-results (PBR) under the heading 'Systems of payment and control' alongside methods for controlling time keeping and payments while sick (Daniel and Millward, 1983: 200). They went on to argue (1983: 205): "Traditionally the purpose of PBR systems of pay has been to encourage workers to increase effort and output….In practice….there has been a tendency for PBR to become more an instrument of management control designed to ensure consistency of output." In the Donovan tradition, PBR was

output-based pay as an additional mechanism for the avoidance of shirking (what he termed "soldiering"). Edwards (1979) identifies payments-by-results as one aspect of the 'technical control' over workers prescribed by 'scientific management', one which may complement control through close supervision ('personal control') and through adherence to norms and codes, often embodied in appraisal, through which job progression is assured ('bureaucratic control'). Thus, it is possible that MM and FSC are complementary rather than substitutes.[7] This possibility appears more likely with the advent of ICT-based monitoring, including on-line monitoring, electronic point-of-sale equipment and electronic time recording, which has substantially reduced the cost of previously difficult-to-monitor jobs. White et al. (2004: 100) estimated that in 2002 ICT-based monitoring systems were 'already covering around half the workforce and appear to be spreading rapidly'. What is more, half of the workplaces with ICT monitoring were using it to evaluate individuals (op. cit., 96). This trend suggests that the traditional perception of a negative relationship between MM and FSC may no longer hold.

From the employer's perspective, group-based performance pay has an advantage over individual performance-based pay where the employer values coordinated work or the sharing of new ways to improve productivity. Group-based performance pay may also be appropriate where it is difficult to monitor individual workers' contribution to output. However, where FSC is based on group performance and the size of pay-offs matters to workers, rather than the existence of the pay/performance link per se, a free-rider problem arises since the income-sharing reward from worker effort is diluted by 1/n where n is the number of employees in the group (Weitzman and Kruse, 1990). In the classic Prisoner's Dilemma game workers choose to shirk if extra effort is undesirable and they do not know how others will behave (Blinder, 1990). However, in a repeat game scenario workers may punish or ostracize shirkers such that worker effort is self-enforcing. This may lead to higher output than a payment system without FSC and may also avoid incurring MM costs (Weitzman and Kruse, 1990).

This paper does not consider the role of worker preferences in the incidence and impact of FSC, other than with respect to the unit at which performance is measured. The optimal contract will balance the employer's desire for increased effort with the worker's concern about exposure of income to risk.[8] Worker concern about risk will be greater where pay is exposed to variability beyond the worker's direct influence. Thus worker concerns about income risk will be least pronounced where FSC is set at a level where the employee has greater influence over outcomes, that is, where it is individual, team or group based (Prendergast, 2002). Therefore one might anticipate stronger incentive effects where group-level FSC is set at a level that workers can influence,

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treated as part of the problem of shop floor bargaining and a cause of industrial strife (Daniel and Millward, 1983: 292).

[7] Gallie et al. (1998) show that control of workers through close supervision, pay incentives and appraisal systems all grew in Britain in the late 1980s and early 1990s.

[8] The optimal mix of base and variable pay is a function of degree of risk aversion and elasticity of output with respect to effort (Weitzman and Kruse, 1990).

namely team or group-level as opposed to workplace or organization-level.

The link between FSC and workplace productivity is not clear a priori, in spite of the potential positive effects noted above. First, FSC has the potential to demotivate workers. Sharing returns may reduce managers' incentive to manage (Jensen and Meckling, 1979). Increased ownership can result in an expectations gap if influence doesn't follow (Kruse and Blasi, 1995). Employees may perceive the pay/performance link to be unfair if, for instance, performance is measured with error or employees have not been consulted about the criteria governing the scheme (Marsden, 2004). Second, it may not be optimal to involve employees in the decision-making that might come with FSC (Jones, 1987). Employees may not be best placed to make decisions (Loveridge, 1980). Third, the pay-off to performance may not be large enough to induce greater discretionary effort on the part of workers. For example, the employer may limit the extent to which pay can vary with performance where the costs of obtaining productivity information are high, or when skills are firm-specific, reducing workers' outside options, thus inducing employer to moderate compensation for productivity.

The human resource management (HRM) literature offers some theoretical insights into the potential impact of FSC on firm productivity and performance. Although it is possible that FSC constitutes a 'best practice' and, as such, may have positive effects across most firms, the literature highlights the importance of interactions between practices and the context within which a firm operates. The 'comprehensiveness thesis' suggests any positive effect of FSC on performance will be positively correlated with the extent of its adoption (Ichniowski et al, 1996). The empirical analysis will test this proposition with one such measure, namely the percentage of employees covered by the scheme. The 'complementarities thesis' suggests practices are most effective when bundled with supportive practices (Pil and MacDuffie, 1996). In the case of FSC these practices might include EDM, as noted earlier. Following on from the discussion above, supportive practices may or may not include MM. The 'contingencies thesis' emphasises the role of contextual factors. Thus FSC may need to 'fit' with the firm's competitive strategy (Huselid, 1995; Schuler and Jackson, 1987). For example, it may be that firms competing on the basis of quantity and price, and not on the quality of output, will adopt individual piece-rates as their preferred method of performance-related pay. More broadly the costs and benefits of FSC may vary across firms as is the case with HRM in general, which is one reason why its spread across firms is uneven (Bryson et al., 2005). If the costs associated with FSC are high one might observe an effect of FSC on labour productivity that does not carry over to the firm's performance.[9] A positive effect on productivity but not on performance would also be consistent with scenarios in which employees were able to reap the rewards of higher marginal productivity through higher wages.

[9] For instance, the time and cost in consulting and informing employees must be weighed against the additional information flowing to managers (Levine and Tyson, 1990).

3

Empirical evidence on the productivity and performance effects of FSC

This section reviews the effects of FSC on workplace productivity and workplace performance, even though the empirical analysis concentrates on productivity. The review focuses primarily on research in Britain. This research is dominated by studies of the Workplace Employment Relations Surveys (WERS) that have been undertaken in 1980, 1984, 1990, 1998 and 2004. In these surveys the traditional measures of performance and productivity are subjective ordinal measures taken from HR managers which relate the workplace's performance or productivity to the average for the industry. These measures, which are described in more detail below, are therefore concerned with a workplace's performance relative to an industry average, although there are some studies that analyse productivity levels and profit levels as outcomes. The empirical analysis presented later uses a subjective measure of productivity relative to the industry average and two accounting measures of labour productivity levels.

Profit-related pay

Early studies relating profit-related pay (PRP) to financial performance found no significant effect (Blanchflower and Oswald, 1988) or a one-off positive effect (Bhargava, 1994). Subsequent studies have focused on the interaction between PRP, other FSC mechanisms and other HRM practices. Using WERS cross-sectional data for 1990 and 1998 and panel data for the period 1990-98 McNabb and Whitfield (1998, 2000) found significant interactions between PRP and share-ownership as well as interactions between PRP and employee involvement practices. However, these effects differed across their data sets. Using WERS data for 1998 Addison and Belfield (2000) were unable to replicate the results McNabb and Whitfield had obtained with 1990 data. Using 1990 WERS data Bryson (1999) finds positive effects of PRP are confined to workplaces belonging to large firms. In workplaces belonging to small firms the positive effects were confined to those engaged in broader employee

involvement initiatives. Most recently Conyon and Freeman (2004) estimated PRP effects with WERS cross-sectional and panel data for 1990 and 1998, as well as for a firm-level panel. Panel fixed effects suggested the positive effect of PRP on stock returns was due to unobserved firm characteristics. In WERS 1998 cross-sectional data the incidence of PRP was positively and significantly associated with performance, as was the percentage of employees covered by PRP. A switch towards PRP in the 1990-98 WERS panel was also correlated with improved performance. Interactions with communication and consultation were not significant.

Studies of productivity tend to find positive effects for PRP. Cable and Wilson (1989) identified positive effects of PRP in isolation and a positive effect in conjunction with employee involvement practices. Wadhwani and Wall (1990) found weak positive effects. Using WERS 1990 Fernie and Metcalf (1995) found FSC (mainly PRP) interactions with non-financial participation were crucial and differed in the union (positive) and non-union (negative) sectors. Effects on productivity also differed across PRP schemes: those with immediate payouts had positive effects for productivity growth whereas deferred payment schemes had no significant effect. More recently Robinson and Wilson (2006) analysed effects for a panel of manufacturing firms over the period 1988-1991. They found no PRP effects in isolation, but positive effects on productivity where there was a high level of MM. Conyon and Freeman (2004) found positive effects of tax approved PRP controlling for firm fixed effects. There were no significant interactions with information sharing or consultation. A negative effect of PRP schemes covering non-managers only is presented in tables but not commented on in the text. Conyon and Freeman (2004) also found positive effects of both PRP incidence and higher PRP coverage on productivity growth.[10]

Share-ownership schemes

British evidence on the effects of share ownership on financial performance is mixed. Blanchflower and Oswald (1988) find no significant effects using WERS cross-sectional data for 1984. Using WERS 1990 Bryson (1999) finds this non-significant effect holds for workplaces belonging to small and larger firms. Using cross-sectional and panel WERS data for 1990 and 1998 McNabb and Whitfield (1998, 2000) find share ownership per se is not significant but its interactions with other practices are. However, these interaction effects are unstable across data

[10] Evidence on PRP's effect on financial performance from other countries is generally positive, though far from overwhelming and holds irrespective of interactions with employee involvement practices. (See Doucouliagos et al. (1995) for a meta-analysis; Weitzman and Kruse (1990), Cooke (1994) and Card (1990) for the US). Turning to labour productivity Estrin et al. (1987) review evidence in the OECD and find that profit shares constituting 5-10 per cent of market wages elicited a 6 per cent rise in productivity. For the US Kruse (1993) finds cash plans have greater effect than deferred plans and that effects rise with the percentage of pay dependent on profits. Cooke (1994) finds positive effects in a sample of small, non-union manufacturing firms, whether PRP is used with team-working or not.

sets. Addison and Belfield's (2000) study using WERS 1998 also finds interaction effects are significant but their results differ from those obtained by McNabb and Whitfield, raising further questions about the stability of interaction effects across data sets and over time. Conyon and Freeman (2004) find the presence of share ownership is positively associated with performance in WERS 1998, the effect rising with the percentage of employees covered. However, in their firm-level panel analysis the positive effects of tax approved all-employee share option schemes become non-significant with the introduction of firm fixed effects.

Share ownership effects on labour productivity are also mixed. Using WERS 1990 Fernie and Metcalf (1995) find no significant effects on productivity levels or growth. Robinson and Wilson (2006), on the other hand, find positive effects for their panel of manufacturing firms over the period 1988-1991 (using pooled regression and panel estimation). However, the effects vary with technology. They also find a positive interaction with MM. Conyon and Freeman (2004) find positive effects of tax-approved share schemes emerge having controlled for firm fixed effects, indicating that in their sample these positive effects were correlated with unobserved firm effects that negatively affected productivity. They found no evidence of differential effects for managerial only versus non-managerial schemes, nor any evidence of interactions with information sharing or consultation. In their WERS analyses they found a positive effect of share ownership on productivity levels which rose with the percentage of non-managerial employees covered, but these effects were not significant for productivity growth. In the WERS 1990-98 Panel switching to share ownership was associated with improved productivity.[11]

Payments-by-results

Other forms of payments-by-results (PBR) have attracted less attention than PRP and share ownership in spite of their high incidence in Britain as indicated in Tables 1 and 2. Those studies that have considered PBR effects have used WERS. Bryson (1999) used WERS 1990 and focused on financial performance: he found no effects for merit pay but positive effects of individual PBR which were confined to small-firm workplaces. Fernie and Metcalf (1995), using the same data but concentrating on productivity, found a positive effect of merit pay on productivity growth but no other PBR effects. Conyon and Freeman (2004) used WERS 1998 to consider PBR effects on productivity and financial performance. They found positive effects of group-based PBR for productivity growth, but no other PBR effects.

[11] A meta-analysis reviewing ten studies found share ownership had positive productivity effects (Kruse and Blasi, 1995). However, there are questions about the applicability of the evidence for the US on ESOP's to the British case since ESOP's tend to operate in large firms and attract significant tax breaks.

Summary

In summary, the evidence from the literature on FSC and financial performance suggests FSC has a positive influence, at least in larger establishments and firms. This also appears to be the case for changes in subjective performance over time. Interactions with other practices produce results which are unstable across data sets. The effects of FSC also vary by scheme type and coverage, with share ownership effects tending to be statistically non-significant. Turning to productivity, PRP tends to have positive effects, the results for share ownership are more diverse, and interactions between FSC mechanisms and other practices are unstable over time.

In all these studies there is a great deal of uncertainty as to whether the effects identified are the causal effects of FSC. It is likely that there is non-random selection of firms and workers into and out of FSC. If this selection is correlated with FSC and not accounted for in the analysis then it will bias estimates of FSC. That bias may be upwards in cases where FSC is proxying the causal effect of being a 'good employer' where this is otherwise unobservable to the analyst. Omitted variables bias may also arise if FSC is picking up an increase in worker morale or effort occasioned by other practices linked to FSC such as autonomous EDM or better information and consultation with employees. Some of the studies reviewed above have used panel data to account for fixed differences between FSC and non-FSC employers. However, although this paper presents some analyses of the 1998-2004 Workplace Employment Relations Survey Panel most of the evidence comes from analysis of cross-sectional data. A second concern with cross-sectional data is that isolating an independent association between FSC and performance is not informative about the direction of causation. Reverse causation may affect estimates for PRP in particular, since respondents are more likely to identify the presence of PRP when profits are there to be shared. It also seems that, to the extent that causal inferences can be drawn about the impact of FSC, its effects are heterogeneous with respect to the type of FSC scheme, its coverage, its interaction with other practices, and the context in which it is found, including firm size.

4

Data

The data are the 2004 Workplace Employment Relations Survey (WERS 2004).[12] The paper analyses the 2004 cross-sectional survey of workplaces linked to employees in working in those workplaces. With the survey weights used throughout results are nationally representative of workplaces with 5 or more employees in Britain. Both the HR manager and employee survey have high response rates. In keeping with the rest of the literature analyses are confined to the private sector. In addition the 1998-2004 WERS Panel is used to analyse switching in FSC regimes. The panel is a follow-up survey of a random sub-set of a nationally-representative sample of workplaces with 10 or more employees interviewed in 1998.

Three measures of labour productivity were analysed. The first is taken from HR managers' responses to the question: 'Compared with other establishments in the same industry how would you assess your workplace's labour productivity?' Answers are ordered from 'a lot better than average' to 'a lot below average'. The responses 'a lot below' and 'below average' are collapsed due to the small number of respondents putting their establishment in these categories. Despite the fact that subjective ordered measures of productivity dominate the British literature there is some debate about the properties of these data and their value in estimating influences on productivity compared with accounting-type data.[13]

The paper compares results using this traditional measure with accounting measures collected for the first time in WERS using a Financial Performance Questionnaire (FPQ). [14] The first accounting-based measure is the log of gross output per worker (sometimes referred to as 'average labour productivity') and is derived by dividing total employment at the workplace into the total value of sales of goods and services over the past year. The second measure is the log of gross value-added per worker and is derived by subtracting the total value of purchases of goods, materials and services from total sales, and then dividing this figure by total

[12] For full details of the survey see Kersley et al. (2006) and Chaplin et al. (2005).
[13] For a discussion of the merits of alternative measures of productivity see Kersley et al. (2006: 287-289).
[14] A copy of the FPQ questionnaire can be downloaded at: http://www.wers2004.info/wers2004/crosssection.php#fpq. A full description of the data and how the questionnaire was administered can be found in Chaplin et al. (2005).

employment.[15] Sales per employee and value added per employee are highly correlated with one another.[16] However, the subjective measure of productivity relative to the industry average is not correlated with the accounting measures, suggesting that it contains different information from the other two dependent variables.

The response rate to the FPQ was 47 percent of all workplaces participating in WERS. This response rate, together with procedures adopted to exclude those with item non-response and outlier values reduced the size of the estimation sample for the FPQ productivity models compared with analyses of the subjective productivity measure.[17] Of the 1,512 cases with a valid HR manager subjective measure of productivity, 6% thought their workplace's productivity was either 'below' or 'a lot below average', 42% thought it was 'average', 42% thought it was 'better than average' and 10% described it as 'a lot above average'. Having trimmed the top and bottom 2.5 percent of values, 586 workplaces had valid data for productivity levels measured as sales per employee and 524 had valid data for the value-added per employee measure of labour productivity. The estimation samples are a little lower having dropped a small number of cases with missing data on independent variables.

The survey questions providing data on the FSC variables are given in Appendix One. Factor analyses of the five types of performance pay – individual payments-by-results, merit pay, group payments-by-results, share ownership and profit-related pay – identified two factors with eigen values above 1. Individual payments-by-results loaded with merit pay, as did share ownership and profit-related pay. Group-level payments-by-results had a lower loading which was pretty similar across the two factors. The FSC variables are the three group-level performance pay methods (share ownership, profit-related pay and group-based performance-related pay). They are combined into an additive scale presented in the last row of Table 1. Half of all workplaces have at least one of these pay methods and a further 10 percent had individual PBR or merit pay despite having no FSC, leaving 40 percent of all workplaces having no incentive pay at all. Of the 60 percent of workplaces with some form of incentive pay, two-thirds used more than one method, suggesting that various forms of incentive pay may be complements rather than substitutes.

The 1998-2004 WERS Panel replicates the FSC questions asked in the 1998 survey. These differ a little from those asked in 2004. For instance, they include deferred PRP schemes which were outlawed between the two

[15] In deriving logged value added per employee for estimation a constant was added to push the whole distribution above zero.
[16] Correlation coefficient is 0.39 p=0.0000. In simple regression of log sales per employee log added value per employee had a t-statistic of 8.91.
[17] Most of the data provided related to an accounting period ending in 2004, the remainder providing data for a period ending in 2003. Where data did not relate to a full calendar year it was adjusted accordingly. Workplaces with values below the 2.5th percentile and above the 97.5th percentiles of the productivity distributions were classified as outliers and removed from the analyses.

surveys. The incidence of FSC in the panel of workplaces with 10 or more employees in 1998 and 2004 is presented in the first two columns of Table 3. Rows 3-6 show the percentage of workplaces switching in and out of each FSC scheme. The incidence of PRP declined but this is wholly accounted for by the outlawing of deferred PRP schemes. The percentage with other PRP schemes remained constant at 42 per cent, but there is a great deal of switching once with 15 per cent of workplaces adopting PRP and 15 per cent ending schemes other than the deferred ones that were supposed to cease by law. The percentage of workplaces with Employee Share Ownership Schemes (ESOS) is constant at 20 per cent in both years. Yet 19 per cent of workplaces switch ESOS status in the two years: 10 per cent adopt ESOS while 9 per cent end their schemes. The incidence of PBR, on the other hand, rises markedly: it was present in 33 per cent of panel workplaces in 2004, up 10 percentage points from 1998. PBR adopters outnumbered those ending PBR by 2:1.

Table 3. FSC switching in the private sector, 1998-2004 Panel of Workplaces with 10 or more employees

	PRP exc deferred schemes	All PRP inc deferred schemes	Employee share ownership schemes	Any PRP/ESOS	Payments-by-results
All in 1998	42	47	20	48	23
All in 2004	42	40	20	49	33
Switching v staying:					
Neither 98 nor 04	43	40	71	37	58
98 not 04	15	18	9	14	9
04 not 98	15	13	10	15	18
98 and 04	27	29	11	34	15

Source: Workplace Employment Relations Panel Survey 1998-2004

This amount of switching might be interpreted as experimentation on the part of employers in search of the best arrangements or, less charitably, as flailing around unsure what to do. Alternatively, it may be that what is optimal changes over time and employers alter their practices accordingly. Another possibility is that what matters to employers is the 'newness' of a scheme rather than the attributes of a particular payment method. Perhaps it is a 'new' scheme that affects productivity rather than a particular type of scheme? Either way, this amount of switching implies marginal gains from incentive pay schemes: if the gains were bigger one might expect less switching. It also suggests that these changes are not major overhauls in employer practices, implying that the 'treatments' and the inputs required to maintain them are unlikely to be large. In turn, this suggests low switching costs. Evidence from the panel therefore indicates that any productivity effects arising from these schemes are unlikely to be huge.

The data contain measures of EDM taken from both managers and employees. Most of the analysis in this paper uses the employer perceptions of EDM for employees in the workplace's largest occupational group or 'core employees'. HR managers were asked:

"Using the scale on this card, to what extent would you say that individuals in **[TITLE OF THE LARGEST OCCUPATIONAL GROUP]** here have variety in their work, discretion over how they do their work, control over the pace at which they work, involvement in decisions over how their work is organized?"

The scale on the card was "a lot, some, a little, none". The distribution on each of these items is presented in Table 4. Factor analysis of these items produces a single factor with an eigen value of 2.21 and a Cronbach alpha of 0.73, suggesting that the items are aspects of a single construct. An additive scale was created running from 0 ('none' on all four items) to 12 ('a lot' on all four items). Ten per cent of workplaces scored less than 5 on this scale, 47 per cent scored 5-8 and 44 per cent scored 9 or more.

Table 4. Employer Perceptions of Employee Decision-making: Extent to which core employees have…..

	None	A little	Some	A lot
Variety in work	3	13	38	46
Discretion over how do work	6	23	43	28
Control over pace	8	24	41	26
Involvement in decisions over how work organised	8	19	44	28

Source: Workplace Employment Relations Survey 2004

Employees were asked: "In general, how much influence do you have over the following….What tasks you do in your job, the pace at which you work, how you do your work, the order in which you carry out tasks, the time you start or finish your working day?" with responses coded with the same scale as that used for employers. Factor analysis reveals a factor with an eigen value of 3.01 and a Cronbach alpha of 0.82. An additive scale was produced scoring items as per the employer-based EDM scale. Because there were five questions the scale ran from (0, 15). Thirteen per cent of employees scored fewer than six, 49 per cent scored 11 or more with 13 per cent scoring the maximum 15.

In regression models controlling for firm size and the nature of the core employees at the workplace the additive scale for EDM based on managerial perceptions was positively associated with each of the five employee perceptions of EDM.[18] The additive scale for employer

[18] The coefficients ranged between 0.02 and 0.03 and were statistically significant at a 99 per cent confidence level or above.

perceptions of EDM is positively correlated with the employee EDM scale in regressions controlling for firm size and the nature of core employees (coefficient is 0.12 t=5.17).[19] This indicates that the employer's perception of EDM is a good indicator of employees' own perceptions in that workplace. One reason for this is that employees' perceptions of their own decision-making autonomy are not idiosyncratic but are affected, to a large degree, by the workplace employing them. This is confirmed in a regression containing workplace dummy variables: these workplace fixed effects account for 19 per cent of the variance in the employee additive scale of EDM.

Both the employer and employee perceptions of EDM were strongly correlated with employee satisfaction with 'scope for using your own initiative' and 'involvement in decision-making at this workplace'.[20] Assuming that most workers express greater satisfaction with EDM the more they have, these findings suggest that both employer and employee perceptions of decision-making autonomy were indeed capturing EDM.

WERS 2004 contains a range of MM measures. They are presented in Table 5. They show that four-fifths of workplaces used managers or supervisors to monitor the quality of work and over one-third expected employees themselves to perform this role. One-quarter of workplaces used inspectors in separate departments while over two-fifths used customer surveys. It is usually assumed that FSC is used where MM of *inputs* is either costly, difficult or both whereas FSC entails MM of outputs in order to reward performance. Although the distinction between MM of inputs and outputs is important theoretically, it is difficult to distinguish the two empirically with the WERS data. Customer surveys and inspectors in other departments can only monitor outputs, not inputs, since they are forms of monitoring that are not physically proximate to the employee. Managers/supervisors and individual employees, on the other hand, are likely to be physically proximate to the worker who is being monitored. In this case monitoring may cover both inputs and outputs.

Three of the variables relate to monitoring through appraisal systems which sociologists classify as part of 'bureaucratic control' of workers, as note earlier. Such systems are likely to involve MM of both inputs and outputs. A dummy variable captures workplaces that have labour productivity targets and keep records of them, denoting a system which is devoting substantial resources to monitoring labour outputs. Another dummy variable identifies workplaces with supervisors who can dismiss employees for unsatisfactory performance, an indicator of management's ability to enforce effort through traditional forms of what Edwards (1979)

[19] As one might expect the correlation was a little stronger when the analysis of employee perceptions of EDM were confined to the core employees which the managers' scale applied to.

[20] In ordered probit models using the same set of independent variables used later in the productivity analysis, plus additional individual-level characteristics, the employer EDM scale was positive and significant with a t-statistic of around 4. The employee EDM scale had a t-value ranging from 31 to 44 depending on the model. These models are available from the authors upon request.

described as 'personal control'. In total, there are eleven items capturing MM of inputs and outputs. An additive scale simply counting the number of methods used at the workplace indicates a normally distributed curve peaking at two methods. The Cronbach's alpha for this measure is 0.58.

Table 5. Managerial Monitoring

	% workplaces
How monitor quality of work:	
Managers/supervisors	82
Inspectors in separate department	25
Individual employees	37
Records kept on faults/complaints	44
Customer Surveys	38
Other ways	8
Appraisal systems:	
All non-managerial employees have performance formally	57
appraised	21
Non-managerial appraisals conducted half yearly or quarterly	26
Non-managerial pay is linked to performance appraisal	
Have labour productivity target and keep records	28
Some/all supervisors can dismiss employees for	9
unsatisfactory performance	
N monitoring methods (0,11 count)	
0	1
1	15
2	18
3	16
4	17
5	11
6	11
7	6
8	4
9	1
10	1
11	<1

Source: Workplace Employment Relations Survey 2004. Note: the (0,11) count is an additive scale scoring 1 every time the workplace has one of the monitoring methods identified in the first 4 rows of the table

5
Analysis

The analysis proceeds as follows. First, the workplace correlates of FSC are identified, focusing on the relationship between FSC, EDM, and MM bearing in mind the expectation that FSC and EDM should be positively correlated while there is some uncertainty about the relationship between FSC and MM. The discussion above suggests that FSC may be negatively correlated with MM of inputs but positively correlated with MM of outputs. Then the link between FSC and labour productivity is investigated using the three measures of productivity. The first set of models incorporates indicators of FSC presence, thus testing the proposition that what matters for productivity is whether or not particular FSC schemes are in place. The second set of models replaces the FSC incidence variables with FSC employee coverage variables to test the proposition that what matters is the comprehensive coverage of FSC schemes, rather than their mere presence. The third set of models tests for interactions between FSC schemes to see if bundles of FSC practices have different effects. Throughout, models are run for the whole private sector sample followed by models for workplaces with high and low EDM to test the interaction of FSC with EDM.

All models are run with sampling weights that are the inverse of the probability of sample selection. The weights for the FPQ productivity models also adjust for non-response to the FPQ.[21] A robust estimator is used to account for heteroskedasticity. The paper makes no attempt to tackle the potential endogeneity of FSC. As noted earlier, it is likely that there is non-random selection of firms and workers into FSC, some of which will not be accounted for by the controls in our analysis. This may well upwardly bias estimates of FSC's 'impact' on productivity.[22]

[21] For full details see Chaplin et al. (2005).
[22] Due to limited space, there are other aspects of the FSC-productivity link not pursued in this paper, including heterogeneous effects by firm size and product strategy.

Table 6. Models for Fair Share Capitalism

	Model 1	**Model 2**
Incentive pay variables:		
Individual payments-by-results	0.578	0.612
	(4.84)**	(5.08)**
Merit pay	-0.163	-0.214
	(1.19)	(1.54)
Introduction of performance-based pay in last 2 years	0.627	0.604
	(4.29)**	(4.16)**
Managerial perceptions of employee decision-making autonomy	0.037	0.035
	(1.86)	(1.69)
Managerial monitoring variables:		
MM count (0,11)	0.115	
	(4.87)**	
MM: manager/supervisor		-0.041
		(0.31)
MM: inspectors		0.284
		(2.54)*
MM: individual employees		0.049
		(0.47)
MM: records kept on faults and complaints		0.098
		(0.85)
MM: customer surveys		0.156
		(1.33)
MM: other methods		0.019
		(0.11)
Has labour productivity targets/records		0.119
		(1.23)
Non-managerial pay is linked to performance appraisal		0.317
		(2.98)**
Non-managerial appraisals conducted half-yearly or quarterly		0.034
		(0.31)
All non-managerial employees have performance appraisal		0.033
		(0.29)
Supervisors can dismiss employees for poor performance		-0.255
		(1.78)
cut1:Constant	1.524	1.300
	(4.06)**	(3.27)**
cut2:Constant	2.601	2.391
	(6.78)**	(5.90)**
cut3:Constant	3.788	3.596
	(9.63)**	(8.63)**
Observations	1679	1679
Model fit	F(33,1646)=11.45	F(44,1635)=9.25
	P>F = .0000	P>F = .0000

Source: Workplace Employment Relations Survey 2004

Notes:
1. Dependent variable is FSC (0,3) which is an additive scale for group payments-by-results, profit-related pay and employee share ownership schemes.
2. All models contain the following controls: firm size (3 dummies), single establishment, SIC (12 dummies), workplace aged 25+ years, foreign owned, union recognition, occupation of core employees (9 dummies), many competitors, market for product/service is growing, managers are 15%+ of employees, supervisors are 20%+ of non-managerial employees, 60%+ employees use computers in daily duties, no employees regularly working from home
3. T-statistics in parentheses. *=statistically significant at 95% confidence level; **=statistically significant at 99% confidence level.

Table 6 estimates factors associated with FSC. FSC is treated as an ordinal variable estimated with ordered probit models. Individual payments-by-results and the introduction of performance-based pay in the previous two years were positively associated with FSC whereas merit pay was negatively signed but non-significant. MM was positively associated with FSC, the association strengthening with the number of MM methods. Breaking the additive MM scale into its component parts (Model 2), only the use of inspectors to monitor quality and linking pay to performance at appraisal were positively associated with FSC. The power of Supervisors to dismiss workers for poor performance was negatively associated with FSC at a 90 percent confidence level. As anticipated, FSC was significantly associated with EDM, though the association was only apparent when using managerial perceptions of EDM and the association was only significant at a 90 percent confidence level.

An alternative way to assess the effects of FSC on EDM in cross-sectional data is to identify those factors associated with initiatives to introduce performance-based pay. Probit analyses for the introduction of performance-based pay in the previous two years revealed a positive, independent association with initiatives to increase employee involvement.[23] This is consistent with the proposition that employers do seek to link FSC with EDM.

It is arguable that, if FSC was to have a substantial effect on productivity, it should operate as an efficiency wage raising wages rather than simply 'repackaging' wages. Regressions for individuals' wages indicated that this was not the case. It is also possible, given the theory regarding FSC as a form of risk-sharing between employers and employees, that workplace pay might be more variable in the presence of FSC. In fact, FSC was not significantly associated with the workplace-level pay distribution.[24] Taken together, these results indicate FSC was not significantly associated with wage outcomes for employees, so that one

[23] The analyses reported in this paragraph are available from the authors on request.
[24] The only incentive pay scheme associated with gross hourly pay was individual PBR, which was associated with higher wages. These models are available from the authors on request.

might not anticipate strong productivity effects if the magnitude of the pay-back is what mattered. On the other hand, if it is simply the link between pay and FSC that matters, productivity effects might nevertheless arise.

Table 7 estimates the association between the incidence of FSC and the three measures of labour productivity. Models (1) to (3) estimate ordered probits for the subjective measure of labour productivity relative to the industry average; models (4) to (6) estimate log sales per employee and models (7) to (9) estimate log value added per employee. In each case, the first model is for the whole private sector, the second is for workplaces with high EDM (those scoring more than 7 on the EDM scale of zero to 12) and the third is for workplaces with low EDM. The model fit statistics indicate that a reasonable percentage of the variance in labour productivity is accounted for by the models, with the explained variance rising when the sample is split by high and low EDM.

Share ownership schemes are positively associated with labour productivity on all three measures. In each case the association is stronger in high EDM workplaces, though the differential is not particularly pronounced. PRP only has statistically significant effects for value added per employee where it is positively associated with productivity in high-EDM workplaces and negatively associated with productivity in low-EDM workplaces. Taken together these results are suggestive of complementarity between some forms of FSC and EDM. Group PBR remains non-significant throughout, as does the recent introduction of performance-based pay. Individual financial incentives are also associated with labour productivity, individual PBR having a negative association with accounting measures of productivity in low-EDM workplaces, while merit pay is positively associated with value-added in low-EDM workplaces. The effects of EDM for the whole private sector are unclear: it is weakly positively associated with the subjective measure of labour productivity and weakly negatively associated with sales per employee. Similarly, the results from MM are unclear: it is positively associated with the subjective measure of labour productivity and negatively associated with sales per employee in high-EDM workplaces.

Table 8 runs models identical to those in Table 7 but replaces the incidence of profit-related pay and share ownership schemes with their coverage of employees. This results in a marginal improvement in the fit of the models. Share ownership has a stronger positive association with labour productivity when 100% of non-managerial employees are covered by a scheme, a finding that is apparent for all three measures of productivity. This result also holds in high EDM and low-EDM workplaces – with the exception of value-added per employee in high-EDM workplaces. Managerial-only share schemes had little effect on productivity, except in the case of value-added per employee where they were negatively associated with productivity in low-EDM workplaces. Results are very different with respect to PRP: although there is some evidence in support of the comprehensiveness thesis in the whole sample and high-EDM samples when estimating the subjective measure of productivity relative to the industry average, there is no support for the

thesis using the accounting measures of productivity. If anything, 100% PRP schemes are associated with lower value-added per employee than having no scheme at all or having a scheme with partial coverage. So, whereas the ESOS results lend some support to the comprehensiveness thesis outlined earlier, the PRP results do not.

Table 9 replaces the FSC coverage variables with interactions between PRP, ESOS and group PBR to test the proposition that what matters is the mix of financial incentives, rather than their incidence in isolation or their coverage of employees. The new variables do not improve the fit of the models but they are informative since they indicate that the combination of FSC schemes is crucial to understanding their association with labour productivity. Single schemes in isolation – PRP, ESOS or group PBR – are either not significantly associated with labour productivity, or are negatively associated with it. This is true of share ownership schemes which in earlier models tended to be positively associated with labour productivity. The negative association between share ownership and labour productivity is particularly marked in high-EDM workplaces. However, where share ownership exists in combination with either profit-related pay or group PBR, it is positively associated with labour productivity. These effects are less pronounced in low-EDM workplaces, with the exception of the combination of share ownership and group PBR which is only positively associated with value-added per employee in low-EDM workplaces. The effects of having all three FSC schemes together are not overwhelming: their effect in combination is only positively associated with the subjective measure of labour productivity in the whole sample model. Taken together these results indicate clearly that FSC's associations with labour productivity depend on the combination of FSC schemes and its interaction with EDM.

To get some understanding of the importance of these FSC interaction effects, the Venn diagram in Figure 1 shows the incidence of FSC combinations in the private sector. The diagram covers half of all workplaces with 5 or more employees in the private sector: the other half have no group-based incentive payments at all. Around half of those with some FSC have single isolated schemes, that is, the regime that performed so poorly in the labour productivity models in Table 9. The remainder combine ESOS, PRP and group PBR in some way, with 6 percent of private sector workplaces having all three schemes. The combination of ESOS and PRP which performed so well is only present in 6 percent of private sector workplaces, which the combination of ESOS and group PBR accounts for another 3 percent.

Summary

FSC is positively associated with labour productivity. Although FSC effects varied with the measure of labour productivity used, results were fairly consistent across the three productivity measures. FSC effects differed by type of FSC scheme. Share ownership schemes had the clearest positive association with productivity. However, interactions between FSC schemes revealed that this positive association was confined to instances in which share ownership schemes were combined with profit-related pay

or group payments-by-results schemes. In isolation, share ownership was associated with lower productivity, as were PRP and group PBR in isolation. Employee coverage of FSC schemes also mattered. The positive association between share ownership and productivity was most pronounced when all non-managerial employees were covered by the scheme, lending some support to the 'comprehensiveness' thesis outlined earlier. However, this was not apparent in the case of PRP. Other financial incentives such as individual PBR and merit pay were rarely associated with productivity. Nor was the recent introduction of performance-based pay. Perhaps most striking of all was the fact that the positive links between FSC and productivity were much stronger in high EDM workplaces than in low EDM workplaces, a finding one might have expected given the theory governing the conditions under which one would expect FSC to improve productivity.

Table 7. Labour Productivity and Incidence of FSC

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	LABPROD			LNTE			LNGVAE		
	All	High EDM	Low EDM	All	High EDM	Low EDM	All	High EDM	Low EDM
MM (0,11 scale)	0.057	0.061	0.055	0.001	-0.066	0.050	-0.000	-0.001	0.002
	(2.16)*	(1.72)	(1.28)	(0.04)	(2.49)*	(1.35)	(0.16)	(0.56)	(0.69)
EDM	0.040			-0.034			-0.000		
	(1.81)			(1.79)			(0.11)		
Individual PBR	-0.029	-0.027	-0.122	-0.251	-0.027	-0.583	-0.015	-0.001	-0.024
	(0.18)	(0.14)	(0.46)	(1.57)	(0.13)	(2.59)**	(1.44)	(0.09)	(2.02)*
Merit pay	0.169	0.129	0.186	0.115	-0.031	0.362	0.021	0.002	0.032
	(0.93)	(0.61)	(0.61)	(0.64)	(0.14)	(1.26)	(1.70)	(0.17)	(2.10)*
Group PBR	0.011	-0.016	0.139	0.011	0.090	-0.174	0.001	-0.003	-0.001
	(0.08)	(0.10)	(0.66)	(0.09)	(0.60)	(0.95)	(0.07)	(0.22)	(0.07)
PRP	0.116	0.216	0.026	-0.050	0.133	-0.140	-0.003	0.021	-0.020
	(1.09)	(1.59)	(0.16)	(0.39)	(0.98)	(0.85)	(0.37)	(2.63)**	(2.04)*
ESOS	0.268	0.290	0.072	0.411	0.444	0.329	0.036	0.051	0.027
	(1.99)*	(1.52)	(0.34)	(2.66)**	(2.55)*	(1.49)	(2.84)**	(2.87)**	(2.34)*
Introduction of performance-based pay	-0.021	-0.054	0.173	0.029	0.059	0.229	-0.006	0.017	-0.020
	(0.15)	(0.35)	(0.68)	(0.24)	(0.43)	(0.93)	(0.62)	(1.41)	(1.51)
cut1:Constant	-0.982	-1.601	-1.373						
	(2.68)**	(4.15)**	(2.99)**						
cut2:Constant	0.639	0.101	0.303						
	(1.69)	(0.26)	(0.66)						
cut3:Constant	2.100	1.741	1.669						
	(5.40)**	(4.45)**	(3.55)**						

Constant				4.369	3.586	4.239	6.553	6.507	6.540
				(13.62)**	(10.34)**	(8.71)**	(270.40)**	(247.12)**	(190.95)**
Observations	1487	781	706	549	259	290	491	233	258
F-test/ R-squared	36,1451 =3.43	35,1459 =4.00	35,1459 =2.31	0.52	0.60	0.58	0.30	0.42	0.50

Notes:
1. Source: Workplace Employment Relations Survey 2004.
2. See notes to Table 6 for controls.
3. T-statistics in parentheses. *=statistically significant at 95% confidence level; **=statistically significant at 99% confidence level.

Table 8. Labour Productivity and Coverage of FSC

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	LABPROD			LNTE			LNGVAE		
	All	High EDM	Low EDM	All	High EDM	Low EDM	All	High EDM	Low EDM
MM (0,11 scale)	0.059	0.066	0.060	0.011	-0.062	0.068	-0.000	-0.001	0.002
	(2.22)*	(1.93)	(1.36)	(0.42)	(2.23)*	(1.96)	(0.03)	(0.75)	(0.67)
EDM	0.037			-0.032			-0.000		
	(1.72)			(1.72)			(0.08)		
Individual PBR	-0.024	-0.022	-0.111	-0.279	-0.082	-0.597	-0.018	-0.007	-0.029
	(0.15)	(0.11)	(0.43)	(1.82)	(0.42)	(2.86)**	(1.76)	(0.74)	(2.55)*
Merit pay	0.181	0.148	0.183	0.108	-0.030	0.264	0.020	0.001	0.027
	(1.01)	(0.70)	(0.61)	(0.62)	(0.14)	(1.06)	(1.60)	(0.10)	(1.92)
Group PBR	-0.007	-0.031	0.112	0.011	0.088	-0.149	-0.000	-0.001	-0.005
	(0.05)	(0.20)	(0.54)	(0.09)	(0.57)	(0.89)	(0.01)	(0.06)	(0.48)
PRP (ref: none)									
1-99% covered	-0.095	-0.069	-0.082	0.007	0.289	-0.281	0.023	0.053	0.009
	(0.51)	(0.26)	(0.28)	(0.03)	(1.21)	(0.96)	(1.45)	(3.21)**	(0.52)
100% covered	0.237	0.476	-0.061	-0.262	-0.034	-0.361	-0.015	0.002	-0.023
	(1.80)	(2.72)**	(0.33)	(1.32)	(0.24)	(1.41)	(1.90)	(0.21)	(2.64)**
ESOS (ref: none)									
Managerial only	0.134	0.232	-0.149	0.420	0.327	0.414	0.003	0.055	-0.056
	(0.72)	(0.83)	(0.52)	(1.75)	(1.55)	(0.85)	(0.11)	(1.71)	(2.76)**
1-99% non-managerials	-0.095	-0.333	-0.195	0.257	0.394	-0.178	0.006	0.062	-0.031
	(0.34)	(1.02)	(0.42)	(1.23)	(2.48)*	(0.50)	(0.37)	(3.70)**	(1.62)
100% non-managerials	0.347	0.331	0.185	0.486	0.566	0.426	0.047	0.062	0.038
	(2.31)*	(1.52)	(0.82)	(2.78)**	(2.35)*	(1.88)	(3.17)**	(2.41)*	(3.33)**

Introduction of performance-based pay	0.010	-0.070	0.203	0.023	0.091	0.205	-0.003	0.022	-0.018
	(0.07)	(0.47)	(0.84)	(0.21)	(0.62)	(0.89)	(0.32)	(1.85)	(1.55)
cut1:Constant	-1.019	-1.691	-1.336						
	(2.79)**	(4.43)**	(2.84)**						
cut2:Constant	0.611	0.031	0.345						
	(1.62)	(0.08)	(0.73)						
cut3:Constant	2.079	1.693	1.715						
	(5.34)**	(4.33)**	(3.57)**						
Constant				4.409	3.725	4.428	6.557	6.521	6.559
				(14.13)**	(11.21)**	(8.74)**	(281.14)**	(284.86)**	(183.32)**
Observations	1486	781	705	549	259	290	491	233	258
F-test/ R-squared	39,1447=3.29	38,1455=3.76	38,1455=2.07	0.53	0.61	0.59	0.33	0.44	0.53

Notes:
1. Source: Workplace Employment Relations Survey 2004.
2. See notes to Table 6 for controls.
3. T-statistics in parentheses. *=statistically significant at 95% confidence level; **=statistically significant at 99% confidence level.

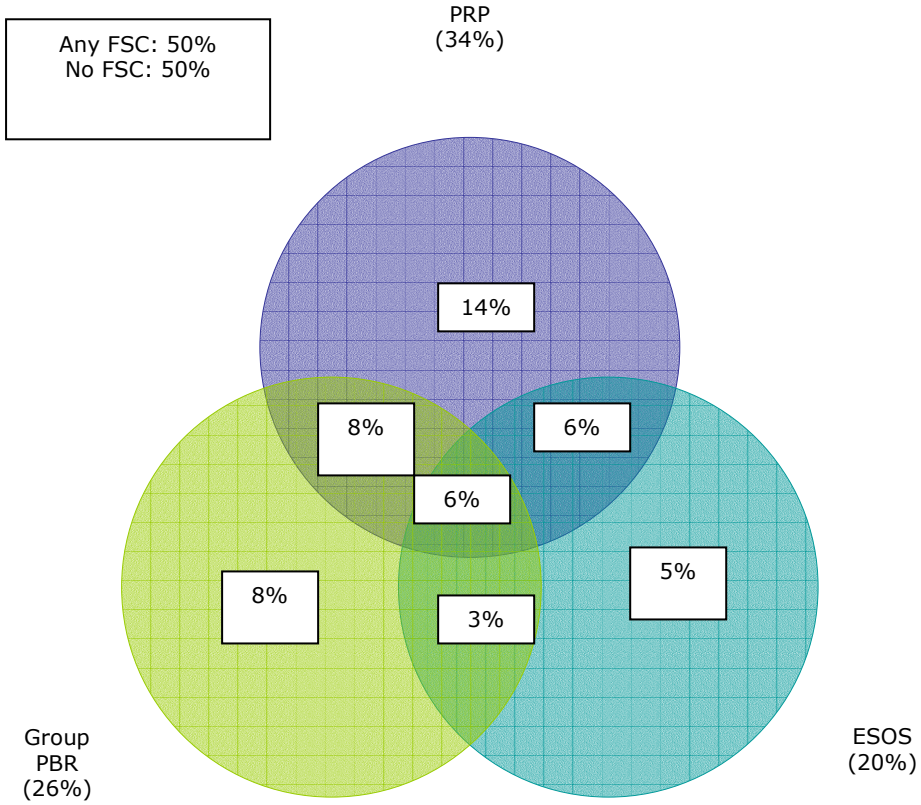
Table 9. Labour Productivity and FSC Combinations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	LABPROD			LNTE			LNGVAE		
	All	High EDM	Low EDM	All	High EDM	Low EDM	All	High EDM	Low EDM
MM (0,11 scale)	0.059	0.066	0.053	-0.001	-0.066	0.039	-0.000	-0.001	0.001
	(2.25)*	(1.90)	(1.24)	(0.05)	(2.54)*	(1.15)	(0.23)	(0.66)	(0.38)
EDM	0.041			-0.035			-0.000		
	(1.93)			(1.87)			(0.38)		
Individual PBR	-0.045	-0.061	-0.097	-0.219	-0.032	-0.564	-0.007	0.004	-0.020
	(0.28)	(0.31)	(0.37)	(1.39)	(0.14)	(2.58)*	(0.73)	(0.33)	(1.76)
Merit pay	0.168	0.117	0.158	0.141	0.014	0.409	0.012	-0.001	0.021
	(0.91)	(0.55)	(0.51)	(0.77)	(0.06)	(1.45)	(1.04)	(0.09)	(1.52)
PRP+ESOS+ group PBR	0.398	0.377	0.316	0.130	0.548	-0.249	0.012	0.045	-0.002
	(1.98)*	(1.45)	(1.09)	(0.48)	(1.89)	(0.66)	(0.63)	(1.83)	(0.07)
ESOS+PRP	0.264	0.348	0.107	0.309	0.408	0.223	0.022	0.058	-0.001
	(2.34)*	(2.15)*	(0.63)	(2.71)**	(3.45)**	(1.10)	(1.71)	(3.58)**	(0.12)
ESOS+group PBR	0.201	0.260	0.182	0.380	0.415	0.334	0.045	-0.009	0.039
	(1.76)	(1.66)	(0.72)	(2.11)*	(1.54)	(1.92)	(2.46)*	(1.42)	(2.40)*
PRP+ group PBR	-0.014	0.057	-0.057	0.007	0.130	-0.119	0.001	0.012	-0.006
	(0.14)	(0.45)	(0.39)	(0.08)	(1.14)	(1.12)	(0.19)	(1.68)	(0.79)
ESOS only	-0.406	-0.733	-0.304	-0.371	-0.362	-0.263	-0.059	-0.039	-0.009
	(1.82)	(2.60)**	(0.78)	(1.60)	(0.95)	(0.92)	(2.35)*	(2.02)*	(0.35)
Group PBR only	-0.012	-0.220	0.217	-0.268	-0.255	-0.273	-0.066	-0.008	-0.057
	(0.06)	(0.85)	(0.55)	(0.90)	(0.60)	(0.79)	(3.08)**	(0.63)	(3.01)**
PRP only	-0.057	-0.129	0.113	-0.301	-0.290	-0.159	-0.032	-0.064	-0.010
	(0.30)	(0.54)	(0.39)	(1.58)	(1.70)	(0.52)	(2.36)*	(3.65)**	(0.83)

Introduction of performance-based pay	0.015	-0.002	0.214	0.001	0.064	0.146	-0.007	0.018	-0.016
	(0.11)	(0.01)	(0.85)	(0.00)	(0.47)	(0.58)	(0.63)	(1.59)	(1.13)
cut1:Constant	-0.955	-1.561	-1.378						
	(2.64)**	(4.01)**	(3.03)**						
cut2:Constant	0.673	0.151	0.305						
	(1.81)	(0.38)	(0.67)						
cut3:Constant	2.146	1.811	1.683						
	(5.60)**	(4.56)**	(3.62)**						
Constant				4.334	3.604	4.128	6.549	6.487	6.538
				(13.80)**	(10.62)**	(8.02)**	(272.73)**	(246.05)**	(194.00)**
Observations	1490	782	708	550	259	291	492	233	259
R-squared/f-test	40,1450=3.21	39,1458=3.77	39,1458=2.35	0.53	0.61	0.58	0.33	0.48	0.51

Notes:
1. Source: Workplace Employment Relations Survey 2004.
2. See notes to Table 6 for controls.
3. T-statistics in parentheses. *=statistically significant at 95% confidence level; **=statistically significant at 99% confidence level.

Figure 1: Incidence of FSC Combinations



6

Discussion and Conclusions

The traditional rationale for FSC is that where employers find it difficult or costly to monitor inputs they will choose to pay for outputs. FSC can then be used to align worker and employer objectives in maximising those outputs, provided any free-rider problem from group FSC can be overcome. This implies a potential to reduce managerial monitoring (MM) of inputs where one is able to reward outputs through FSC. At the same time, it seems likely that employers will only want to link pay to performance, and employees will only be prepared to shoulder the additional risk to their income of doing so, where there is autonomy in employee decision-making (EDM) which permits employees to affect output.

Using nationally representative British workplace data the paper shows FSC is positively associated with employer perceptions of EDM, but not employee perceptions of EDM. At the same time, FSC is strongly positively associated with MM. To the extent that our MM variables are measuring the monitoring of outputs, this is to be expected. In fact, as discussed earlier, our MM proxies are likely to identify the monitoring of both inputs and outputs. Although a traditional principal-agent perspective would indicate that FSC and MM may be substitutes for one another, Edwards (1979) and others have identified FSC as one aspect of the 'technical control' over workers, one which may complement control through close supervision ('personal control') and through adherence to norms and codes, often embodied in appraisal, through which job progression is assured ('bureaucratic control'). From this theoretical perspective it is perhaps less surprising to find MM and FSC co-existing. Furthermore, the falling costs of ICT-based MM may have contributed to more pervasive MM.

FSC is positively associated with labour productivity. Although FSC effects varied with the measure of labour productivity used, results were fairly consistent across the three productivity measures. FSC effects differed by type of FSC scheme. Share ownership schemes had the clearest positive association with productivity. However, interactions between FSC schemes revealed that this positive association was confined to instances in which share ownership schemes were combined with profit-related pay or group payments-by-results schemes. In isolation, share ownership was associated with lower productivity, as were PRP and group PBR in isolation. Employee coverage of FSC schemes also mattered. The positive association between share ownership and productivity was most

pronounced when all non-managerial employees were covered by the scheme, lending some support to the 'comprehensiveness' thesis outlined earlier. However, this was not apparent in the case of PRP. Other financial incentives such as individual PBR and merit pay were rarely associated with productivity. Nor was the recent introduction of performance-based pay. Perhaps most striking of all was the fact that the positive links between FSC and productivity were much stronger in high EDM workplaces than in low EDM workplaces, a finding one might have expected given the theory governing the conditions under which one would expect FSC to improve productivity.

The data contain no information on the size of the pay off to workers arising from FSC. In wage equations, only individual payments-by-results were associated with higher wages, and FSC had no effect on the workplace wage distribution. Furthermore, there was a great deal of switching between FSC schemes in the 1998-2004 panel survey. Together, these findings suggest that the FSC in Britain is not perhaps the strongest form of FSC, and may have a less significant impact on pay than in the USA, for instance. Thus, any effect it has on productivity may arise from the fact of a link between pay and performance, rather than the size of payments.

There are a number of caveats to these findings. First, the analysis takes no account of the potential endogeneity of FSC, so one might expect the results to be an upper bound estimate of FSC effects on productivity. In any event, the paper can make no strong claims to having identified the causal relationship between FSC and productivity. Second, the data contain no information at employee-level as to who receives various forms of FSC. Therefore one can not link incentive payments directly to employee-level outcomes such as motivation and commitment so the paper has little to say about what lies in the 'black box' linking FSC to productivity. It is possible to do more with WERS in this respect, however, by looking at FSC links to labour turnover, absenteeism and other outcomes relative to productivity. Third, the paper presents no evidence on the link between FSC and financial performance. It is unclear what the net benefits of FSC might be to employers, even when there are productivity gains, if these can be outweighed by the costs of adoption and maintenance of FSC. Fourth, there is little investigation of the potential heterogeneity of FSC gains to different sorts of workplace, other than with respect to EDM. For instance, there are good reasons to suspect that what is suitable for larger employers may be less so for smaller employers. One might also expect FSC returns to differ according to factors such as the product market employers operate in, the skill levels of their workforce, and the existence of other employment practices that are either supportive of or run counter to FSC. Finally, future papers will consider the productivity effects of tax inducements to adopt FSC.

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Appendix One

Survey Questions Used to Derive Fair Share Capitalism Variables

The FSC measures presented in the table are derived from the following survey questions.

Payments-by-results (PBR)

"Do any of the employees in this establishment get paid by results or receive merit pay? On this card is an explanation of what we mean by payment by results and merit pay."

Card reads:
1. Payment by results

   'Payment by results' includes any method of payment where he pay is determined by the amount done or its value, rather than just the number of hours worked. It includes commission, and bonuses that are determined by individual, establishment or organisation productivity or performance. It does not include profit-related pay schemes.

2. Merit pay

   'Merit pay' is related to a subjective assessment of individual performance by a supervisor or manager.

Follow-up questions establish the occupations covered by PBR and the percentage of non-managerial employees covered. In addition the following question establishes whether PBR is calculated at individual, group or organisation level:

"Thinking just about payment by results, what / What) measures of performance are used to determine the amount that employees receive?"
PROBE: Which others? UNTIL 'None'.
1) Individual performance/output,
2) Group or team performance/output,
3) Workplace-based measures,
4) Organisation-based measures,
5) Other measures

Profit-related pay

"Do **any** employees at this workplace receive profit-related payments or profit-related bonuses?"

Follow-up questions establish the occupations covered by PRP, the percentage of non-managerial employees covered, and the percentage in receipt of PRP payments. In addition the following question establishes the organisational level at which PRP is calculated if the workplace is part of a larger organisation:

"For what part of your organisation is the amount of profit-related pay calculated….Workplace, Division/Subsidiary company, Organisation as a whole?"

Share schemes

"Does this company operate any of the employee share schemes listed on this card for any of the employees at this workplace?
PROBE: Which others? UNTIL 'None'.
1) Share Incentive Plan (SIP),
2)Save As You Earn (SAYE or Sharesave),
3) Enterprise Management Incentives (EMI),
4) Company Share Option Plan (CSOP),
5)Other employee share scheme,
6) None of these"

Card reads:
1 Share Incentive Plan (SIP) – a tax and NIC advantaged plan where employees can purchase shares and companies can give employees free shares or matching shares 2 Save As You Earn (SAYE or Sharesave) share options scheme – tax advantaged scheme where employees save to purchase their employer's shares.
3 Enterprise Management Incentives (EMI) - where smaller companies can grant up to a total of £3 million of tax and NIC advantaged share options to their employees
4 Company Share Option Plan (CSOP) – where companies can grant each of their employees up to £30,000 of tax and NIC advantaged share options
5 Other employee share scheme

More detail on these share schemes is provided in Appendix 1.

Subsequent questions identify the occupations eligible for share ownership schemes and the percentage participating in schemes.

Recent introduction of performance-related pay

Over the past two years has management here introduced any of the changes listed on this card? PROBE: Which others? UNTIL 'None'.:
1) Introduction of performance related pay
2) Introduction or upgrading of computers
3) Introduction or upgrading of other types of new technology
4) Changes in working time arrangements
5) Changes in the organisation of work
6) Changes in work techniques or procedures
7) Introduction of initiatives to involve employees
8) Introduction of technologically new or significantly improved product or service
9) None of these