

in brief...

# Men in black: the impact of new contracts on football referees' performance

In the 2001/02 English football season, referees of Premier League matches were paid a salary for the first time. **Alex Bryson** and colleagues investigate the impact on their performance.

Until the introduction of salary contracts in the early 2000s, all referees in English professional football were paid a match fee for each game they officiated. The change was introduced to 'professionalise' the top tier of refereeing.

The new contracts offered greater income security to referees. Under the match fee system, referees could be dropped from the list of officials immediately following a poor performance, whereas the salary contracts were initially renewable after two years (and subsequently renewable annually).

The salaries also offered considerably more money than match fees. In return, salaried referees were required to attend fortnightly off-the-job training sessions to improve their fitness and ability to make the right decisions on the pitch.

The introduction of salary contracts was motivated by the huge growth in revenues resulting from lucrative television deals and by the increasing scrutiny of referees' decisions in the media and among fans. The employer – the Professional Game Match Officials Board – was intent on driving up standards through salary contracts.

Economic theory suggests that the employer could be doing the right thing. A classic review of research on incentives and worker performance notes that when a worker is paid a salary, 'despite the fact that there is no immediate relation between pay and performance, he is

likely to have incentives to exert effort because good performance will improve future contracts. Such reputational concerns imply that effort exertion can occur without explicit pay-for-performance contracts' (Prendergast, 1999).

The introduction of high paying contracts could also have a second impact, attracting better quality workers. Theory suggests that the result will be some 'sorting' of workers, in which better ones seek out the salary contracts and less able workers remain on match fees or leave the occupation entirely.

Our research takes advantage of the fact that when salary contracts were introduced, referees officiating in the Championship – the second tier of English professional football – continued to be paid match fees. This gives us a 'natural experiment', in which some workers move to salary contracts and others continue to be paid under the old system.

By comparing the relative performance of referees in the Premier League and Championship in the pre-salary period with their relative performance in the post-salary period (a method known as difference-in-differences), we can estimate the impact of the salary contracts.

This approach would be problematic if Premier League referees remained in the top tier throughout and thus obtained salaries, while Championship officials remained

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issue in a game is  
a good measure of  
their performance



on match fees in the second tier throughout. But this is not what happened. All referees in both divisions became eligible for the new contracts, and some referees officiated in both divisions at various points.

There are two other concerns that might affect our ability to draw inferences about the impact of salaries on referees' performance. The first is the possibility that other changes occurred at the same time as the switch to salaries, which may have had different effects on the performance of referees in the Premier League compared with the Championship. But our analysis suggests that this is not the case.

The second concern is that the employer offered the salary contracts to the most able referees so that the contract is simply an indicator of a more able referee. We are able to deal with this problem by controlling for referee 'fixed effects'.

Our data are virtually all the matches played in the top two divisions of English football in the 12 seasons between 1997/98 and 2008/09 (we have data for 11,169 of the 11,184 matches). They include all 168 referees officiating at these games over the period. Our measure of referees' performance is the number of yellow and red cards that they issue in a game.

Yellow cards are issued as a warning to a player when he has broken the rules, either by fouling an opponent, handling the ball or for showing dissent. A red card is shown if the player commits a second offence worthy of a yellow card. Red cards can also be shown for a particularly egregious first offence, such as violent conduct or a foul that directly prevents a goal-scoring opportunity. Red cards lead to the player being sent off and suspended from subsequent games.

Issuing many cards is often a sign that the referee has lost control of the game. Good referees are able to deal with most incidents without brandishing cards by communicating firmly with players from the outset. Indeed, there is anecdotal evidence that Premier League

officials hoped that the introduction of salary contracts would improve communication between referees and players. Other studies have shown a high negative correlation between the number of cards awarded and subjective assessments of referees' performance by expert panels (Frick et al, 2008).

We find improvements in the performance of referees among those who moved onto salary contracts relative to those who do not. The salaried referees issued an average of half a card less per game. This is a reduction of around one sixth since, on average in our data, referees show three cards per game.

The finding is robust to controls for referee fixed effects, which indicates that the result is not driven by salary contracts being awarded to better referees, although this does account for part of the effect. Nor is it sensitive to workers sorting into or out of the profession. Thus it appears that one can improve officiating at football games by using good personnel economics.

This article summarises 'Do Salaried Workers Perform Better than Piece Rate Workers?' by Alex Bryson, Babatunde Buraimo and Rob Simmons, a forthcoming CEP Discussion Paper.

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## Further reading

Bernd Frick, Oliver Gürtler and Joachim Prinz (2008) 'Men in Black: Monitoring and Performance of German Soccer Referees', in Helmut Dietl et al (eds) *Soccer: Economics of a Passion*, Hofmann.

Canice Prendergast (1999) 'The Provision of Incentives in Firms', *Journal of Economic Literature* 37: 7-63.

Performance improved among salaried referees: on average, they issued half a card less per game

