Institution: University of Liverpool

Unit of Assessment: UoA 17 Business and Management Studies

Title of case study: Anti-Match Fixing: Improving Global Sports Governance and Bringing Perpetrators to Account

Period when the underpinning research was undertaken: 2015 - present

Details of staff conducting the underpinning research from the submitting unit:

Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Babatunde Buraimo	Senior Lecturer	2013 – present
David Forrest	Professor	2015 - present
Ian McHale	Professor	Sep 2017 - present

Period when the claimed impact occurred: 2015 - present

Is this case study continued from a case study submitted in 2014? N

1. Summary of the impact (indicative maximum 100 words)

Match-fixing is a major impediment to the authenticity of sport and integrity of competition. Two high profile Court of Arbitration for Sport (CAS) rulings relied heavily on Forrest and McHale's research into the link between betting patterns and sporting outcomes. The Court asserted that, to prosecute match fixers in football, it was sufficient to use evidence from betting markets. Subsequently, Sports Governing Bodies (SGBs) including UEFA and FIFA, the European and world governing bodies of football, are now able to regulate through policy-making, implementation and enforcement of rules. The impact of the research has since reached cricket, tennis and other sports. Additionally, the research informs the education of athletes and other stakeholders to help them avoid involvement in fixing and corruption. The research is directly benefitting SGBs, sports leagues and athletes.

2. Underpinning research (indicative maximum 500 words)

Forrest and McHale have a track record of applying economic thinking and statistical methods in the analysis of gambling markets and sports. In view of this expertise, they were asked by Sportradar, the organisation responsible for monitoring betting markets for evidence of fixing on behalf of many SGBs, and UEFA in 2015 to conduct independent research on the efficacy and reliability of the monitoring system as used in football. The resulting report was the first of its kind to look at the efficacy of the monitoring system and was intended to be a public document so that interested parties could better understand the system, and its strengths and weaknesses.

On the basis of their research findings [3.1], UEFA decided evidence provided by statistical analysis of betting markets was sufficiently reliable to be the basis for sanctions against match fixers that could be defended in the courts.

Following their active involvement in a successful case in the Court of Arbitration for Sport (CAS) in which a football club (Skenderbeu Korce from Albania) was excluded from the Champions League, Forrest, McHale and Buraimo developed their research on match fixing:

- In 2016, Buraimo [3.2] presented econometric analysis illustrating large negative effects on attendances at Italian football matches where individual clubs had been revealed to be implicated in match fixing. The modelling shows that, after revelations about which clubs were involved in match fixing scandals, their attendances fell by 16% more than for clubs absent of scandal.

- In 2018, Forrest [3.3] described an economic framework to gain a better understanding of the determinants of the incidence of match fixing, and which sporting competitions are at highest risk of being targeted by criminals. Building on the literature on the economics of crime, the research considers the supply and demand of fixes and uses the framework to suggest policies which might be employed to address the match fixing problem by working on either the supply or demand side of the market. Formalising this framework has proven invaluable to policy makers charged with reducing match fixing.
- Between 2015-17, Liverpool was a partner in a consortium led by the French Institute for International and Strategic Affairs (IRIS), in a project funded by the European Commission (DG-Home), to establish good practice in the area of keeping betting crime-free. Forrest co-authored a report with the group's findings and recommendations [3.4].
- In 2018, McHale [3.5] explored how statistical analysis of betting markets can be used to detect match fixing in football. At the heart of the monitoring system used by UEFA and FIFA to detect match fixing are mathematical models which are used to produce probabilistic forecasts of match outcomes. This paper describes how such models work, why the implied probabilities from global betting markets are expected to closely follow the predictions from these models, and why deviations of odds from forecast probabilities suggest a possible fix.
- Having concentrated mainly on football, Forrest and McHale [3.6], in 2019, broadened their research on detection of match fixing to encompass tennis and other sports.

3. References to the research (indicative maximum of six references)

[3.1] Forrest-McHale Report on UEFA's monitoring system (2015): https://fds.integrity.sportradar.com/wp-content/uploads/sites/18/2016/03/Sportradar-Security-Services_Univsersity-of-Liverpool_An-Evaluation-of-the-FDS.pdf

[3.2] Buraimo, B., Migali, G., and Simmons, R. (2016). An analysis of consumer response to corruption, *Oxford Bulletin of Economics and Statistics*, 78(1): 22-41. Available from institution on request.

[3.3] Forrest, D. (2018) "Match Fixing", in M. Breuer and D. Forrest (eds.), *The Palgrave Handbook on the Economics of Manipulation in Sport*, pp.91-114. Palgrave MacMillan, Cham, Switzerland. Available from institution on request.

[3.4] Institut de Relations Internationales et Stratégiques (2017). *Preventing Criminal Risks Linked to the Sports Betting Market, Final Report*, available at: https://www.iris-france.org/wp-content/uploads/2017/06/PRECRIMBET_2017_FINAL.pdf

[3.5] McHale, I.G. (2018) "The Use of Forensic Statistics to Identify Corruption in Sport", in M. Breuer and D. Forrest (eds), *The Palgrave Handbook on the Economics of Manipulation in Sport*. pp.181-198. Palgrave MacMillan, Cham, Switzerland. Available from institution on request.

[3.6] Forrest, D. and McHale, I.G. (2019), Using statistics to detect match fixing, *IMA Journal of Management Mathematics*, 30(4), 431-449. Available from institution on request.

4. Details of the impact (indicative maximum 750 words)

Match fixing is a major problem for sport that can have a catastrophic impact on a sport's integrity and reputation. The research into the efficacy of using information from betting markets to identify and prove fixes has had impact on vital components of a successful strategy against match-fixing. These are: (i) the ability of Sports Governing Bodies (SGBs) to enforce rules and prosecute offenders, and (ii) systematic education of athletes about the risks of involvement in fixing.

A problem faced by SGBs in enforcing rules and prosecuting offenders was assembling sufficient evidence which could be relied upon in court. Forrest and McHale's research has removed the reliance of prosecution cases on physical evidence to prove the existence of a fix. This led to a precedent at the Court of Arbitration for Sport (CAS) where it was ruled that evidence from betting markets was sufficient. As a result, SGBs are now able to enforce their rules and regulations through the monitoring *and* prosecution of players and officials. Subsequently, education programmes for athletes have focussed on the new risks of detection and sanctions they face if involved in match fixing, given that SGBs may now use betting market evidence.

The types of impact and beneficiaries are: regulatory and policy (competition governing bodies, sports leagues, gambling regulators); professional education and training (players).

4.1 Enforcement of SGB rules and prosecution of match fixers

Following Forrest and McHale's research showing the efficacy of systems which monitor betting markets for evidence of match fixing, analysis of betting markets was successfully used for the first time by UEFA, as the primary evidence in a 2016 case at CAS to support sanctions against perpetrators in a match fixing case. The Court upheld the sanction of exclusion of Albanian team Skenderbeu from the Champions League, the world's premier club football competition: it "*adheres to the unrebutted findings of Profs. Forrest and McHale and finds that the conclusion reached in respect of the club are fully justified*" [5.1]. The CAS is the ultimate appeal body for every SGB on a worldwide basis. The CAS's acceptance of this research evidence in football cases has set a precedent to be followed by all sports, enabling them to adopt betting monitoring as a tool to prosecute match fixing efficiently and cost effectively. Professor of Law and member of CAS, Ian Blackshaw, commented: "*It is generally considered that, as a result of the CAS Award in [this] case, it should be easier for Sports Governing Bodies to sanction match fixers*" [5.2].

McHale testified at CAS [5.3] in a later case, where a referee (Joseph Lamptey) appealed a life ban from FIFA for fixing a World Cup qualifier by egregious decisions. The case was based on associated movements in betting odds. McHale assessed the evidence and the Court supported the life ban. In response to the decision, FIFA ordered a replay of the match, South Africa versus Senegal, and the outcome of the match reversed, meaning Senegal qualified for the 2018 World Cup. Inside World Football stated that: "*The CAS ruling … mark[s] a significant landmark for FIFA and football's federations in their battle against match-fixing and their ability to enforce judgements*" [5.4].

With these judgements in place, SGBs now have greater ability to hold match fixers to account, thereby deterring involvement of athletes and officials. In [5.5] FIFA says: "*thanks to the research of Forrest and McHale, sport is now more equipped to identify, prosecute and deter match fixers. Sport is unquestionably safer thanks to their work*".

Furthermore although football in individual countries now had the capacity to use betting evidence to prosecute match fixers, those who would process cases required specialist training. In 2020, Professor Forrest co-delivered such a training programme for UEFA

integrity officers from 25 national associations where participants learned how to interpret betting evidence in investigating and prosecuting match-fixing cases in their countries [5.6].

Impact has diffused to other sports beyond football. As a result of UEFA and FIFA prosecuting match-fixers on the basis of evidence from betting markets, other sports have now funded monitoring of betting markets to identify matches subject to manipulation. The researchers have been active in assisting SGBs in their approach to the match fixing problem with impact on tennis's fight against match-fixing, and on other global sports.

The International Tennis Federation [5.7] says: "*work by the Liverpool Professors has given us confidence that betting monitoring should be an important element in our efforts to eradicate match fixing in the sport*".

The Managing Director of Sportradar says in [5.8]: "*In turn, the explicit acceptance by the Court that the work by Forrest and McHale had demonstrated a sound scientific basis for betting monitoring has been an important factor in subsequent decisions by other sports leagues and federations around the world to adopt betting monitoring as a new tool in their fight against corruption*".

4.2 Educating athletes

The impact of the research has also extended from prosecution to prevention of match-fixing in Sport. Targeting athletes before they are corrupted can prevent match fixing before it has taken place. Athletes drawn into match fixing endanger their careers and face risks from involvement with organised crime, which is heavily implicated in the manipulation of sport. The researchers have helped highlight the need for education programmes and subsequently contributed to these courses.

Forrest has worked with EU Athletes, the European federation of sports players unions, to design and deliver an anti-corruption player education programme to make them more resistant to fixing. Forrest contributed to a "train the trainers" event hosted by Interpol and the course has subsequently been delivered to 15,000 athletes in ten countries [5.9].

In a follow-up ERASMUS+ project, Liverpool was partnered with EU Athletes, in designing and rolling-out whistle-blowing apps to 3,000 players in seven countries, covering, e.g., English rugby, Danish handball, Spanish futsal and Greek volleyball. The CEO of the Professional Players Federation says in Testimonial [5.10]: "*Union members in a wide range of sports have benefited from education which will help protect their careers, and the integrity of their sports*".

5. Sources to corroborate the impact (indicative maximum of 10 references)

[5.1] CAS full Judgement on the UEFA Champions League expulsion of Skenderbeu. Court document, CAS/2016A/4650, paragraph 96.

[5.2] Blackshaw, I. (2018) "The role of the Court of Arbitration for Sport (CAS) in countering the manipulation of sport", Chapter 12, page 244, in "The Palgrave Handbook on the Economics of Manipulation in Sport", Eds M. Breuer and D. Forrest, Cham Switzerland.

[5.3] CAS full Judgement on the FIFA case against a referee found guilty of match fixing.

[5.4] Inside World Football article on FIFA's case against referee Joseph Lamptey. The article states that the outcome was a landmark decision.
http://www.insideworldfootball.com/2018/01/15/cas-decision-lamptey-landmark-fifa-battle-match-fixing/

[5.5] Testimonial from FIFA which states that, as a result of the research by Forrest and McHale, sport is now safer.

[5.6] Programme for a training event for football integrity officers, held at UEFA with David Forrest one of three external members of the Steering Committee.

[5.7] Testimonial from the International Tennis Federation states that the research has encouraged tennis to adopt betting monitoring systems to detect fixing.

[5.8] Testimonial from Sportradar stating that the research underpinned a judgement at the Court of Arbitration for Sport which caused other sports to adopt monitoring of betting markets.

[5.9] Article in which the General Secretary of EU Athletes describes, and comments on the success of, the EU Athletes projects: https://euathletes.org/category/protect-integrity/

[5.10] Testimonial from the CEO of the Professional Players Federation in the UK, stating that athletes from many sports have benefited from education programmes.