After the Fight, a Hockey Game Broke Out: Investigating the Effect of Fighting on Style of Game Play in the NHL

Claude Vincent, Laurentian University
Ann Pegoraro, Laurentian University

Abstract 2012-143
Thursday, May 24, 2012 3:30 PM
20-minute oral presentation (including questions) (West)

Since the early days of hockey, the game and its players have always been characterized by their toughness, and this toughness has inevitably included fighting (Bernstein, 2006). While the number of fights in the NHL has dropped in recent years, fighting persists perhaps preserved by the perceived value of fighting to the game. Fighting is seen as a deterrent against cheap shots, as a safety value to release pressure from the game situation and also as something demanded by fans (Klein, 2011). This perceived value has resulted in the specialist player category of the enforcer, a player whose main role is to police the game and enforce the unwritten code of the game (Bernstein, 2006).

The hockey world itself remains divided on the issues of fighting and after the deaths this year of three former NHL enforcers, the divide is becoming even more pronounced. One side of the debate wants fighting abolished so that the negative stigma associated with this violence can be removed from the game with the intended outcome of attracting new fans to the game. The other side of the debate notes that the majority of NHL fans have accepted fighting as part of the game and removing it from the game might cause fans to abandon the sport resulting in significant revenue loss for the NHL (Paul, 2003).

Research into the value of fighting as also been divided in its findings. The role of fighting has been examined by both economists and sociologists alike (e.g. Paul, 2011, Paul 2003, Jones et al, 1997, Jones, et al. 1996) finding both a positive impact on player salaries for violent players (Jones et al. 1997) as well as a negative effect (Jones et al, 1996) in the pre-lockout era, and a positive effect (Paul, 2003) in the post-lockout era for fighting on attendance at NHL games. Authors have also found that fighting at lower levels of hockey did not have the same impact on fan attendance (Paul, 2011). In trying to investigate the value of fighting to the game itself, early research indicated that fighting had no effect on winning games (Engelhardt, 1995) and more recently Leard (2011) found that winning a fight does not lead to winning games. So researchers are left to wonder what, if any, is the real value of fighting to the NHL.

Focusing on the game as a product that is marketed by the NHL, this research will investigate the value of fighting by analyzing game level data to determine what in-game effect(s) fighting has on the total game as a product. As noted above, previous research has shown that fights do not lead to winning games, it has not addressed any in-game effects of fights, for example, do fights change the style of play such that games remain closer in goal differential as fans are more interested in closely contested games than blowouts (Paul, 2003). Play by play data from 1228 games during the 2010-2011 NHL season was collected and used to compare the style of play between games with fights (n=457) to the style of play in games without fights (n=771). In the first stage of the project, the inter-arrival time of events in each period was modeled within a proportional hazard framework (assuming a Weibull distribution). The events modeled were key game variables (e.g., goals, shots, penalties, hits, giveaways, takeaways, missed shots, blocks, face-offs). The inter-arrival times of events in periods with fights were compared to the inter-arrival times of events in the baseline state, or periods without fights providing a relative hazard rate. The relative hazard rate is defined as a tool for comparing two groups in terms of their differences in risk of incidence (Cao et al, 2005). Therefore, the relative hazard rate measures the incidence of the events in a game with a fight as compared to incidence of events in a game without fights, and measures to some extent if fighting affects the style of game play.

Preliminary results indicate that in games where a fight occurred in the first period the fight produces a calming effect on style of game play. Relative to the baseline state (first periods without fights), the difference in the hazard rate of all the game events was significantly higher (e.g. shorter time periods between hits) before the fight but was not significant after the fight.

If there was no other fight in the game, the calming effect of fighting continued throughout the game. Also, if the first fight of the game occurs in the second period the results are similar to those above for the first period, with the fight
having the calming effect on the game. If there are fights in both the first and second periods, then there are significant differences in hazard rates for hits and minor penalties prior to the fight in the second period but not after it, as the calming effect returns. A fight in the third period has no effect on state of game play irrespective of what happens in the first and second period. Therefore, this first stage of the research indicates that fights in NHL games do serve as a “safety valve” in the first two periods for moderating increasing aggressive play and intensity, as in games with fights, the style of play returns to a more “normal” state after the fight.

In order to assess the value of this “fight effect” to the NHL game as a product, the second stage of research will extend the basic model by examining the type of fights (e.g., enforcer fighting enforcer, enforcer versus other), the timing of the fight (e.g., within the period) and other game characteristics (e.g., goal differential) produced in games with fights. The results from this stage will provide a method of defining the role of fighting to the NHL at the game level and to the product it provides to sport consumers.

In addition to making a contribution to the sports economics literature, this research will provide sport managers with additional insight into the effect of fights and the resulting value to the NHL which will inform decisions related to all aspects of team operations from roster decisions to marketing plans. The study will also serve as the starting point for future research directions -- such as examining the evolving role of fighting in NHL hockey and its value as well as estimating the true value of an enforcer to an NHL team.