Taking a Knee: Estimating the Impacts of National Anthem Protests in the National Football League on Salary and Performance

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Abstract

This paper examines the effects of protests during the U.S. national anthem on National Football League players' salaries and performance. Using a difference-in-differences method with players who did not protest acting as the control group, I find no evidence that salary decreases for players who kneel. Similarly, there is no statistically significant effect on total yards per game, or combined tackles. This study has generalized applications for broader social movements which may have impacts on earnings or performance, due to negative connotations associated with social protests.

In recent years, there have been a number of protests made during the U.S. national anthem by athletes at different levels in different sports. While the motives for these protests are varied and have evolved over time, the event serving as the catalyst for these protests was when Colin Kaepernick, a former National Football League (NFL) quarterback with the San Francisco 49ers, sat during the national anthem during his team's first 2016 pre-season game on August 14th, 2016. For decades, the NFL has been by far the most popular sport which Americans follow (Gallup News Service, 2017a), so it is not surprising that such an action would receive widespread media coverage. As justification for this action, Kaepernick – who is biracial – said that he was protesting what he perceived to be racial and systemic injustices and oppression in the United States, particularly for visible minorities, in light of the disproportionate number of African Americans killed by law enforcement in 2015 and 2016. Shortly thereafter, the 49ers issued a statement in which they expressed support of Kaepernick's right to sit during the national anthem, by highlighting his liberty of choice, which is among the core values of the very flag he refused to honour.

On September 1st, 2016, Kaepernick knelt during the national anthem instead of sitting, and was joined in solidarity by his teammate Eric Reid. Subsequently, across the remainder of the 2016 NFL season, dozens of other players from various teams also manifested different forms of protest during the national anthem in addition to sitting and kneeling, including raising a fist, or linking arms with teammates. These actions were mirrored by athletes in other sports such as soccer or basketball. Following the 2016 NFL season, Colin Kaepernick opted out of his seven-year, $126,000,000 contract, and became a free agent, meaning he was no longer directly affiliated with any particular team. He continued to remain unsigned in subsequent NFL seasons, as he was not given the opportunity to tryout for other teams. Insofar as salary is concerned, as

an unsigned free agent, Kaepernick no longer earned any form of payment from the NFL, although he did gain fame and payment through a series of promotions, including an advertising campaign with the clothing manufacturer *Nike*. Notwithstanding, his earnings were severely negatively impacted as one of the end results of his national anthem protests. Though there is not much literature on this particular overlap between earnings and activism, McAdam (1986) argues that multiple factors must be considered when analyzing an individual's likelihood of participating in high-cost activism, and this raises the possibility of reverse causality, which I expand on in Section 1 of this paper. I develop on existing literature on social movements and activism by attempting to quantify potential costs resulting from this participation, in terms of average salary and performance.

Later, in the 2017 NFL season, U.S. President Donald Trump expressed his acute disdain for the continued national anthem protests via a tweet in which he stated that those players who knelt during the national anthem are privileged to be making a significant amount of money by being in the NFL, and that they should show respect to the American flag by standing during the national anthem, which echoes a sentiment that had previously been voiced by a significant portion of the population. In the days and weeks following Trump's tweet, hundreds more NFL players knelt or otherwise protested the U.S. national anthem, seemingly indicating a shift in motive from Kaepernick's original message to one of defiance for a largely controversial American President and what he stands for. Some surveys found that the protests were poorly perceived by the American public (Hart Research Associates/Public Opinion Strategies, 2018), particularly among Republicans (Gallup News Service, 2017b), while another survey found that the protests were met with mixed reactions nationwide (Global Strategy Group, LLC, 2017).

On May 23rd, 2018, the NFL announced a new policy (which would be effective as of the 2018 season) requiring all players to stand during the national anthem if they are on the field, or they would be given the option to stay in the locker room during the national anthem if they did not wish to stand on the field; the vote for this policy took place without consulting the NFL Players Association (NFLPA). Any player who would violate this policy would face fines and other disciplinary action from the League, and their team as a whole would also be subject to punishment and other repercussions. Thus, there were ostensibly no more players who knelt (or otherwise refused to stand during the national anthem) as of the 2018 NFL season, due to the significant financial and reputational sanctions which would be imposed in the case of a violation of the new rule.

This paper examines the effects of protests during the U.S. national anthem on National Football League players' salaries and performance. Using a difference-in-differences method with players who did not protest acting as the control group, I find no evidence that salary decreases for players who kneel. Similarly, there is no statistically significant effect on total yards per game, or combined tackles. This study has generalized applications for broader social movements which may have impacts on earnings or performance, due to negative connotations associated with social protests.

I contribute to a literature on the economics of sports by exploring extensions to the results found by Parsons *et al.* (2011), who state that direct and indirect biases have a negative effect on performance of discriminated groups of players. Specifically, in this paper, I examine potential effects on performance metrics of players who may be subject to discrimination or particular scrutiny due to their participation in national anthem protests.

The rest of this paper is structured as follows. Section 1 provides a conceptual framework. Section 2 gives an overview of the data used, and provides descriptive statistics. Section 3 examines the identification strategy used. Section 4 details the results and their implications. Section 5 summarizes the findings and discusses possible extensions.

1. Conceptual framework

There are many channels through which it is hypothesized that kneeling has an effect on the outcome variables, namely salary and performance. Firstly, in terms of real (average) salary,[1] Rosen and Sanderson (2001) note that players and owners must freely negotiate contract details. While the structure of the labour market in professional sports (in this case, the NFL) as discussed by Wilson and Pomfret (2014) is essentially a monopsony – which has a salary-decreasing effect when it comes to negotiating contracts – there are also effects of a player's level of fame that play a considerable and often disproportionate role in determining their salary and influencing it upwardly, particularly at the higher end of the distribution of salaries, as highlighted by Rosen (1981). When a player kneels, their reputation is negatively affected due to particularly prevalent media attention and scornful responses from the public. Thus, the demand for goods and services provided by the NFL decreases. This leads to decreased revenue for the NFL as a whole, the repercussions of which would be felt by all NFL personnel. Since boycotting or widespread public outrage at the player who knelt would also tarnish the reputation or image of the NFL, upper management decisions may be made in response to this by renegotiating a player's contract during the off-season, or otherwise reducing their salary, in order to minimize losses resulting from the player's protest. This theory is supported by results from King (2008) that show that conceding to pressure from the public (where in this paper,

[1] There may be an effect on guaranteed salary, although this metric was not used in this paper.

conceding would be taking action against a player who knelt) is a likely outcome when there is widespread media coverage, and that this effect is magnified when there was previous discredit done to the corporation in question.[2] This may lead to further repercussions for the player with other teams, where they would not want to hire that player as a free agent, due to potentially seeing him as a troublesome or undesirable player. As noted by Rosen and Sanderson (2001), such a decrease in the player's value leads to a lower average salary. In other words, due to an abundant labour supply in the NFL, a given player is more easily replaceable, and he is seen as less valuable once he kneels, due to the prominent public outrage in reaction to the protest. Thus, kneeling may have a direct negative impact on that player's salary through decreased viewership or fans boycotting games – and such a boycott was observed in polls (Seton Hall Sports Poll, 2017, and UBS Evidence Lab, 2017).

A further channel through which kneeling may affect a player's salary is through the sale of branded merchandise, like jerseys with their name on them, or even through the loss of certain marketing or promotional sources such as sponsorships or commercials and advertising. However, this channel was not measured or tested in this paper.

Kneeling may also have an effect on performance, through various channels. Firstly, a solitary player who kneels on a team which otherwise does not kneel may see a negative influence on the social interactions with his teammates. In turn, this may affect how well the player performs during games, because he would be preoccupied by external factors related to the repercussions of his actions. Further, his teammates could act differently towards him during a game, directly impacting his ability to perform as well. This could also lead to the development of psychological factors – or their re-emergence if they are pre-existing – such as anxiety, which

[2] In this case, "previous discredit" would be attributed to already-decreasing NFL viewership, due to factors unrelated to the kneeling protests (Gallup News Service, 2017b).

can sidetrack the player during the game and detract from an otherwise optimal performance setting. Effectively, if a player is worried about how he is perceived by his teammates or coaching staff during a game, he might miss opportunities for advantageous plays or might subconsciously hold himself back due to not wanting to exacerbate the issues with his peers.

Another channel through which kneeling may affect a player's performance is that managerial or coaching decisions may be made with respect to how many games they get to play, or their assigned roles in certain plays in a given game, which can negatively affect that player's performance, assuming other contributing factors remain unchanged.

It is also hypothesized that there is a threshold that is reached in the number of teammates who had previously supported the movement. Below this threshold, supporting the movement could more significantly impact earnings or performance, and above this threshold, the effect could be considered negligible due to peer effects or normalization of supporting the movement, thus not necessarily having a negative impact. However, there was measurement error in the identification process of players who knelt; it is plausible that some players knelt but it was not reported in the media. As such, a teammate threshold could not be quantified.

Conversely, there are multiple factors which may affect a player's decision to opt to kneel, thus raising the question of reverse causality. Firstly, Leeds, von Allmen, and Matheson (2014) put forward the idea that specific human capital in the context of sports is a set of specialized skills that are not easily transferable to other firms or industries. This paper postulates an extension to the theory proposed by Leeds, von Allmen, and Matheson, by considering a player's position, as well as the dynamics of their involvement with the team in strategical plays, as their specific human capital, thus making their role on the team difficult to mobilize outside of the NFL. Therefore, players are doubly incentivized to remain in the league as long as possible due to their

particular skillset, as well as the substantial salary they earn while in the industry.[3] This could therefore have an influence on a player's decision-making process to kneel.

Secondly, the methodology I employ differs from Rutten (2000), who specifies that an individual's participation in high-cost social movements is a gradual process subject to frequent re-evaluations based on their endogenous values and beliefs. Using a difference-in-differences identification strategy, I instead hypothesize that once a player has carried out a protesting action during the national anthem, they become part of the 'treatment' group, so that their attributes can then be compared to those who did not protest.

Further, while the potential costs resulting from the act of kneeling can be substantial both in terms of salary and performance, they must be weighted against an individual's derived utility from exhibiting such an action, and in all likelihood this utility would be non-monetary and dependent on the individual's preferences. Thus, a player is more likely to have knelt if he weighted the costs less strongly against the expected benefits.

In a related point, loss aversion – as outlined by Pope and Schweitzer (2011), who show that athletes exhibit loss aversion behaviours – is a pertinent theory when considering the implications of the possible presence of reverse causality, as players who knelt had significantly more to lose in terms of salary and quantified performance advantages, than players who did not kneel. Their kneeling, in spite of being in contradiction with demonstrated loss aversion theories, could be explained by the fact that players may have chosen to kneel due to having implicitly assigned a low likelihood of experiencing negative repercussions as a result of their protest.

[3] The flip side to this is that there is a large labour supply of potential players vying for a chance to be signed to a team under a contract. This then makes players relatively easy to replace, allowing for increased labour mobility and decreased job security, despite the limited number of positions available to be filled in any given year on each team.

2. Data and descriptive statistics

I gather panel data on salary for 2011-2018 using a public-access database called *Spotrac*,[4] which consolidates a broad range of financial information on a variety of sports. I use the real average salary, which is a player's salary in a given year, calculated from the total value of that player's contract divided by its length, and adjusted for inflation in 2018 USD. Salaries change as contracts are renegotiated and different deals are struck, and this is taken into account by the database. The scope and scale of an NFL player's salary must be considered from various angles.

In order to quantify performance, I look at the official NFL website's public database of performance statistics,[5] and focus on total yards per game, as well as total combined tackles. Specifically, I gather panel data for regular season games from 2011-2018 for both metrics. Total yards per game is an indicator of an offensive[6] player's ability and performance, while combined tackles measure ability of defensive[7] players. It is worth noting that most players have statistics for both metrics, even though they may exclusively be an offensive or defensive player.

Consolidating the datasets on average salary, total yards per game, and combined tackles required several modifications. Firstly, matching each player-year observation required correcting spelling variations in player names between the datasets, and renaming distinct players with identical names. Secondly, there was inconsistent and overly-specific position labelling across the databases. Accurate and consistent position identification is crucial due to inherent and marked salary and performance differences between different positions, so the aforementioned problems were corrected by grouping otherwise miscellaneous positions into

[4] https://www.spotrac.com/nfl/rankings/average/
[5] http://www.nfl.com/stats/player
[6] The quarterback, running back, tight end, wide receiver, fullback, and offensive lineman positions are labelled under a category of "offensive" positions.
[7] The linebacker, cornerback, defensive lineman, and safety positions are labelled under a category of "defensive" positions.

more manageable amalgamations of positions; namely, the following 13: cornerback, defensive lineman, fullback kicker, linebacker, long snapper, offensive lineman, punter, quarterback, running back, safety, tight end, and wide receiver. Also, some players changed team or position throughout the years, or were listed as a similar but slightly different position between the datasets. This was resolved by assigning the player's position across all years as the one which had more player-year observations between the datasets. There are 5,455 unique players across the 8 observed years, of which 380 unique players knelt. All 32 current NFL teams are looked at, where relocated teams (such as the San Diego Chargers or the St. Louis Rams) are considered as their current equivalents (the Los Angeles Chargers and the Los Angeles Rams, respectively). The fact that players join and leave the NFL in different years inherently creates an unbalanced panel.

It was also necessary to compile a list of players who knelt, so I collected data from various sources to manually create a record of this. I looked at all players who knelt during preseason and regular season games in 2016 and 2017. However, measurement errors arose in this step of the data-gathering process, due to the fact that sometimes, the only available information was that a certain number of players on a certain team had knelt, but it is not specified exactly which players knelt.

Additionally, it is possible that certain players knelt not purely due to their personal convictions, but because the rest of their team was doing it, and they would thus feel out-of-place to stand normally (i.e., not protest). This would be consistent with the findings of Babcock *et al.* (2015) that a team effect operates through guilt or social pressure, rather than pure altruism. These team effects could be present in the data, through cases where the entire team knelt, instead of a select

few players on that team. I account for this in one model specification by exclusively considering players who knelt on teams which did not manifest in their entirety a form of protest.

Table 1 reports summary statistics on all player-year observations, irrespective of their team, position or whether they kneel. The number of observations is different for each variable because the database for salary includes players who do not appear in the database for one or both of the performance metrics, and vice-versa. This fact, coupled with the inconsistencies – mentioned earlier in this section – in players' names, positions, and teams between the datasets for a same year, resulted in different numbers of observations for the variables of interest.

Tables 2a-2d serve to illustrate the statistically significant differences between kneeling players and non-kneeling players (as well as in the subgroups[8] of kneeling players). Table 2a reports summary statistics by type of player. *overall_action* is a dummy variable which equals one if a player has ever knelt, and equals zero otherwise. Similarly, *overall_solitary* is a dummy variable which equals one if a player has ever knelt on a non-kneeling team,[9] and zero if a player has never knelt and is on a non-kneeling team. Kneeling players, on average, have higher salaries, as well as better performance stats (more yards per game and more tackles) than non-kneeling teammates, even though kneeling players are less experienced on average (although solitary kneelers are more experienced than their non-kneeling counterparts). Table 2b shows that the differences between kneeling and non-kneeling players are statistically significant across all variables (salary, yards, tackles, and experience). Table 2c compares the proportions of offensive

[8] The subgroups – *action*, *solitary_action*, and *restricted solitary* – are formally defined in Section 3.

[9] I define a "non-kneeling team" as a team which entirely knelt, or for which there was a significant but undeterminable portion of players who knelt. In particular, I exclude players who are part of the Baltimore Ravens and the Jacksonville Jaguars, because 27 of them knelt during a game in 2017, but exactly which players knelt could not be fully determined. Similarly, I exclude the Denver Broncos from this model, since 32 players knelt during a game in 2017, but there was no specification as to exactly which players knelt. Three more teams were excluded from this subset because the entire team knelt together: the Cleveland Browns, the Dallas Cowboys, and the Oakland Raiders.

and defensive players among kneelers and non-kneelers of each kneeling subgroup. Table 2d shows that the percentage point change in the proportion of defensive players among kneelers as opposed to non-kneelers is statistically significant and positive (for each type of kneeling).

Table 3 reports retention rates between the 2017 and 2018 seasons, i.e., players who were in the NFL in 2017 who also remained in the NFL in 2018. The retention rate for players who did not kneel, regardless of their team, is 75.11%, whereas the rate for players who knelt, regardless of their team, is 80.11%. Thus, players who knelt were in fact more likely to remain in the NFL. Similar results were found when considering players on teams which did not kneel as a group. Those who did not kneel on these teams have a 69.97% retention rate, while players who knelt on these teams (thus acted in a solitary manner) have a 77.39% retention rate. 2016-2017 retention rates were not considered, as there were significantly more players who knelt in 2017 than in 2016, and only three kneeling players[10] in 2016 (one of which was on a non-kneeling team) were no longer in the NFL in 2017, making 2016-2017 retention rates an uninformative metric.

3. Identification strategy

I use a difference-in-differences strategy in order to estimate effects on salary, on total yards, and on tackles, for players who knelt. The treated group is players who knelt, while the control group is players who did not kneel. I look at the outcome variable for the following year. The identification assumption is that the trends are parallel between the treated and control groups. Moreover, I assume that no other time-varying shocks affected the treated and control groups differently. I relax these assumptions throughout by including control variables in my model.

[10] Irrespective of their team.

The main specification in the base model is the following:

$$Y_{i,j,p,t+1} = \alpha + \beta action_{i,t} + \gamma_j + \lambda_p + \theta_t + \psi_i + \phi X_{i,t} + \varepsilon_{i,j,p,t}$$

where the outcome variable is the salary (or performance) of player *i*, on team *j*, in position *p*, in year *t+1*. β is the coefficient of interest, and $action_{i,t}$ is a dummy variable which equals one if player *i* kneels in year *t*, and zero otherwise. γ_j represents team fixed effects, λ_p represents position fixed effects, θ_t represents year fixed effects, and ψ_i is a vector of individual fixed effects. $X_{i,t}$ is a vector of control variables, such as experience.

In another model, which accounts for a potential team effect, I look at a particular subset of players, namely kneeling players on non-kneeling teams. The specification for this model is the following:

$$Y_{i,j,p,t+1} = \alpha + \beta solitary\_action_{i,t} + \gamma_j + \lambda_p + \theta_t + \psi_i + \phi X_{i,t} + \varepsilon_{i,j,p,t}$$

where β is the coefficient of interest, and $solitary\_action_{i,t}$ is a dummy variable which equals one if player *i* kneels in year *t* on an otherwise non-kneeling team, and zero if player *i* does not kneel in year *t* on a non-kneeling team.

A final model is considered, which examines a subset of the second model, specifically only those players who knelt in 2016 and who were on non-kneeling teams. The model has the following specification:

$$Y_{i,j,p,t+1} = \alpha + \beta restricted\_solitary_{i,t} + \gamma_j + \lambda_p + \theta_t + \psi_i + \phi X_{i,t} + \varepsilon_{i,j,p,t}$$

where β is the coefficient of interest, and $restricted\_solitary_{i,t}$ is a dummy variable which equals one if player *i* kneels in 2016 on a non-kneeling team, and zero if player *i* does not kneel on a non-kneeling team in 2016. The interest in testing this model is that the initial few players who

knelt in 2016 might face consequences, while the hundreds of others who only knelt in 2017 might not.

Only offensive positions are considered for the regressions on total yards per game, and only defensive positions are considered for the regressions on total combined tackles. The positions of punter, kicker, and long snapper are only considered in regressions on salary, where all other positions are also considered.

4. Results

Regression results reported in Table 4 detail effects on average salary, total yards per game, and combined tackles, for each of the three models. All regressions use robust standard errors, team fixed effects, position fixed effects, year fixed effects, individual fixed effects, and leads and lags, omitting the first lag to serve as a point of reference. Regressions on salary are run for players in all positions, whereas regressions on yards only consider offensive players, and regressions on tackles only consider defensive players. The reasoning for this is that results would be less meaningful if non-offensive players were included in the analysis of effects on yards, and likewise for non-defensive players in the regressions on tackles.

In columns (1)-(3), the dependent variable is salary. In columns (4)-(6), the dependent variable is total yards per game. In columns (7)-(9), the dependent variable is tackles. All columns include the following controls: team fixed effects, position fixed effects, year fixed effects, individual fixed effects, and experience. Columns (4)-(6) restrict the sample to offensive players, while columns (7)-(9) restrict the sample to defensive players. Columns (1), (4), and (7) look at the effect of kneeling on all players who knelt versus all players who did not kneel. Columns (2), (5), and (8) rely on the variable *solitary_action*, which is a dummy variable which equals one if a

player kneels on an otherwise non-kneeling team, and zero if a player is on a non-kneeling team and does not kneel. Columns (3), (6), and (9) rely on the variable *restricted_solitary*, which is a dummy variable which equals one if a player kneels in 2016 on a non-kneeling team, and zero if a player does not kneel on a non-kneeling team in 2016.

When leads and lags are included in regression estimates and the first lag is excluded (to serve as a reference point), and salary is considered, there is a 13.4% decrease in a kneeling player's salary the year following the year they knelt (irrespective of their team), in relation to players who did not kneel, and this is statistically significant at the 10% level ($p = 0.062$). The following years are not statistically significant. Since player contracts are negotiated (for the vast majority of players) during the off-season, these results suggest that players kneeling had negotiated salaries lower than the control group during the year they first knelt.[11]

The sign of the coefficient of interest in the second and third models on salary is also negative (and increasingly so, in the third model), but it is not statistically significant for the year the player knelt. The following years are also statistically insignificant. These results confirm that there do not seem to be large effects of kneeling on salary.

While the coefficient of interest for total yards per game is negative in each model, it is never statistically significant. As well, the coefficient of interest for combined tackles is positive in the first two models, and negative in the third, although it is not statistically significant, either.

5. Conclusion

I estimate the effects of NFL players kneeling during the national anthem on their average salary, total yards per game, and combined tackles, using a difference-in-differences

[11] Some players knelt in both 2016 and 2017.

identification strategy which compares kneeling players to their non-kneeling teammates. Specifying the model by including leads and lags (and omitting the first lag as a reference point), as well as looking at salary, shows a statistically insignificant effect on salary for players who knelt, regardless of their team. No significant effect on performance metrics was found, either.

Further research could take into account more observations (for the few years following the NFL's ban on on-field kneeling) to see if the results found in this paper manifest themselves differently. Other financial metrics could also be looked at, such as guaranteed salary, or signing, which may be more sensitive than average salary to potential shocks such as kneeling. Exploring the plausibility of alternate channels through which kneeling could affect the outcome variables could find significant results under modified specifications. Interactions between players' performances would also warrant an investigation. Lastly, a threshold in the number of previous players who knelt could also attempt to be quantified, wherein above the threshold, effects become negligible, but below this threshold, negative repercussions are felt by the kneeling players, possibly due to a mob effect.

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Tables

Table 1–Summary statistics

Variable	N	μ	σ	min	max
Salary	15,853	14.09	1.00	10.14	17.33
Yards	15,549	12.77	38.81	-8	337.8
Tackles	11,047	22.68	28.49	0	171
Experience	15,549	4.372	3.144	1	23

The natural logarithm of real salary is used (in 2018 USD).

Table 2a–Summary statistics by type of player (kneeling vs. non-kneeling)

Variable		N	μ	σ	min	max
overall_action						
0						
	Salary	14,186	14.06	0.99	10.14	17.33
	Yards	6,617	26.47	53.61	-8	337.8
	Tackles	6,022	33.85	30.02	0	171
	Experience	13,885	4.405	3.176	1	23
1						
	Salary	1,667	14.34	1.07	12.93	17.06
	Yards	651	35.67	47.63	-2	261.9
	Tackles	921	40.05	29.52	0	154
	Experience	1,664	4.100	2.846	1	17
overall_solitary						
0						
	Salary	7,310	14.19	1.03	11.42	17.33
	Yards	3,371	33.49	63.56	-8	337.8
	Tackles	3,123	37.78	30.17	0	171
	Experience	7,108	4.168	2.997	1	23
1						
	Salary	625	14.44	1.07	12.99	16.82
	Yards	189	49.31	42.58	0	229
	Tackles	398	41.10	28.01	0	139
	Experience	611	4.519	2.905	1	17

The natural logarithm of real salary is used (in 2018 USD).
Yards only take into consideration offensive players.
Tackles only take into consideration defensive players.

Table 2b–Statistical significance of kneeling differences

Variable	(1) Salary	(2) Yards	(3) Tackles	(4) Experience	(5) Salary	(6) Yards	(7) Tackles	(8) Experience
overall_action	0.283***	9.206***	6.199***	-0.305***				
	(0.0276)	(1.979)	(1.047)	(0.0748)				
overall_solitary					0.250***	15.81***	3.325**	0.351***
					(0.0443)	(3.278)	(1.503)	(0.123)
Observations	15,853	7,268	6,943	15,549	7,935	3,560	3,521	7,719
R^2	0.008	0.002	0.005	0.001	0.004	0.003	0.001	0.001

Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1
The natural logarithm of real salary is used (in 2018 USD).
Yards only take into consideration offensive players.
Tackles only take into consideration defensive players.

Table 2c–Tabular statistics by position type

Position type	Offense		Defense		Total
Variable	N	Percent	N	Percent	N
action					
0	8,107	50.22	8,035	49.78	16,142
1	144	40.34	213	59.66	357
solitary_action					
0	6,849	50.29	6,770	49.71	13,619
1	37	32.17	78	67.83	115
restricted_solitary					
0	6,879	50.17	6,833	49.83	13,712
1	7	31.82	15	68.18	22

Table 2d–Statistical significance of differences in position type

Variable	Change in defensive player proportion
action	0.0989***
	(0.0263)
solitary_action	0.181***
	(0.0438)
restricted_solitary	0.183*
	(0.0994)

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3–2017-2018 Retention rates
Source: Author's calculations

	N		
Sub-group	2017	2018	Retention rate
Non-kneeling (any team)	1,832	1,376	75.11%
Kneeling (any team)	377	302	80.11%
Non-kneeling (non-kneeling teams)	1,718	1,202	69.97%
Kneeling (non-kneeling teams)	115	89	77.39%

Table 4–Regressions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Outcome variable		Salary			Yards			Tackles	
Specification	Overall	Solitary	2016	Overall	Solitary	2016	Overall	Solitary	2016
lag6	-0.305**			1.914			-13.32***		
	(0.131)			(6.138)			(5.145)		
lag5	-0.290***			-0.0809			-10.64**		
	(0.0996)			(5.859)			(4.267)		
lag4	-0.304***			-0.763			-7.916**		
	(0.0874)			(4.970)			(3.264)		
lag3	-0.105			3.023			-7.393**		
	(0.0799)			(4.246)			(3.198)		
lag2	0.0297			1.634			-3.231		
	(0.0738)			(3.785)			(2.924)		
action	-0.134*			-3.363			0.403		
	(0.0719)			(4.030)			(2.648)		
lead1	-0.119			9.586			7.032		
	(0.212)			(9.319)			(6.728)		
sklag6		-0.0649			-0.399			-14.86**	
		(0.217)			(13.85)			(5.983)	
sklag5		-0.169			-0.354			-16.96***	
		(0.157)			(8.558)			(6.218)	
sklag4		-0.242*			0.821			-9.799**	
		(0.134)			(6.616)			(4.261)	
sklag3		-0.0183			8.709			-10.40**	
		(0.123)			(6.413)			(4.787)	
sklag2		0.0902			2.652			-7.655**	
		(0.111)			(5.886)			(3.903)	
solitary_action		-0.0919			-2.978			1.633	
		(0.111)			(5.648)			(3.506)	
sklead1		-0.127			16.16			9.884*	
		(0.213)			(11.53)			(5.649)	
rsklag5			-0.257			-6.598			-6.075
			(0.329)			(18.38)			(8.319)
rsklag4			-0.281			-1.255			-6.709
			(0.274)			(14.98)			(10.03)
rsklag3			-0.00361			17.70			-1.866
			(0.223)			(13.31)			(11.76)
rsklag2			0.0298			-2.005			-9.193
			(0.219)			(11.51)			(9.677)
restricted_solitary			-0.147			-6.690			-3.184
			(0.214)			(12.30)			(7.568)
rsklead1			-0.155			15.08			9.017
			(0.236)			(13.38)			(7.021)
Controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
Observations	10,153	8,252	8,252	4,744	3,858	3,858	4,729	3,845	3,845
R^2	0.763	0.779	0.778	0.852	0.869	0.869	0.697	0.709	0.707

Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1
The first lag in each model has been omitted to serve as the reference point.
lead2, *sklead2*, *rsklag6*, and *rsklead2* were omitted because of collinearity.
The natural logarithm of real salary is used (in 2018 USD).