

The background of the slide is a dense collage of NHL team logos. Visible logos include the Washington Capitals, Boston Bruins, Toronto Maple Leafs, Pittsburgh Penguins, New York Rangers, Philadelphia Flyers, Carolina Hurricanes, Dallas Stars, Vancouver Canucks, Chicago Blackhawks, Buffalo Sabres, San Jose Sharks, Florida Panthers, Tampa Bay Lightning, St. Louis Blues, Colorado Avalanche, Detroit Red Wings, New Jersey Devils, and San Diego Red. The logos are scattered across the slide, with some appearing more prominently than others.

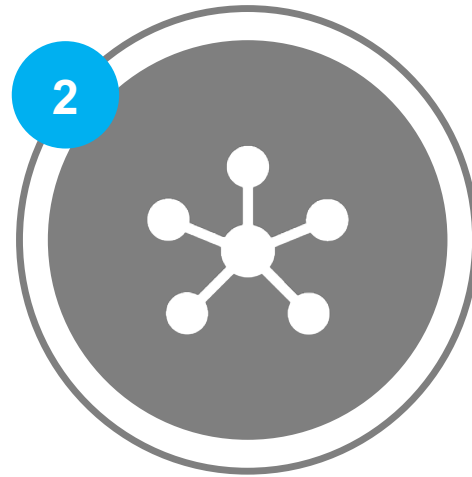
# Predicting Hockey Player Salaries

Team30

# CONTENTS



Question



Approach



Result

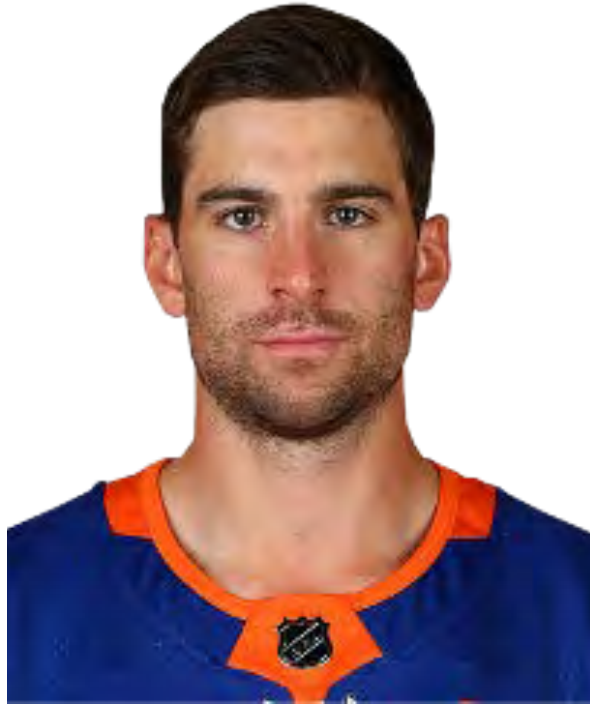


Prediction

## Summary of question

On behalf of Newport Sport Mania, we have been asked to predict the salary of a hockey player, who will be a free agent at the end of this season.





## John Tavares

Team : NYI

Position : C, forward

# SUMMARY

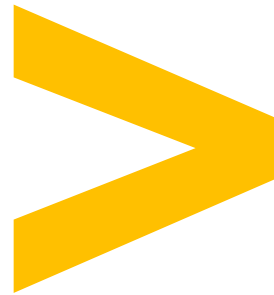
## 2016-17

AGE	GP	G	A
<b>27</b>	<b>63</b>	<b>38</b>	<b>43</b>
Sh	TOI/G	HitF	GvA
<b>244</b>	<b>20.1</b>	<b>30</b>	<b>81</b>
54G	54TOI	G_54G	TOI/G 54TOI
<b>11</b>	<b>248</b>	<b>418</b>	<b>4984</b>

# 1st Question

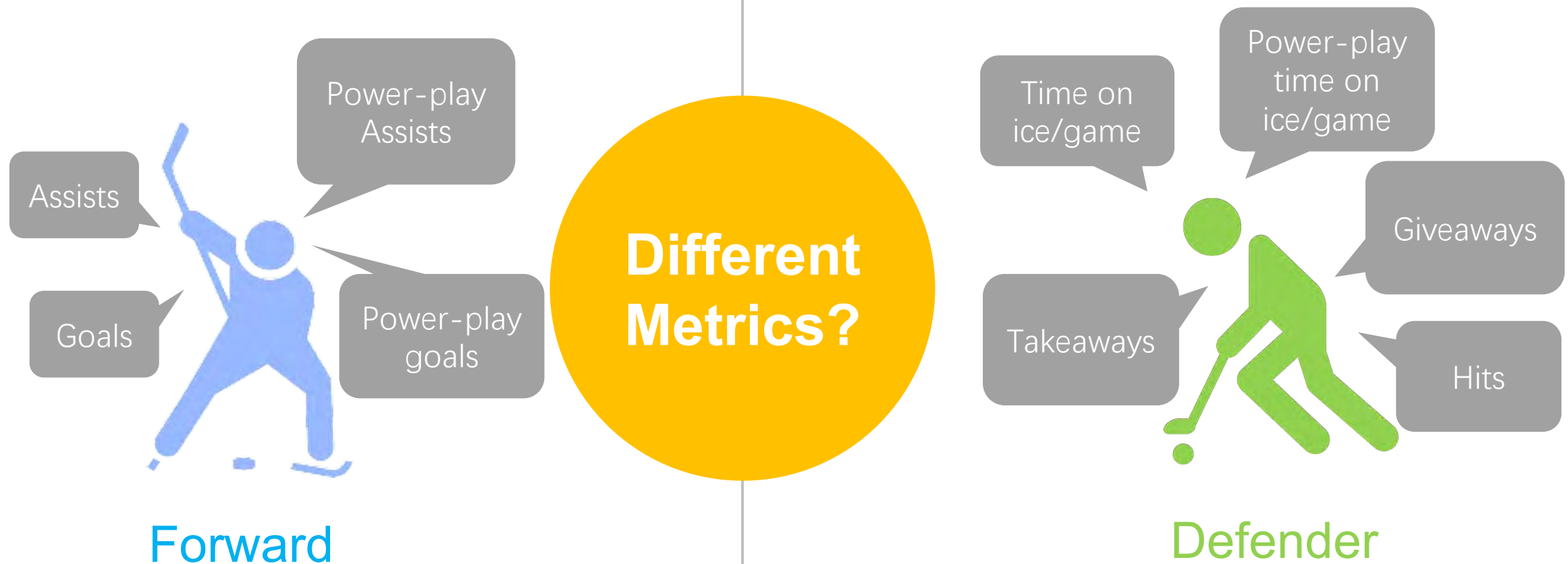


Forward





Defender

# 2nd Question




# 6 Stages of Analysis


**1**  **Data collection**  
Player salary, as well as their individual and team performance

 **Summary statistic**  
Better understand the data

**2** **3**  **Hypothesis Testing**  
Determine if defenders and forwards are statistically different according to their salary and performance statistics

 **Linearity, Correlation, and Collinearity**  
Scatter plots and  $R^2$  value for each potential dependent variable against salary

**4** **5**  **Regression Modelling**  
Different iterations of regression models were developed and then tested on the hold out sample (17%) to determine the MSE

 **Forward Only Data**  
Steps 4-5 repeated with data set of forwards only

**6**

# Overview of data



2013-2017

Hockey Abstract



Player Data Source

Hockey Buzz



Team Data Source



No Goalie Data

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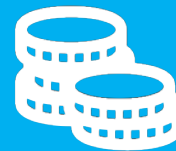
\*



New contract

> \$100K

2



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f (  )

New Salary

Last year's performance



# Summary of Independent Variables

Ind Variables	Description	Mean	Std. Dev.	Minimum	Maximum
<b>Year</b>	Starting year of season	2014.534	1.133	2013.000	2016.000
<b>Salary_Old</b>	Salary pre-contract change	\$1,540,112.47	\$1,585,990.92	\$7,000.00	\$8,700,000.00
<b>Age</b>	Player Age	24.926	3.532	19	35
<b>For</b>	Forward	0.6284	0.4849	0	1
<b>G</b>	Goals	7.277	7.224	0	33
<b>A</b>	Assists	11.82	10.38	0	49
<b>Sh</b>	Shots	83.17	61.29	0	248
<b>TOI/G</b>	Time on Ice/Game	15.801	3.960	7.369	25.113
<b>HitF</b>	Hits given	60.59	58.57	0	365
<b>GvA</b>	Giveaways	21.48	17.58	0	76
<b>TkA</b>	Takeaways	18.49	14.36	0	66
<b>54G</b>	Power-play goals	1.405	1.927	0	9
<b>54A</b>	Power-play assists	1.669	2.943	0	17
<b>54TOI</b>	Power-play time on ice	65.02	71.56	0	308.9

# Impact of Salary Cap







- No team specific trends in salary for players
- No dummy variables for team given the impact of the cap in standardizing the team's salaries

	2013-14		2014-15		2015-16		2016-17	
	Cap (64.3 Mn)		Cap (71.4 Mn)		Cap (73 Mn)		Cap (75 Mn)	
	Salary \$	Cap Utiliz.	Salary \$	Cap Utiliz.	Salary \$	Cap Utiliz.	Salary \$	Cap Utiliz.
<b>Avg</b>	49,676,678	77%	63,748,804	89%	55,355,489	76%	71,643,777	96%
<b>Min</b>	33,974,833	53%	40,651,666	57%	40,262,498	55%	58,615,320	78%
<b>Max</b>	63,618,095	99%	84,622,727	119%	68,146,794	93%	80,634,785	108%

# Hypothesis Test



Forward

 < 	 ≠ 	 > 
<b>TOI/G</b> Reject at 1% <b>54TOI</b> Don't reject <b>TkA</b> Don't reject <b>HitF</b> Don't reject	<b>GvA</b> Reject at 1%	<b>Salary</b> Don't reject <b>Goals</b> Reject at 1% <b>Assists</b> Reject at 1% <b>54G</b> Reject at 1% <b>54A</b> Reject at 5%



Defender

Position specific terms  
or  
Position specific model

# Collinearity

	Salary New	Year	Salary Old	Age	For	Def	GP	G	A	PTS	+/-	Sh	Sh%	TOI	TOI/G	HitF	GvA	TkA	PIM	Ginj	54G	54A	54TOI	SH%	RK	W	L	OL	TPTS	
Linear Correlation Table	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data	Source Data
Salary_New	1.000	0.046	0.672	0.304	0.038	-0.038	0.519	0.626	0.749	0.740	0.189	0.690	0.179	0.278	0.614	0.245	0.587	0.577	0.267	0.089	0.586	0.617	0.716	0.217	-0.050	0.053	-0.058	0.008	0.029	
Year		1.000	0.103	0.092	-0.022	0.022	0.331	0.152	0.161	0.167	-0.009	0.219	-0.023	0.646	0.028	0.243	0.240	0.182	0.166	0.160	0.082	0.235	0.115	0.092	0.040	-0.033	0.074	-0.099	-0.086	
Salary_Old			1.000	0.535	0.062	-0.062	0.471	0.477	0.600	0.582	0.050	0.548	0.128	0.225	0.464	0.179	0.502	0.483	0.256	0.165	0.456	0.468	0.584	0.173	-0.014	0.012	0.000	-0.031	-0.015	
Age				1.000	0.020	-0.020	0.334	0.201	0.257	0.248	0.035	0.238	0.068	0.180	0.178	0.218	0.235	0.187	0.270	0.185	0.175	0.142	0.185	0.273	-0.070	0.073	-0.082	0.017	0.058	
For					1.000	-1.000	0.067	0.411	0.148	0.271	0.014	0.210	0.339	-0.059	-0.489	-0.005	-0.219	0.255	-0.005	0.006	0.233	0.055	0.131	-0.328	-0.030	0.043	-0.040	-0.011	0.047	
Def						1.000	-0.067	-0.411	-0.148	-0.271	-0.014	-0.210	-0.339	0.059	0.489	0.005	0.219	-0.255	0.005	-0.006	-0.233	-0.055	-0.131	0.328	0.030	-0.043	0.040	0.011	-0.047	
GP							1.000	0.655	0.740	0.747	0.082	0.826	0.175	0.415	0.470	0.636	0.733	0.753	0.548	-0.013	0.446	0.446	0.613	0.318	-0.026	0.026	-0.025	-0.005	0.003	
G								1.000	0.775	0.919	0.245	0.865	0.432	0.252	0.315	0.296	0.493	0.752	0.265	-0.034	0.805	0.551	0.767	-0.041	-0.023	0.042	-0.040	-0.009	0.024	
A									1.000	0.961	0.251	0.858	0.224	0.307	0.556	0.297	0.735	0.779	0.295	-0.049	0.649	0.737	0.872	0.091	-0.017	0.028	-0.023	-0.014	0.008	
PTS										1.000	0.263	0.912	0.328	0.302	0.484	0.314	0.673	0.814	0.299	-0.046	0.755	0.700	0.878	0.039	-0.020	0.036	-0.032	-0.013	0.015	
+/-											1.000	0.141	0.118	-0.027	0.058	-0.001	0.084	0.140	0.003	0.000	0.115	0.009	0.072	-0.002	-0.248	0.274	-0.280	-0.008	0.259	
Sh												1.000	0.225	0.344	0.503	0.427	0.696	0.802	0.369	-0.041	0.692	0.628	0.828	0.108	-0.026	0.029	-0.027	-0.007	0.008	
Sh%													1.000	0.041	0.016	0.062	0.056	0.244	0.062	0.046	0.309	0.143	0.234	-0.082	0.005	0.007	-0.019	0.029	0.005	
TOI														1.000	0.253	0.288	0.362	0.254	0.232	0.031	0.231	0.497	0.288	0.208	0.037	-0.037	0.045	-0.015	-0.053	
TOI/G															1.000	0.222	0.665	0.436	0.159	0.072	0.346	0.442	0.555	0.500	0.072	-0.075	0.058	0.050	-0.079	
HitF																1.000	0.394	0.337	0.691	0.037	0.148	0.116	0.195	0.301	-0.022	0.039	-0.034	-0.015	0.020	
GvA																	1.000	0.644	0.358	-0.029	0.416	0.543	0.653	0.293	0.017	-0.007	0.018	-0.025	-0.032	
TkA																		1.000	0.266	-0.044	0.540	0.474	0.671	0.213	0.038	-0.023	0.020	0.010	-0.041	
PIM																			1.000	0.022	0.156	0.153	0.213	0.159	-0.048	0.053	-0.045	-0.022	0.036	
Ginj																				1.000	-0.043	-0.038	-0.057	0.170	0.052	-0.040	0.045	-0.010	-0.033	
54G																					1.000	0.565	0.772	-0.102	-0.020	0.027	-0.024	-0.010	0.009	
54A																						1.000	0.771	-0.015	0.036	-0.041	0.038	0.012	-0.050	
54TOI																							1.000	-0.056	0.022	-0.028	0.026	0.009	-0.050	
SH%																								1.000	0.085	-0.076	0.041	0.095	-0.065	
RK																									1.000	-0.949	0.917	0.158	-0.854	
W																										1.000	-0.924	-0.270	0.888	
L																											1.000	-0.118	-0.886	
OL																												1.000	-0.076	
TPTS																													1.000	

Remove Sh

- Sh was collinear with G, A, TkA, 54TOI, G\_54G, and 54TOI\_A.
- Detrimental to the model as it had statistically insignificant p-values when included with other variables, raised the other variables' p-values and standard errors, and was either less correlated or comparatively correlated to the dependent variable.

# All player model

	Base Model (1)	All Position Interactions (2)	Forward Interaction Terms (3)	Defensive Interaction Terms (4)	Final Model (5)
Constant	223739647.837*** (76339802.07)	228344407.112*** (75618591.327)	227923456.223*** (76508704.931)	226179334.133*** (75445739.307)	144767680.665** (71900591.229)
Year	-111780.604*** (37878.147)	-114160.729*** (37532.197)	-114001.015*** (37973.837)	-113056.896*** (37443.775)	-72323.09** (35678.48)
Salary_Old	0.402*** (0.038)	0.404*** (0.037)	0.407*** (0.038)	0.405*** (0.037)	0.357*** (0.037)
Age	-9832.261 (11348.884)	-9839.176 (11228.439)	-8921.043 (11357.718)	-9749.688 (11189.068)	-7340.965 (11070.298)
For	299045.37** (132885.387)	783054.857* (460653.39)	731260.342 (460457.633)	688839.324 (429188.44)	209287.837 (146830.125)
G	34356.21*** (12010.144)	53139.778* (29263.385)	72843.431** (29165.78)	54483.963*** (12910.812)	58720.105** (28601.124)
A	50604.554*** (9178.015)	47579.869*** (13871.802)	55187.007*** (13707.567)	53097.896*** (9109.439)	35325.119*** (13019.034)
TOI/G	144786.839*** (17180.187)	141742.531*** (25117.152)	156644.352*** (25006.17)	137268.965*** (23844.182)	111129.236*** (17381.229)
HitF	1695.101** (760.697)	5632.915*** (1307.147)	1392.358* (772.401)	5555.626*** (1287.766)	1706.786** (759.241)
GvA	-3983.978 (3802.057)	-11806.93*** (4119.608)	-6846.491* (4013.082)	-11898.305*** (4111.805)	-7462.27** (3787.918)
TkA	-10442.473** (4543.949)	4293.346 (9020.767)	-9441.414** (4567.504)	2265.113 (8157.907)	
54G	49651.617 (31237.481)	37770.839 (30963.772)	48785.801 (31206.173)	37898.393 (30920.549)	74613.257 (52052.583)
54A	77866.09*** (19875.459)	81570.026*** (19695.596)	77373.074*** (19906.502)	80722.515*** (19616.376)	
54TOI	-1868.345 (1249.936)	-2101.088 (1279.348)	-2451.505* (1288.077)	-2222.339* (1255.573)	-25196.544*** (3783.92)
For_G		86.685 (29641.326)	-30608.125 (29044.708)		-22229.013 (30119.971)
For_A		7349.883 (14068.923)	-3857.081 (13319.133)		20687.738* (12439.983)
TOI_54TOI					1316.699*** (187.405)
G_54G					-256.218 (1964.717)
For_HitF		-6223.321*** (1546.546)		-6167.443*** (1526.178)	
For_TkA		-15920.45 (9928.796)		-13299.193 (8622.856)	
For_TOI/G		-11128.995 (32974.396)	-23493.82 (32797.838)	-3419.123 (29951.419)	
R-Sq	0.70146	0.71099	0.70341	0.71088	0.71507
Adj R-sq	0.69671	0.70459	0.69758	0.70519	0.70982
# of Observations	830	830	830	830	830
MSE on Hold Out	1.03459E+12	1.03774E+12	9.79763E+11	1.04302E+12	8.94403E+11

\*\*\*=p-value<0.01,\*\*=p-value<0.05,\*=p-value<0.10

# All player Base model

## Observations

Age not statistically significant – a good player is a good player, coincides with low correlation with salary

GvA, 54G, 54TOI also not statistically significant – indicates metrics are not important in determining salary under this model; powerplay variables were also collinear with other data, contributing to higher p-values

TkA was statistically significant with a negative coefficient

Year (Negative)

more recent years have experienced smaller salaries;

- Could be based on the players in the league at that time, indicating more great players year over sharing the capped salary amount (the cap is being increased in 2018)
- players have been receiving more money through bonuses (over cap salary) in recent years (Sporer, 2017)

	Base Model (1)
Constant	223739647.837*** (76339802.07)
Year	-111780.604*** (37878.147)
Salary_Old	0.402*** (0.038)
Age	-9832.261 (11348.884)
For	299045.37** (132885.387)
G	34356.21*** (12010.144)
A	50604.554*** (9178.015)
TOI/G	144786.839*** (17180.187)
HitF	1695.101** (760.697)
GvA	-3983.978 (3802.057)
TkA	-10442.473** (4543.949)
54G	49651.617 (31237.481)
54A	77866.09*** (19875.459)
54TOI	-1868.345 (1249.936)
For_G	
For_A	
TOI_54TOI	
G_54G	
For_HitF	
For_TkA	
For_TOI/G	
R-Sq	0.70146
Adj R-sq	0.69671
# of Observations	830
MSE on Hold Out	1.03459E+12

## Observations

Included all of the position related interaction terms

Higher MSE than Model 1

However, nearly all interaction terms were not statistically significant, likely due to collinearity between similar variables. Position (For) was no longer statistically significant because the impact of this variable is now compensated by the interaction terms.

	All Position Interactions (2)
Constant	228344407.112*** (75618591.327)
Year	-114160.729*** (37532.197)
Salary_Old	0.404*** (0.037)
Age	-9839.176 (11228.439)
For	783054.857* (460653.39)
G	53139.778* (29263.385)
A	47579.869*** (13871.802)
TOI/G	141742.531*** (25117.152)
HitF	5632.915*** (1307.147)
GvA	-11806.93*** (4119.608)
TkA	4293.346 (9020.767)
54G	37770.839 (30963.772)
54A	81570.026*** (19695.596)
54TOI	-2101.088 (1279.348)
For_G	86.685 (29641.326)
For_A	7349.883 (14068.923)
TOI_54TOI	
G_54G	
For_HitF	-6223.321*** (1546.546)
For_TkA	-15920.45 (9928.796)
For_TOI/G	-11128.995 (32974.396)
R-Sq	0.71099
Adj R-sq	0.70459
# of Observations	830
MSE on Hold Out	1.03774E+12

All player  
position  
interactions  
model



# All player forward interaction terms model



## Observations

Includes only forward specific interaction terms

Improved the MSE, but the problem of insignificant variables in model 2 persisted, as collinearity still exists as a result of the interaction terms

Since most of the variables are not statistically significant, it is hard to draw any conclusions

	Forward Interaction Terms (3)
Constant	227923456.223*** (76508704.931)
Year	-114001.015*** (37973.837)
Salary_Old	0.407*** (0.038)
Age	-8921.043 (11357.718)
For	731260.342 (460457.633)
G	72843.431** (29165.78)
A	55187.007*** (13707.567)
TOI/G	156644.352*** (25006.17)
HitF	1392.358* (772.401)
GvA	-6846.491* (4013.082)
TkA	-9441.414** (4567.504)
54G	48785.801 (31206.173)
54A	77373.074*** (19906.502)
54TOI	-2451.505* (1288.077)
For_G	-30608.125 (29044.708)
For_A	-3857.081 (13319.133)
TOI_54TOI	
G_54G	
For_HitF	
For_TkA	
For_TOI/G	-23493.82 (32797.838)
R-Sq	0.70341
Adj R-sq	0.69758
# of Observations	830
MSE on Hold Out	9.79763E+11



# All player Defensive interaction terms model

## Observations

Includes only defense specific interaction terms

Worse MSE

For\_HitF was the only significant interaction term, as it is an important statistic for defenders, despite the hypothesis test results

	Defensive Interaction Terms (4)
Constant	226179334.133*** (75445739.307)
Year	-113056.896*** (37443.775)
Salary_Old	0.405*** (0.037)
Age	-9749.688 (11189.068)
For	688839.324 (429188.44)
G	54483.963*** (12910.812)
A	53097.896*** (9109.439)
TOI/G	137268.965*** (23844.182)
HitF	5555.626*** (1287.766)
GvA	-11898.305*** (4111.805)
TkA	2265.113 (8157.907)
54G	37898.393 (30920.549)
54A	80722.515*** (19616.376)
54TOI	-2222.339* (1255.573)
For_G	
For_A	
TOI_54TOI	
G_54G	
For_HitF	-6167.443*** (1526.178)
For_TkA	-13299.193 (8622.856)
For_TOI/G	-3419.123 (29951.419)
R-Sq	0.71088
Adj R-sq	0.70519
# of Observations	830
MSE on Hold Out	1.04302E+12

# All player Final model



## Observations

Position still not statistically significant, as the impact of its coefficient is being compromised by the interaction terms

Other Insignificant Variables: Age, 54G, For\_G, G\_54 – likely do to persistent collinearity. However, since MSE is better with these then without, these variables are kept.

## Why the model is the best?

Takes into account the forward interaction terms

Despite thinking that the “superstar” interaction terms would help better fit highly paid players, these values instead resulted in better fitting the relationship that exists between G-54G, TOI\_54TOI to ensure appropriate estimations and avoid overestimating

### Insignificant Terms:

- Age: no strong relationship between age and salary
- Position: being represented through the interaction terms
- 54G, For\_G and G\_54G are not significant
- Running the model without these variables results in higher MSE

	Final Model (A)
Constant	144767680.665** (71900591.229)
Year	-72323.09** (35678.48)
Salary_Old	0.357*** (0.037)
Age	-7340.965 (11070.298)
For	209287.837 (146830.125)
G	58720.105** (28601.124)
A	35325.119*** (13019.034)
TOI/G	111129.236*** (17381.229)
HitF	1706.786** (759.241)
GvA	-7462.27** (3787.918)
TkA	
54G	74613.257 (52052.583)
54A	
54TOI	-25196.544*** (3783.92)
For_G	-22229.013 (30119.971)
For_A	20687.738* (12439.983)
TOI_54TOI	1316.699*** (187.405)
G_54G	-256.218 (1964.717)
For_HitF	
For_TkA	
For_TOI/G	
R-Sq	0.71507
Adj R-sq	0.70982
# of Observations	830
MSE on Hold Out	8.94403E+11

# Forward Specific Model

	Final Regression Model	54A Term	RM Without Hits
Constant	200464557.169** (88939721.423)	133844647.029 (86714656.09)	190488577.89** (87406621.6)
Year	-99715.979** (44135.402)	-66574.672 (43030.627)	-94755.752** (43371.695)
Salary_Old	0.344*** (0.039)	0.321*** (0.039)	0.344*** (0.039)
G	69774.704*** (15025.61)	58070.848*** (14838.04)	72012.243*** (14572.972)
A	32778.089*** (11051.774)	49682.888*** (9877.692)	33245.455*** (11019.279)
TOI/G	80048.42*** (24274.97)	66962.434*** (23711.397)	80016.476*** (24260.569)
HitF	547.925 (887.872)	251.831 (892.508)	
GvA	-21615.868*** (5321.383)	-21180.214*** (5359.37)	-21455.924*** (5311.926)
54G	147326.514** (60528.776)	133367.108** (60447.257)	147360.68** (60492.979)
54A	-22039.81 (54759.114)		-19660.86 (54590.976)
54TOI	-27621.317*** (5268.61)	-32681.675*** (4951.247)	-27501.816*** (5261.939)
TOI/G_54TOI	1629.765*** (297.79)	1997.814*** (277.923)	1614.882*** (296.636)
G_54G	-5653.768** (2263.549)	-4739.556** (2257.554)	-5723.686** (2259.375)
A_54A	3121.16** (1574.635)		3024.491* (1565.898)
R-Sq	0.75992	0.75358	0.75974
Adj R-sq	0.75395	0.74841	0.75424
# of Observations	537	537	537
MSE on Hold Out	7.51805E+11	7.7841E+11	7.61372E+11

\*\*\*=p-value<0.01, \*\*=p-value<0.05, \*=p-value<0.10

# Forward Specific Model

## Observations

54G and G now statistically significant at the 98% and 99%, respectively, a significant improvement to the all player models, as these are important metrics when evaluation forwards' performances

Other statistically significant coefficients had the same impact on salary (negative or positive) as the all player models, so the logic discussed above applies

54A and HitF are not statistically significant; HitF likely due to the lower importance on giving hits in forwards' performance evaluation; 54A could be due to collinearity with other variables.

	Final Regression Model
Constant	200464557.169** (88939721.423) -99715.979**
Year	(44135.402) 0.344***
Salary_Old	(0.039) 69774.704***
G	(15025.61) 32778.089***
A	(11051.774) 80048.42***
TOI/G	(24274.97) 547.925
HitF	(887.872) -21615.868***
GvA	(5321.383) 147326.514**
54G	(60528.776) -22039.81
54A	(54759.114) -27621.317***
54TOI	(5268.61) 1629.765***
TOI/G_54TOI	(297.79) -5653.768**
G_54G	(2263.549) 3121.16**
A_54A	(1574.635) 0.75992
R-Sq	0.75395
Adj R-sq	537
# of Observations	7.51805E+11
MSE on Hold Out	

# Forward Specific Model

## Observations

Forward Models 2 and 3 were developed to remove the insignificant variables from model 1 – however, out of sample fit worsened in both cases.

	54A Term	RM Without Hits
Constant	133844647.029 (86714656.09)	190488577.89** (87406621.6)
Year	-66574.672 (43030.627)	-94755.752** (43371.695)
Salary_Old	0.321*** (0.039)	0.344*** (0.039)
G	58070.848*** (14838.04)	72012.243*** (14572.972)
A	49682.888*** (9877.692)	33245.455*** (11019.279)
TOI/G	66962.434*** (23711.397)	80016.476*** (24260.569)
HitF	251.831 (892.508)	
GvA	-21180.214*** (5359.37)	-21455.924*** (5311.926)
54G	133367.108** (60447.257)	147360.68** (60492.979)
54A		-19660.86 (54590.976)
54TOI	-32681.675*** (4951.247)	-27501.816*** (5261.939)
TOI/G_54TOI	1997.814*** (277.923)	1614.882*** (296.636)
G_54G	-4739.556** (2257.554)	-5723.686** (2259.375)
A_54A		3024.491* (1565.898)
R-Sq	0.75358	0.75974
Adj R-sq	0.74841	0.75424
# of Observations	537	537
MSE on Hold Out	7.7841E+11	7.61372E+11

# Predictions

New salary

**\$ 6.932 Million**

45834 \* Age + 24741 \* GP + 53648 \* G + 69511 \* A + 7071 \* Sh  
+ 92744 \* TOI/G + 3301 \* HitF - 13162 \* GvA + 202527 \* 54G  
- 35099 \* 54TOI - 7713 \* G\_54G + 2073 \* TOI/G\_54TOI - 1155419

# Limitations

**One Year of Data**

**AHL Players**

**Team Leadership Position**

**Play-Off Data**

**Increasing Salary Cap**

**Other Contract Changes**

**Soft Skills**

**Popularity**

**we could do with more time**

**we cannot overcome**

**Thank you!**