Clutch Goalie Performance

David Gutkovsky

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After January 3rd's game against the New York Rangers, Oilers' head coach Dave Tippett explained the 4-1 loss was due in large part by the poor performance of their goaltender Mikko Koskinen. He responded by acknowledging that he hasn't played well lately but also "[the team] scored seven goals in [his] last six losses".

Most often, offensive statistics and defensive statistics are viewed as two distinct and independent group of events. However, it is very easy to establish links of causality between these two. For example, an excellent performance from the goaltender can lead the rest of the team to take more risks and thus create more prominent scoring chances. On the contrary, a weak goal allowed by the goaltender can have the opposite effect and take the life out of the team.

Goalie statistics are often presented in an aggregate form (save percentage and goals against average during a season are the ones that come to mind first). Any hockey fan will tell you that allowing a goal when your team leads by 3 at the end of the game does not have the same impact then allowing one at the beginning of the game when the score is tied.

Objective

This is why in this article, we analyse goaltenders' performance at different moments of a game. These moments will be defined by the goal differential of both teams during the game (for example, a goal differential of 0 means the game is tied and a goal differential of -1 means that the goalie facing the shot is trailing by 1). More importantly, we take a closer look at their performance in *clutch moments* occurring when the goal differential is less than one.

Data

Thanks to the data available from MoneyPuck, we have the record of every shot taken during very game from the 2021-22 season up until January 4th, and the goaltender that face the shot. We do not consider missed and blocked shots, as well as shots aimed at an empty net.

Main Metric: Goals Saved

We could take a look at the save percentage or the average goals allowed against per moment. However, the metrics do not take into account the quality of shots. It is very possible that during clutch moments, weaker teams allowed higher quality scoring chances, leading to more goals. A better approach is to consider goals saved.

For every shot i, MoneyPuck has provided the probability of being a goal, a metric called expected goal (xg_i). With that information, we can calculate the goals saved ($SV_{g,m}$) by goalie g at moment m during the entire season with the following:

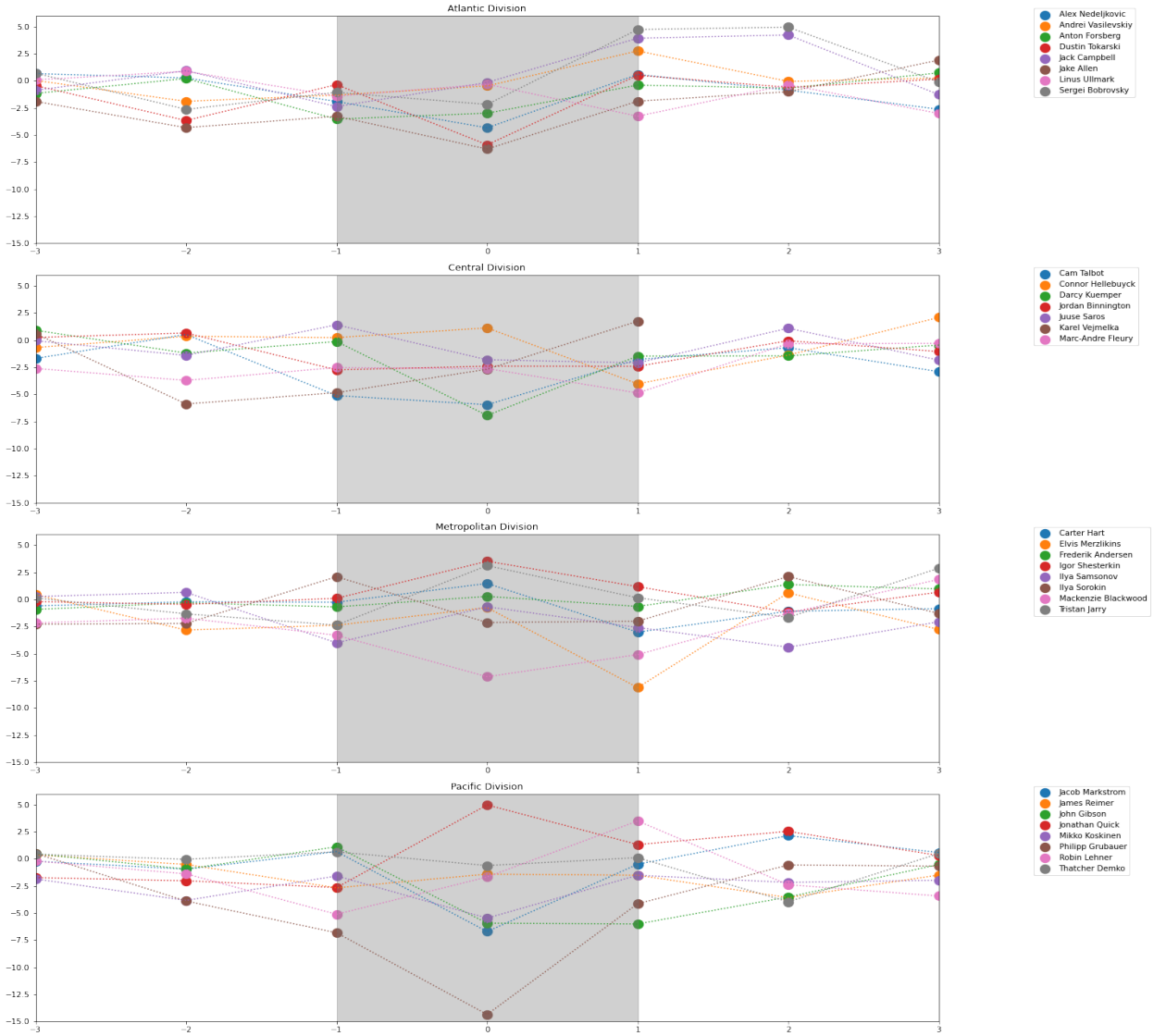
$$SV_{g,m} = \sum_{i=1}^{n} xg_{g,m,i} - GA_{g,m} \tag{1}$$

where $GA_{g,m}$ is the number of goals allowed by goalie g at moment m.

A negative total of goals saved means that the goaltender allowed more goals than expected. Oppositely, a positive total means that the goaltender allowed less goals than expected and thus "saving a goal".

Results

For every team, we took the goalie that faced the most shots and then compiled the results to compare them to the other primary goaltenders of the division.



The grey shaded area represents the *clutch moments*. Teams having success this season have at their disposal goaltenders that are performing at a high level during these important moments of a game, such as the New York Rangers with Igor Shesterkin and the Nashville Predators with Juuse Saros. These goaltenders showcast a high positive goals saved total during this season. At the other end, the Seattle Kraken are underachieving during their first season in NHL and look no further than Philipp Grubauer's poor performance this season. According to the results presented previously, the Seattle Kraken'a number one goalie allowed close to 15 goals more than expected when the score is tied.

Just a Habs Fan

Everybody in Montreal is aware that the Montreal Canadiens are having a dreadful season. Many factors can explain these performances and the absence of a NHL number one caliber goaltender is one of them. As we saw in the previous figure, Jake Allen is last or second to last in every clutch moment when comparing to other goaltenders in the Atlantic division. He has allowed 6.30 more goals than expected when the game is tied and has a negative saved goals total for every moment of the game. When a team is battling hard and surviving on the ice just to stay competitive, allowing weak goals at important moments of the game can seal the deal as hope and leadership are completely absent within the team.

We can see in the following graph that Cayden Primeau, their young prospect, gave a better chance to win as he is the only one that had a positive saved goals total in a clutch moment.