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NHL Hockey: The Rookie Wall

A common idea that circulates in the NHL media and among fans is the idea of the players "hitting the rookie wall". The "rookie wall" is the idea that rookies are not used to the length and difficulty of a tough NHL season and therefore towards the middle or the end of the NHL season most rookies cannot help but see a reduction in their playing quality. The idea of a "rookie wall", just like any idea, must be tested because our expectations can affect our decisions and our perceptions.

To investigate the idea of a "rookie wall" I downloaded the game logs of three New York Ranger rookies who played at least 300 minutes with the Rangers this season and plotted the rolling average of their points per hour against each respective game. Based on Andersson's plot it was necessary to use change point regression to determine if Lias Andersson's points per hour rolling average experienced a statistically significant change in mean at any point in the season.

Filip Chytil's points per hour begins at a very high point this season because he had one assist in his first game of the season with limited ice time in the first game (see fig. 1.). After his first game Chytil's points per hour take a humongous nose dive due to a small sample size and not recording any points for a number of games (see fig. 1.). Just as Chytil's points per hour seem like they may reach zero they start to trend upwards until they reach about 1.5 points per hour and they stay just below that number for the remainder of the season (see fig. 1.). This Trend is not what you would expect when you think of the "rookie wall".

Brett Howden's story is slightly different but it is also not the trend we are looking for with a player who has hit the "rookie wall". Howden begins the season similar to Filip Chytil, his points per hour are high due to recording his first few NHL points in limited ice time and a small sample size (see fig. 2.). As the season goes on, Howden's points per hour slowly drop with each game until the settle between 1.5 and 1.0. Interestingly, towards the end of the season Howden's points per hour takes an upward turn and spikes after game 50 of his season. This is definitely not a player who has hit the "rookie wall".

With Filip Chytil and Brett Howden visualizations were enough to decide that they had not hit the "rookie wall". Lias Andersson seems to have hit the "rookie wall" when looking at his points per hour over time. He starts the season off very slowly with no points in his first six games (see fig. 3.). Then he begins to start scoring and his points per hour climb to a peak in game 24. After game 24 we see Lias Andersson's points per hour decline rapidly until he finishes the season. The trouble here is that Lias Andersson's first NHL season was broken up by AHL stints and he only played forty-two games this season. So, to say that Andersson stopped scoring for a while because he was worn out by the long and difficult NHL season would be a stretch. I decided to do a change point regression on mean of Lias Andersson's points per hour. Change point regression is a computer algorithm that attempts to detect when a significant change in a parameter happens throughout time. In the case of Lias Andersson, the R package "changepoint" did not detect a change in Lias Andersson's average points per hour this season (see fig. 4.). Lias Andersson, Brett Howden, and Filip Chytil all did not experience the "rookie wall" this season. More research must be done to see if on average NHL on rookies tend to score less as the season goes on, but based on these findings there is some doubt to the claim that they do.

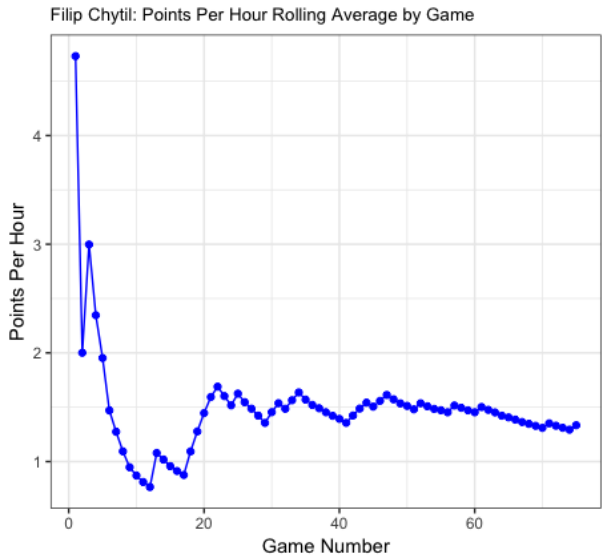

Fig. 1. Filip Chytil's points per hour rolling average. Created in R.
Source: Data from hockey-reference.com

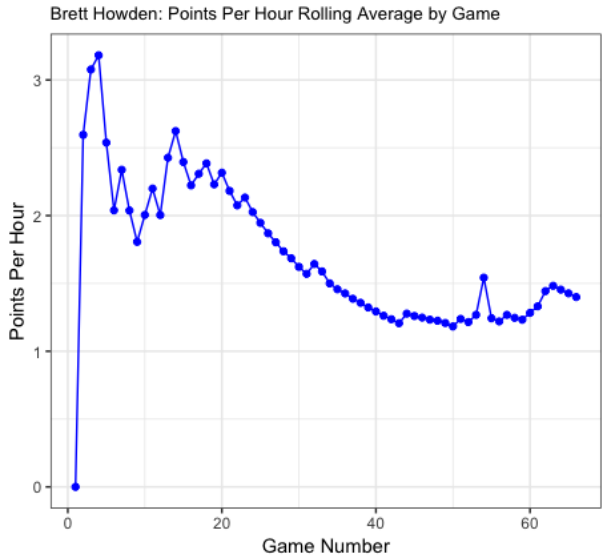

Fig. 2. Brett Howden's points per hour rolling average. Created in R.
Source: Data from hockey-reference.com

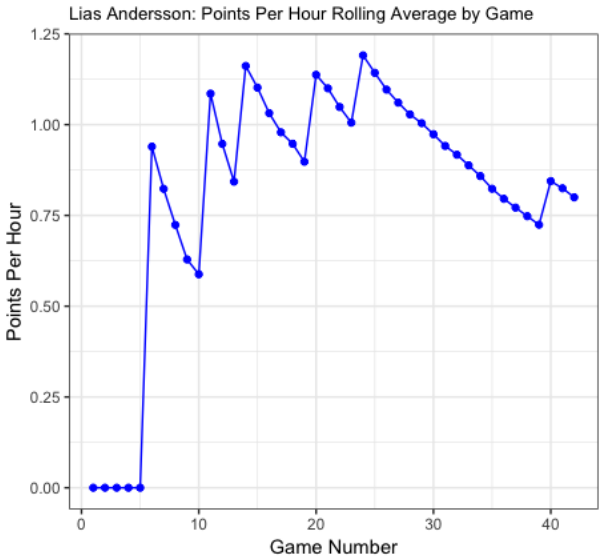

Fig. 3. Lias Andersson's points per hour rolling average. Created in R.
Source: Data from hockey-reference.com

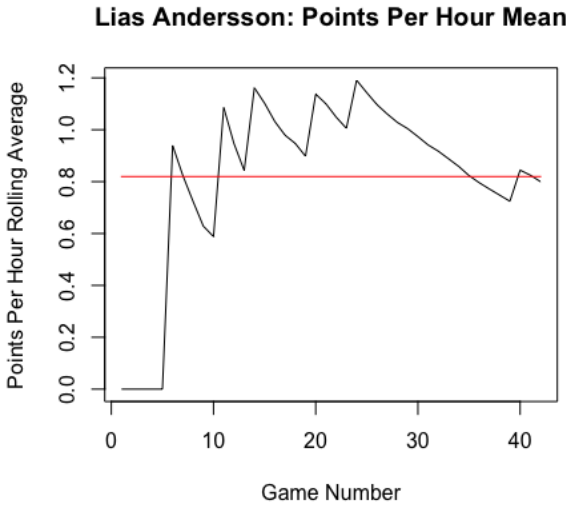

Fig. 4. Lias Andersson's points per hour with line for the mean. Only one line means there was no change point detected. Created in R.
Source: Data from hockey-reference.com.