

```
In [10]: from IPython.display import Image
import matplotlib.pyplot as plt
```

1 A review of pup inflation

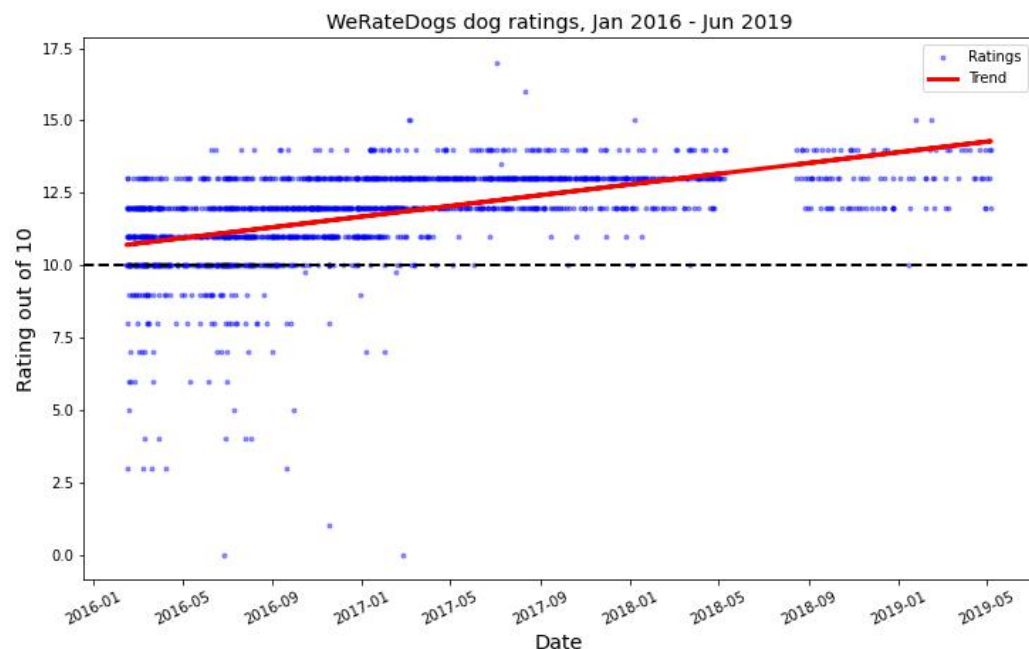
Dog ratings have now hit a stationary point, according to analysts at the WeRateDogs institute.

WeRateDogs is a twitter account where people from around the world send in pictures of their dogs and the account reposts the pictures with a rating and a comment. The tweets were scraped (not by me) using `tweet_dumper.py` where all tweets with ratings less than 26 were kept for further analysis.

We can see the general trend of approximately 1700 ratings ranging from January 2016 to June 2019. The average rating, 11.7, with a min. and max. of 0 and 17 respectively. Overtime, the ratings approach a horizontal asymptote somewhere around ~ 13 . The inflationary period ends at April 2017 which can be observed by the lack of ratings below 10. After April 2017, the ratings mostly range from 10 to 14.

```
In [7]: Image(filename='ratings.jpg')
```

Out[7]:

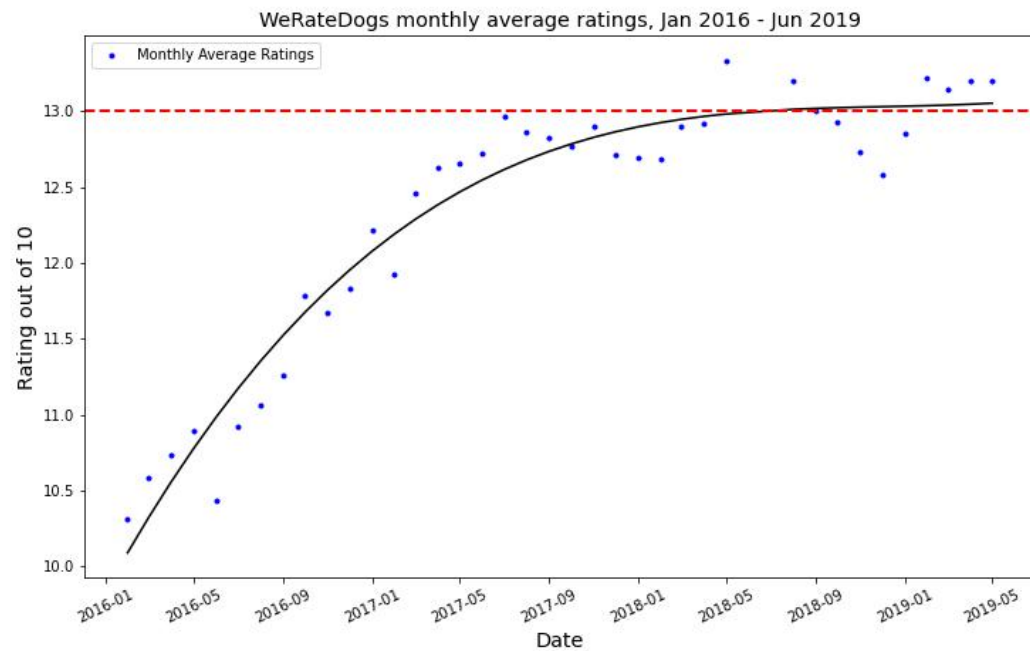


Plotting the monthly averages smooths the trend allowing us to see the asymptotic behaviour of the time series. The monthly average ratings approach 13 as time goes on. We can also observe an oscillatory behaviour from the fit by plotting the residuals.



```
In [15]: Image(filename='monthly_averages.jpg')
```

Out[15]:



Using LOESS smoothing, the oscillatory trend can be extracted from the fit. We can expect the monthly average ratings to start going back up and above 13.

```
In [17]: Image(filename='residuals.jpg')
```

Out[17]:

