

# EGH-404 portfolio 3 Semester 2 2020

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**Research Question:** What is the trend in population growth in SEQ and regional Queensland over the years?

**Research summary:** By quickly examining the data both the population of the SEQ area and regional Queensland have both increased in population over the past 10 years. The population has also shown a steady growth pattern rising by roughly the same percentage each year. In this report various data sets relating to population will be examined in further detail.

**Data Collection:** Population data from both South East Queensland (SEQ) and Regional Queensland has been gathered by using data from census data from the Australian bureau of statistics (ABS). The time frame that is being looked at will be 10 years from 2006-2016 as census only happens every 5 years and 2016 is the most recent collection of data. There is However estimation data that can be used to fill in the years in-between all the way up to 2019. There is also data from the census that shows the category of people that live the specific regions such as if the person is male or female, over or under 18 etc... this data could also be used. There is also data on the open data portal that has information that relates to estimates for each Local government area in Queensland (LGA) that can be used in order to find more in depth numbers for the specific areas in the SEQ and regional Queensland. There are also various reports and papers on this same topic that have plenty of amazing information, statistics and numbers inbuilt into them that can be checked for clarity and confirmation.

**Data analysis and presentation:** The data found from the sources above was initially ran through MATLAB to isolate the numbers for the SEQ and regional Queensland areas specifically. Once this was done some basic plots were made to show the trend of the population throughout the past 10 years.

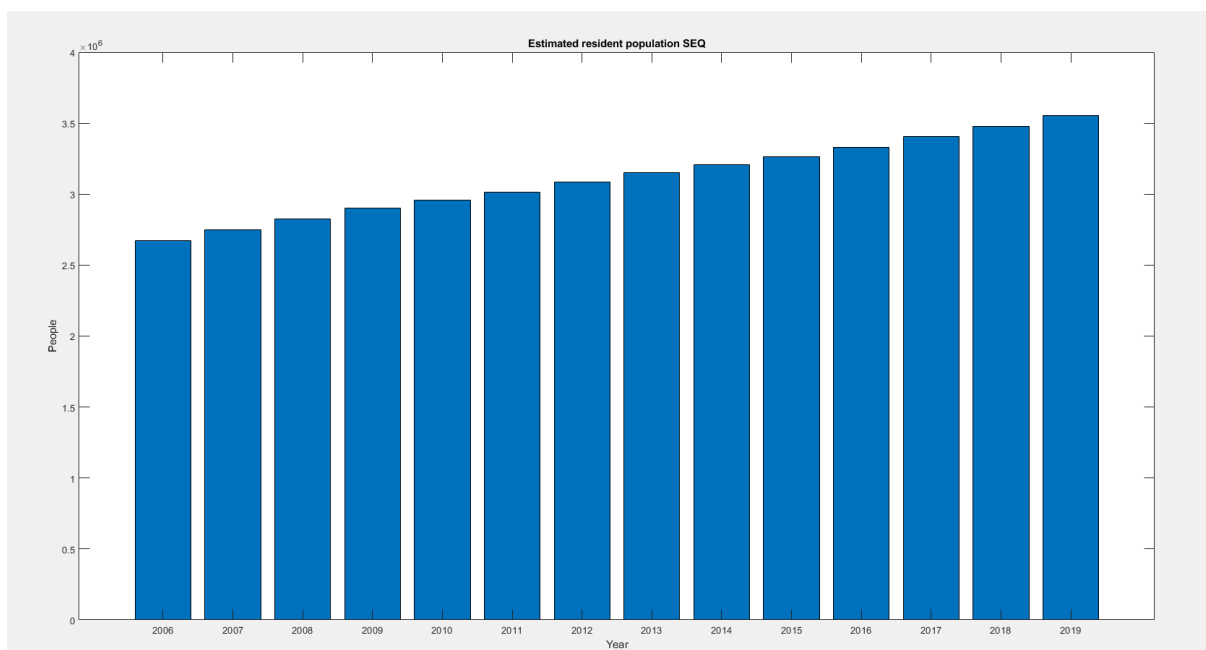


Figure 1. Bar graph of population over the years for SEQ

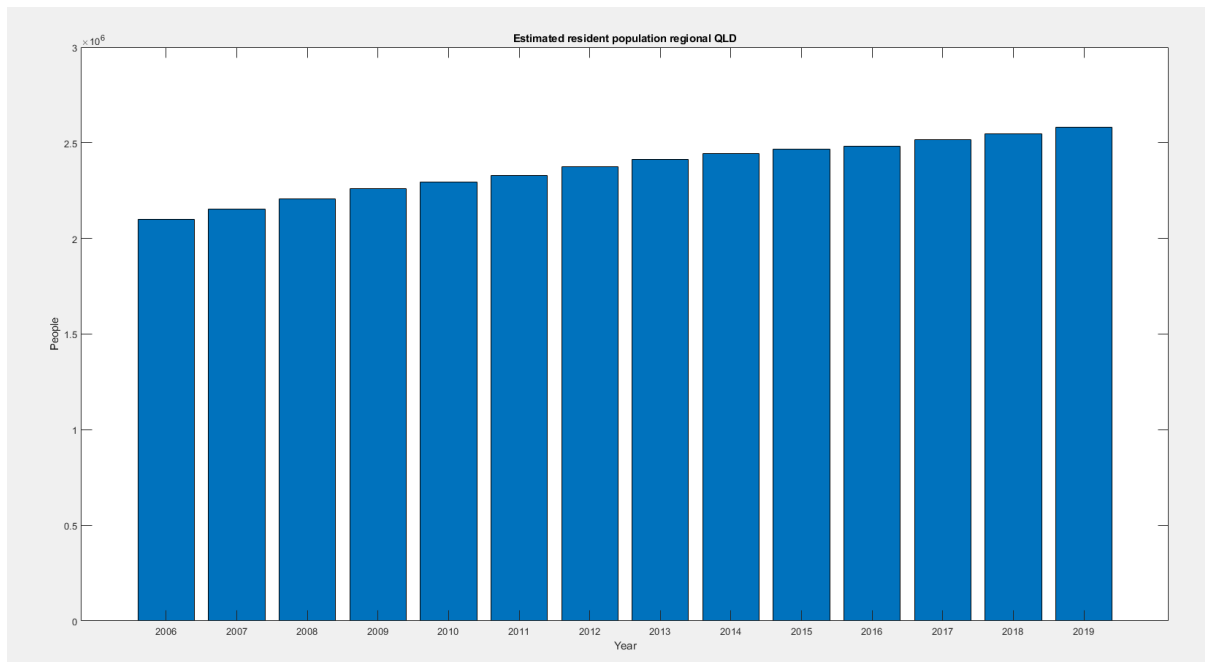


Figure 2. Bar graph of population over the years for regional QLD

In these two plots it's clear that the population has been steadily increasing over the past 13 years. While this growth seems to fluctuate between years it always seems to sit at a rather steady rate with no outliers in terms of the growth % visually in either region. It can also be seen that the SEQ region has a slightly higher rate of growth then Regional Queensland. The data has also been used to find these specific percentage rates of growth which reflect the above statement.

Year (ending June 30)	Number	Change in number	Change in percent
2006	2,671,361		
2007	2,746,702	+75,341	+2.82
2008	2,823,685	+76,983	+2.80
2009	2,903,160	+79,475	+2.81
2010	2,959,328	+56,168	+1.93
2011	3,012,313	+52,985	+1.79
2012	3,083,016	+70,703	+2.35
2013	3,149,293	+66,277	+2.15
2014	3,207,108	+57,815	+1.84
2015	3,262,446	+55,338	+1.73
2016	3,328,576	+66,130	+2.03
2017	3,403,875	+75,299	+2.26
2018	3,478,454	+74,579	+2.19
2019	3,554,819	+76,365	+2.20

Figure 3. Total number of people per year and percentage change for SEQ

Year (ending June 30)	Number	Change in number	Change in percent
2006	2,099,727		
2007	2,152,111	+52,384	+2.49
2008	2,207,301	+55,190	+2.56
2009	2,260,292	+52,991	+2.40
2010	2,296,396	+36,104	+1.60
2011	2,329,342	+32,946	+1.43
2012	2,373,850	+44,508	+1.91
2013	2,413,442	+39,592	+1.67
2014	2,442,918	+29,476	+1.22
2015	2,465,866	+22,948	+0.94
2016	2,482,480	+16,614	+0.67
2017	2,515,112	+32,632	+1.31
2018	2,547,827	+32,715	+1.30
2019	2,580,326	+32,499	+1.28

Figure 4. Total number of people per year and percentage change for regional QLD

These figures show the growth rate in SEQ is indeed higher than that in regional Queensland but also shows that the most growth was recorded in the early years of the data from 2006-2008 both the SEQ region and Regional QLD showed their highest growth rates in the past 13 years. It's also interesting to note that both regions had their worst years growth wise in 2015 with SEQ only having a 1.73% increase and regional QLD having a 0.67% increase. These statistics were then plotted in MATLAB to show a nice plot of the data.

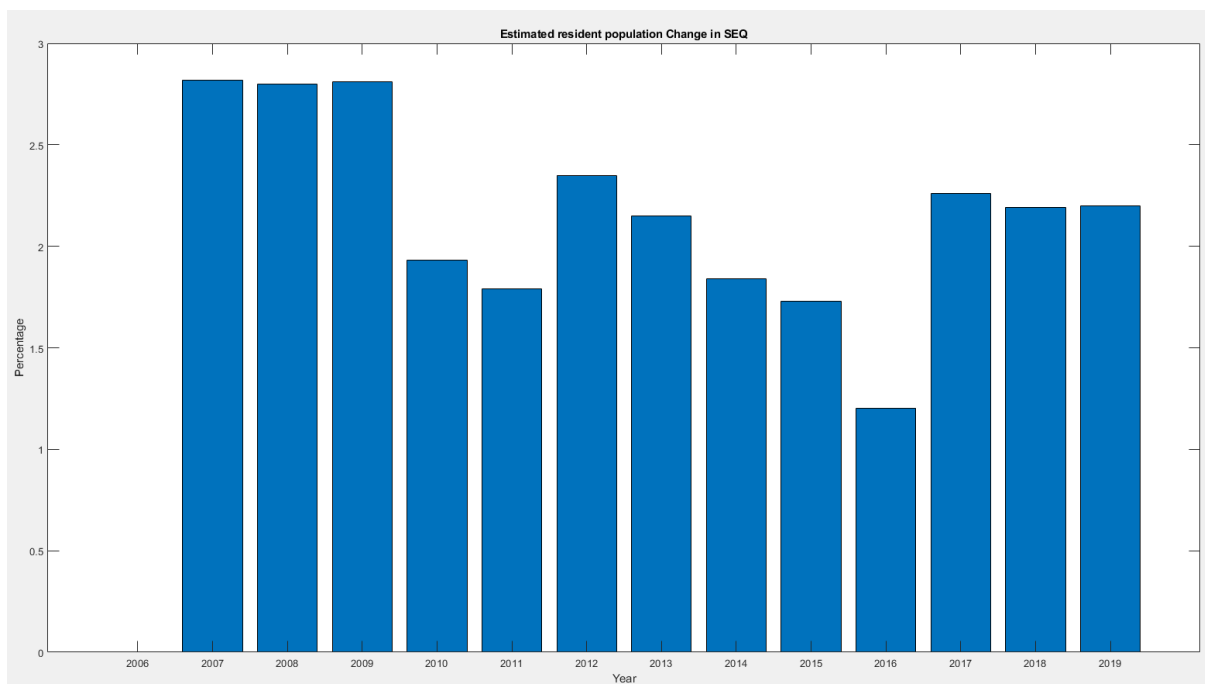


Figure 5. Bar graph of population change over the years for SEQ

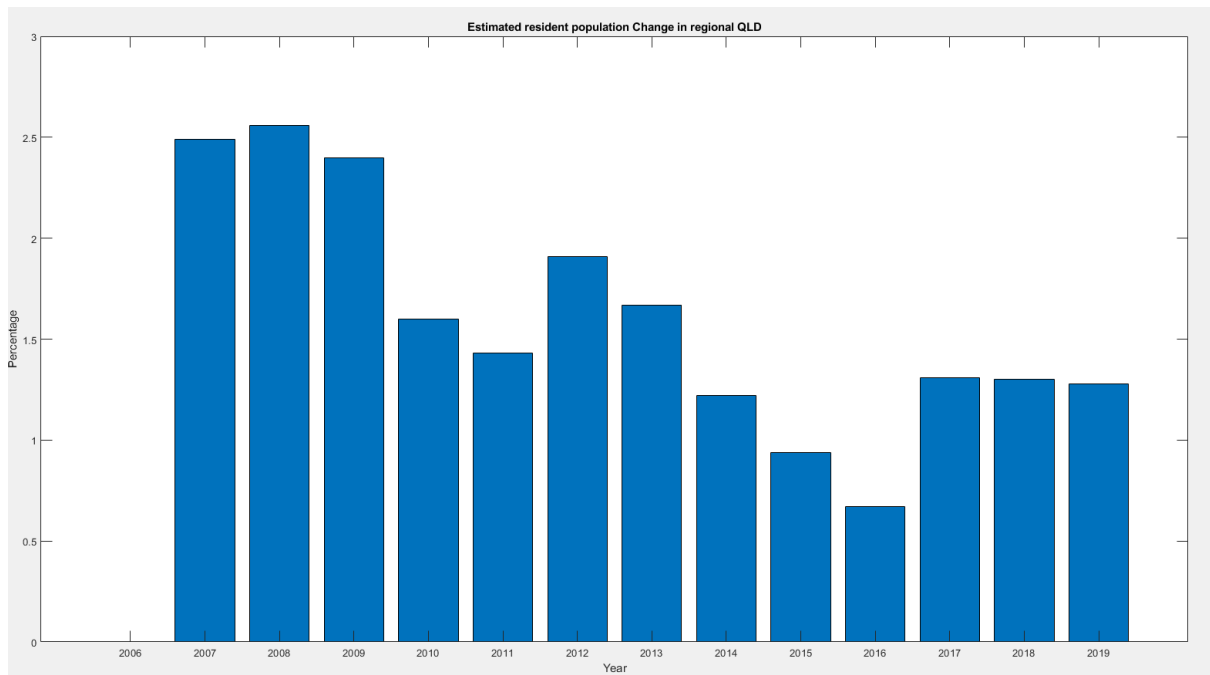


Figure 6. Bar graph of population change over the years for regional QLD

## Conclusion:

To conclude the data obtained from various credible sources relating to the population of both south east Queensland have shown that both of these populations are steadily growing with an average growth rate of 2.4% per year for the SEQ region and 1.73% per year for regional QLD. Clearly showing the trend in population growth in these areas.