ASSIGNMENT 2 – ECON 102

- By Tarun Velicheti (tveliche)
 Student ID No. 20902264

## PART A – The Cost of Living:

Question 1:

The above graph depicts us the evolution of the hourly nominal wage for males and females. It shows the evolution starting from 1997, till 2019. We observer that the male hourly wages have been greater than women's majorly throughout the year. There is not a common trend among both the series. There is instance while male's hourly wage increased whereas the female's decreased and vice-versa. There are also instances where both male and female hourly nominal wages have increased.

Hourly real wages in
Business, building and other
support services (British Columbia)
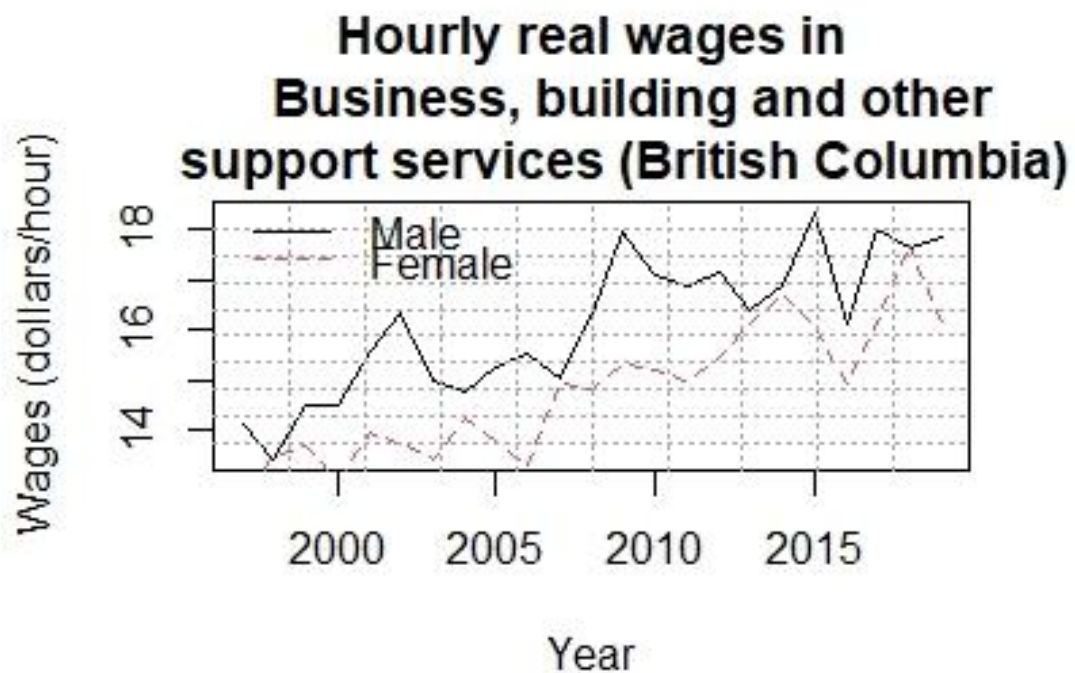
The following graph depicts the evolution of hourly real wage in dollars of 2002 for males and females. The graph shows the hourly wages of males and females starting from 1997 until 2019. The graph shows wider gap between the hourly wage among both genders than the previous nominal graph.

Hourly real wages in Business, building and other support services (British Columbia)
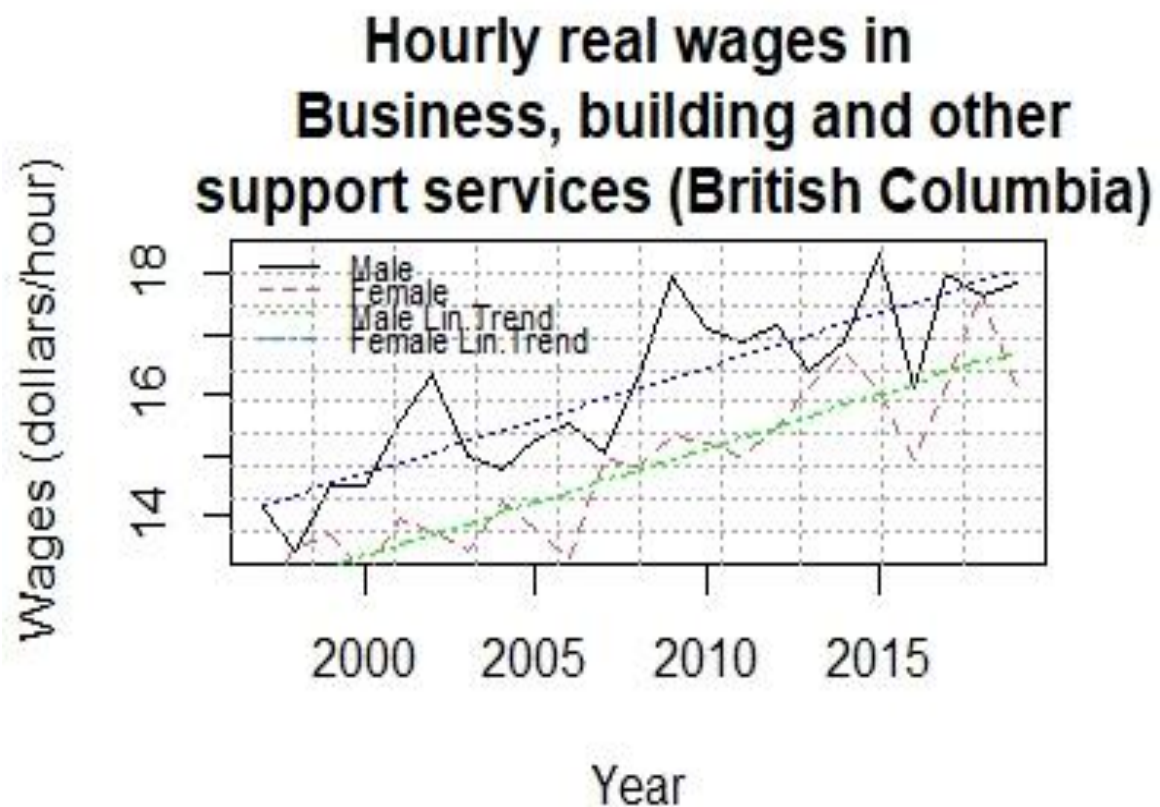
The Above plot depicts the real hourly wage for both the genders along with the linear trends of both the series as shown in the legend. The gap between both the linear trends seems to reduce throughout time, though it is very small, it is noticeable change. The wage gap is reducing over the average. The average annual change for males is = 0.175 while the average annual change for females is = 0.177. There is not much difference between the nominal per capita GDP and the real per capita GDP plots.

Question 4:

Scatterplot between both genders detrended series
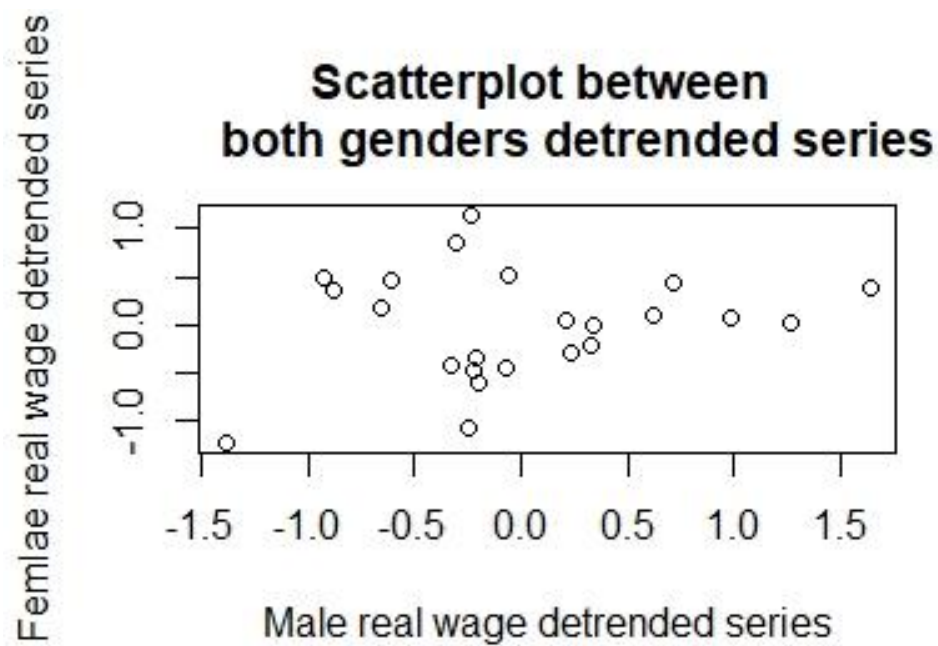
There is no comovement between the cyclical components of the detrended series of both the genders. The linear trends for both the series are very similar, therefore after detrending both series, the common behaviour between the male and the female series is lost. Therefore, there is no comovement between the detrended series.

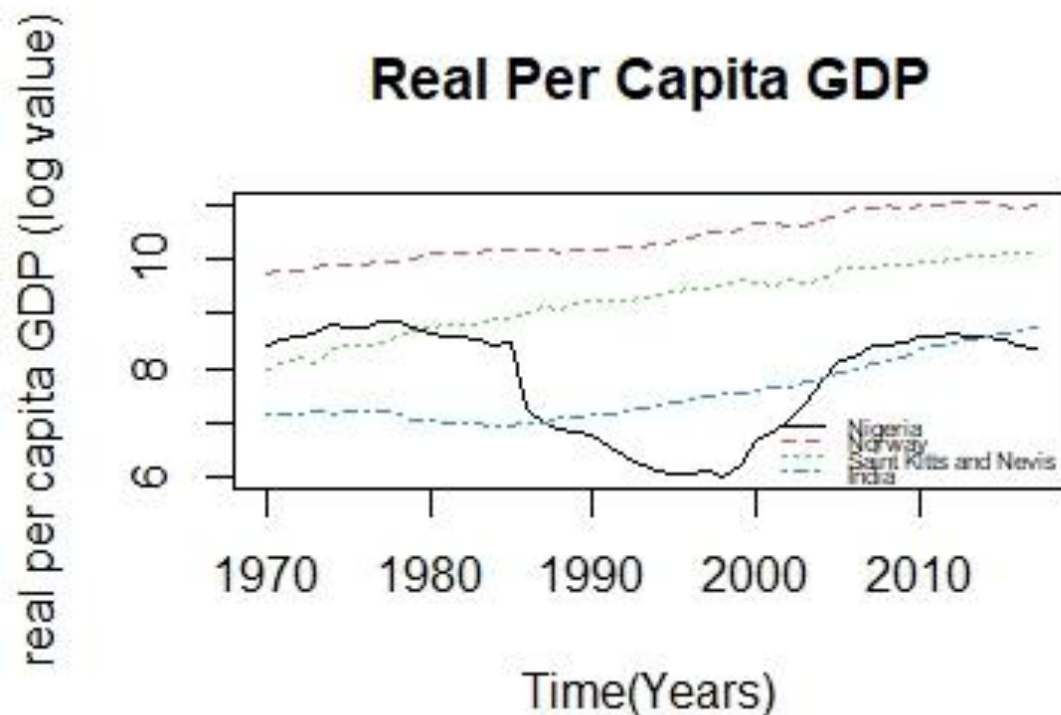# PART B: Business Cycle, Growth and Inequality

Question 1:

NGA -> Nigeria

NOR -> Norway

KNA -> Saint Kitts and Nevis
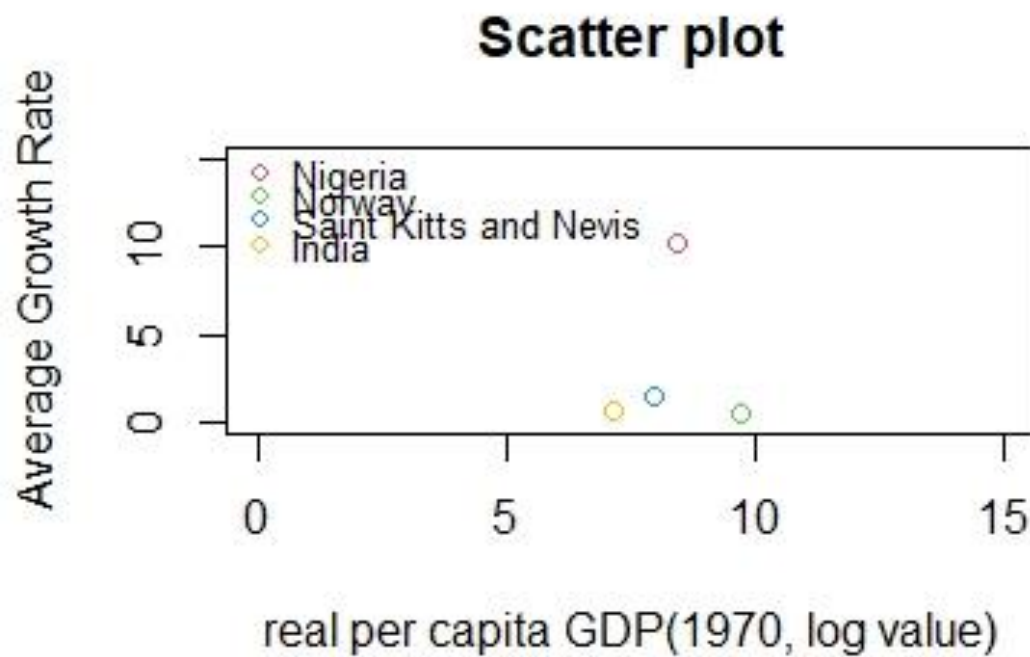
IND -> India

Question 2:

The above plot depicts the real per capita GDP of Nigeria, Norway, Saint Kitts and Nevis, India in log scale. We can see that the real per capita GDP is increasing for Norway, Saint Kitts and Nevis and India along with time, but Nigeria has a decrease in the real per capita GDP in late 1980s, it reaches a very low value but has recovered in the early 2000s.
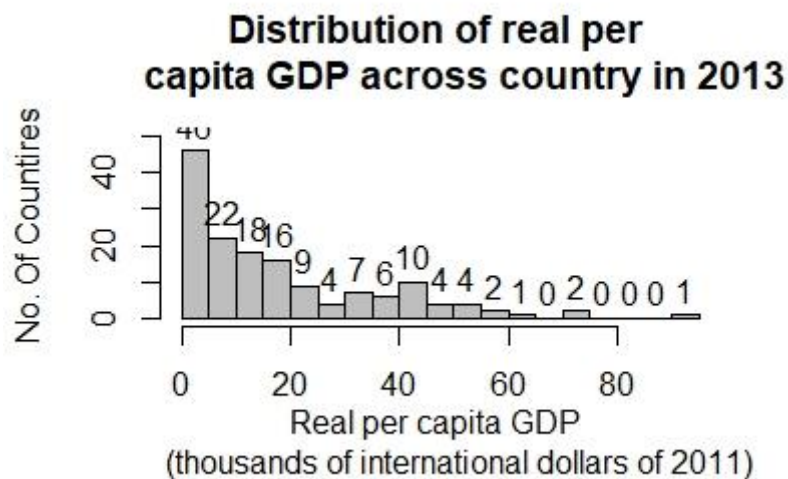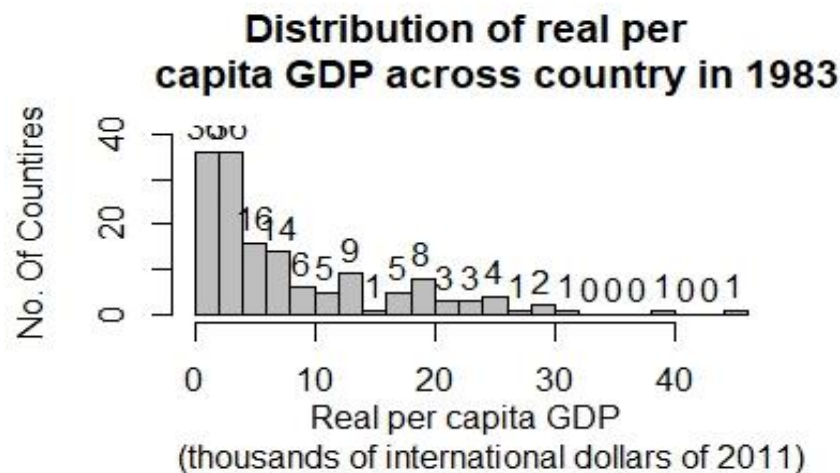
<u>Question 3:</u>

Cyclical components
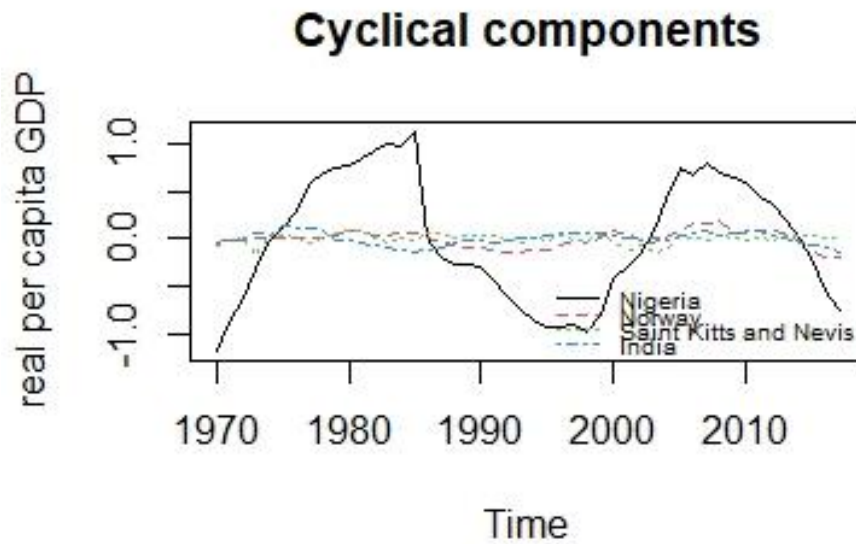
None of the countries have comovement among the different business cycles. There is a period when both norway and nigeria experienced a decrease in their cycle(late 1980s to early 2000s). The change in norway is small sompared to the change in Nigeria's cycle.
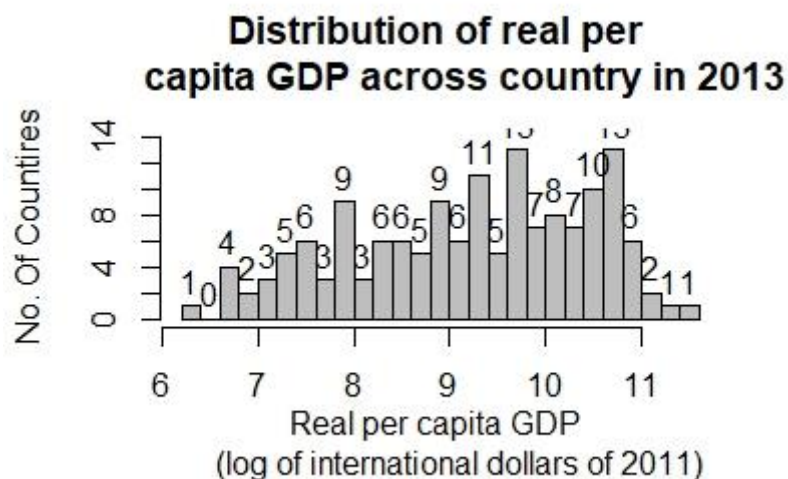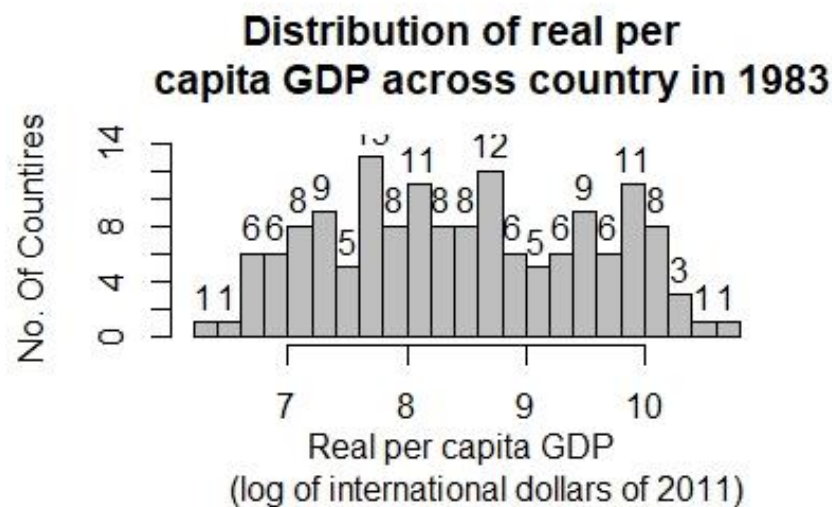
Question 4:

Scatter plot

The average growth rate of Nigeria is the highest, even though it had a shar fall in the real per capita GDP during the late 1980s. The growth rate for India has been increasing. The four countries are converging to each other and they will have reached the same real per capita GDP at some point of time.

Question 5:

Distribution of real per capita GDP across country in 1983

Distribution of real per capita GDP across country in 2013

The inequality in the Real per capita GDP is clearly visible in the histograms presented above. The top histogram shows us the distribution of countries in 1983, based on their Real per capita GDP in thousands of international dollars of 2011. There is a large proportion of the countries lying in the lower per capita GDP group. The bottom histogram illustrates us the distribution of countries in 2013, based on real per capita GDP. We can see that the countries in the lowest per capita GDP group have increased many countries have increased their per capita GDP. The proportion of the poor countries has decreased.

Distribution of real per capita GDP across country in 1983

No. Of Countires

Real per capita GDP
(log of international dollars of 2011)

Distribution of real per capita GDP across country in 2013

No. Of Countires

Real per capita GDP
(log of international dollars of 2011)

The top histogram shows us the distribution of countries in 1983, based on their Real per capita GDP expressed in logs. Majority of the countries are lying in the mid-range partitions of the real capita GDP expressed in logs. In 2013, we can clearly observer that majorly, countries lie in the middle or the upper middle partitions of the real per capita GDP.

Series can be expressed in logs to easily fin the growth rate of the real per capita GDP of different countries. We have seen in previous pairs of histograms that the proportion of poor countries has decreased. Expressing in logs can make it easy to find the growth rate, which is increasing for many countries. Therefore, it is different expressed in logs.