Assignment 2 PDF
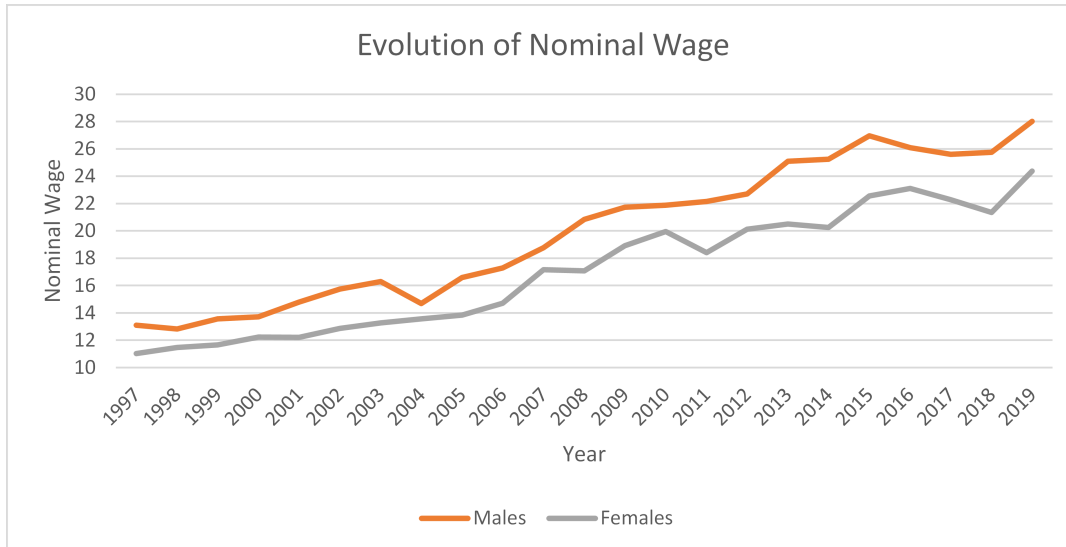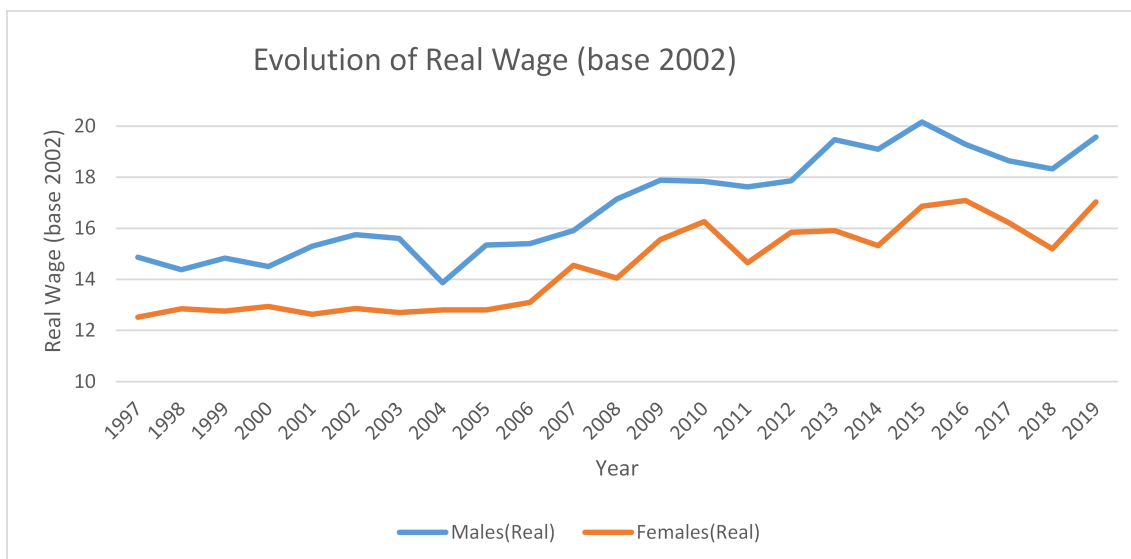
Part A: The Cost of Living

1.

It seems like the Nominal wage for both males and females increase over time at a constant rate, with a linear-like trend. The wage of males and the wage of females increase with a similar rate with the increasing rate of males' wage slightly higher than the increasing rate of females' wage after roughly 2010. The males wage dropped during 2003 and 2004 and re-rise where the females' wage constantly increasing smoothly. During 2010 and 2011, females' wage dropped and increased where males' wage increase smoothly.
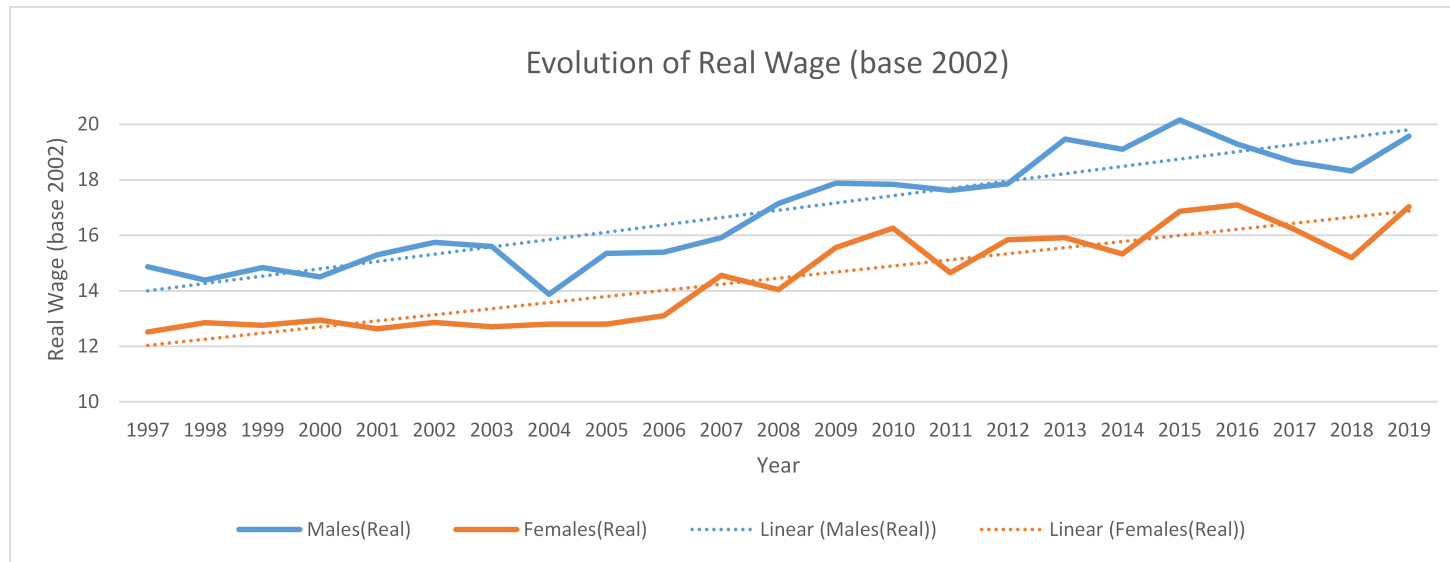
2.

The females' real wage stay almost constant from 1997 until around 2005, and then it starts to grow after 2005. Males' wage at the time period 1997-2005 on the other hand rise and fall: it reaches its local maximum at around 2002 and local minimum at 2004. The difference between the real wage of male and females is at largest around 2002 and the smallest at time
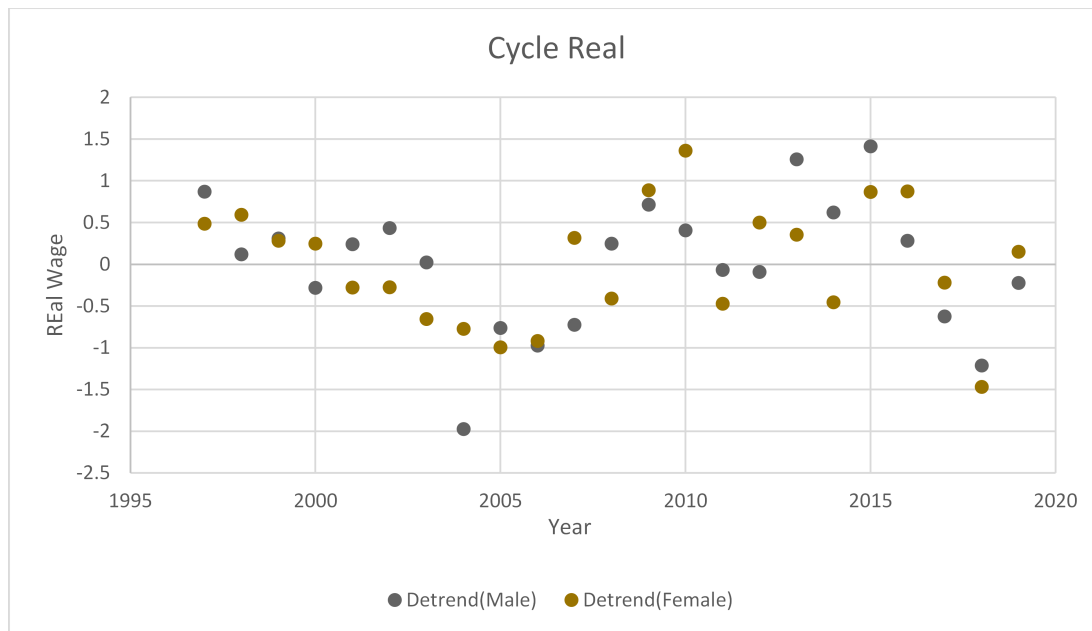
2004 in the time period 1997-2005. Comparing to the nominal wage graph, the average growth rate of real wage stays 0 during 1997-2005 where it positive during 1997-2005. And the fluctuation of the real wage is steeper than the fluctuation of the nominal wage. These differences is caused because the real wages are the real value at time 2002, which means the real wages base 2002 is the value of V_t at time t convert to time 2002. Therefore the real wage has the same "unit" that we can equally compare just the value of the wages in different time period instead of comparing values from different time period. Therefore the real wage chart provide a better picture of the standard of living of individuals working in a industry.

3.

Observe in the above graph with the linear trend for wages of males and females, the trend for males are increasing faster than the trend for females, since both trends are linear, this observation implies the males' wage is increasing faster on average than females'. This means the wage gap between male and female is increasing on average. By observing the X Variables coefficients from the males' wage trend and females' wage trend, we found that the on average, males' real wage increase by $0.2636 per hour per year, whereas females' real wage increase by $0.2202 per hour per year. And plus the fact that males' real wage is higher than females' at all time in this graph, the real wage's increasing rate of male is greater than female, and therefore the wage gape between males and females are increasing on average.

4.

Cycle Real

Observe in the graph above, we can see that when the cycle of males' wage is above the trend, the cycle of females' wage is above the trend most of the time, so does it when they are below the trend. And the change of the males' wage cycle is similar to females'. Therefore we can say that they have positive co-movement between males' wage and females' wage in terms of their cycle. One possible reason that they're having positive co-movement is because although females' wage is lower than males' at all time, they are affected by the same events since they are in the same industry in the same province. They are in the same region and therefore if the economy of that region is getting better, their wage will likely increase, both males' and females', and vise versa.
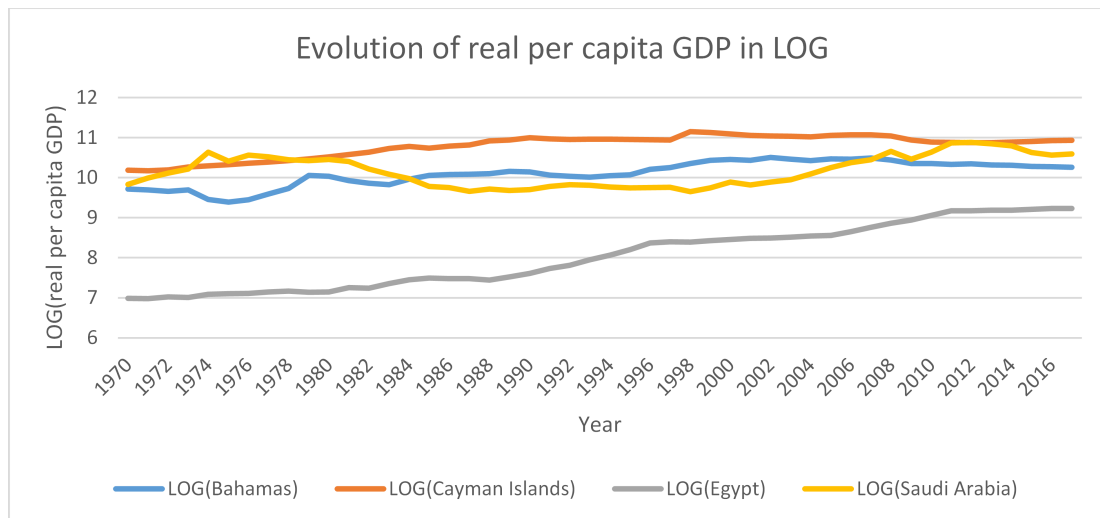
Part B: Business Cycle, Growth and Inequality

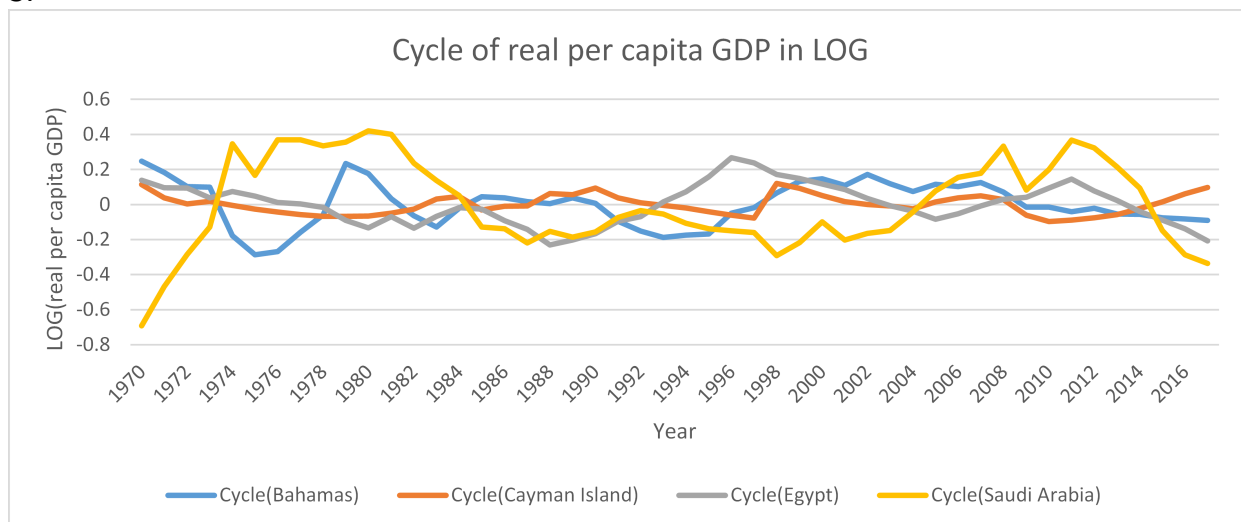1.
BHS: Bahamas
SAU: Saudi Arabia
EGY: Egypt
CYM: Cayman Islands

2.

Evolution of real per capita GDP in LOG

Observe that Egypt's real per capita GDP is lower than the other three countries in the graph, and Cayman Islands' real per capita GDP is the highest for the majority of the times. The real per capita GDP has smaller distance between Bahamas, Cayman Islands, and Saudi Arabia. Egypt grows its real per capita GDP the fastest among these 4 countries. Cayman Islands, Egypt and Bahamas' real per capita GDP is growing most of the time while Saudi Arabia's real per capita GDP decays during 1980~1987 and then starts to rise after 1998.

3.

Cycle of real per capita GDP in LOG

- Before 1984, Egypt had positive co-movement with Cayman Island; after 1984, Bahamas had positive co-movement with Cayman Island. Bahamas is having a negative co-movement with Saudi Arabia.
- We observe a strong negative co-movement between Bahamas and Saudi Arabia between 1973 and 1979. According to Wikipedia, this is due to the Oil Crisis that started in 1973, which Most Middle East countries led by Saudi Arabia banned to oil export to Countries such as United States. (1973 Oil Crisis, 2021) According to Foreign Trade, the majority of trades that the Bahamas had is with the United States, therefore we can consider The Bahamas and the United States as strong trading partners, and they have positive co-movements. (Foreign Trade) Since starting from 1973, the conflicts between the U.S. and the middle east is continuous because of the oil issues, they keep having negative co-movements ever since. Since the U.S. is having positive co-movement with the Bahamas and

U.S. is having negative co-movement with Saudi Arabia, it is obvious that the Bahamas is having negative co-movement with the Saudi Arabia.
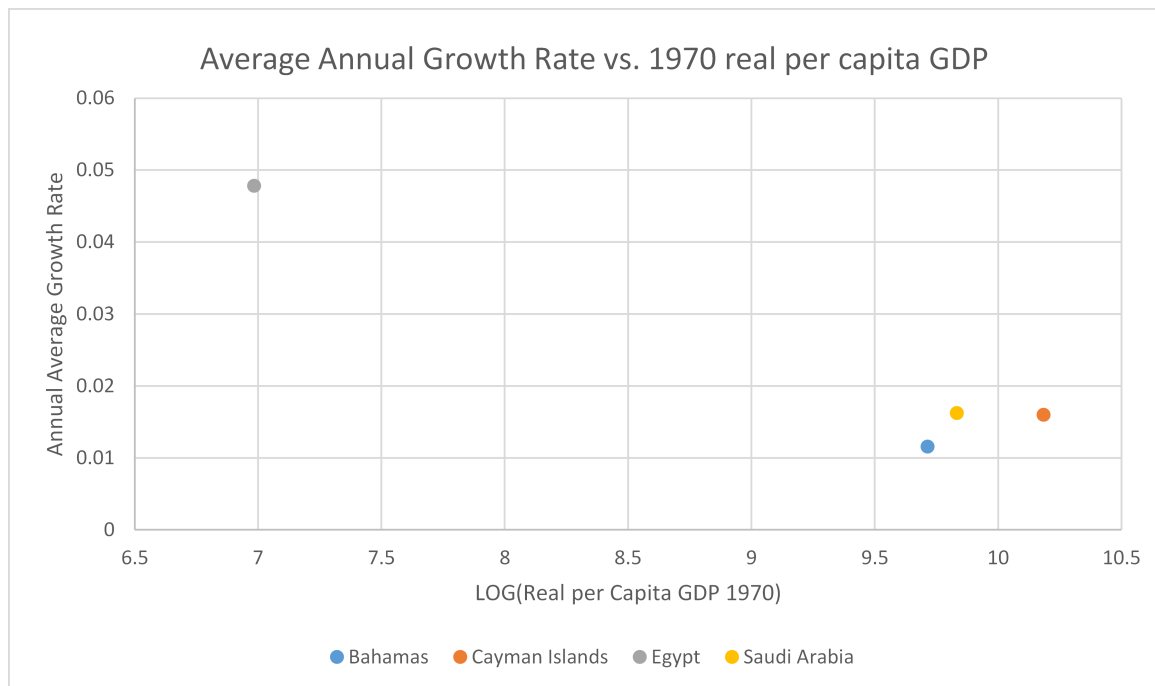
- There are several common recessions observed in the graph. The most obvious one would be from 1973 to 1975. This is due to the oil crisis we mentioned in the previous point. Since both Bahamas and Cayman Island are countries from the central America, they rely on oil import. Since the middle east banned the oil export to so many countries from 1973, that resulted the rise of the oil prize of almost all the countries that relies on oil import, including Bahamas and Cayman Island. And since Egypt has bad relationship with Saudi Arabia due to religious reasons and political stands, (Egypt-Saudi Arabia relations, 2021) they have negative co-movements and therefore Egypt is affected by this event. In fact, almost all the countries worldwide that relies on oil import was experiencing this recession because the oil prize had gone up so much.

- Citations:

Wikipedia contributors. (2021, November 13). 1973 oil crisis. In *Wikipedia, The Free Encyclopedia*. Retrieved 16:13, November 21, 2021, from https://en.wikipedia.org/w/index.php?title=1973_oil_crisis&oldid=1054960230

Wikipedia contributors. (2021, July 6). Egypt–Saudi Arabia relations. In *Wikipedia, The Free Encyclopedia*. Retrieved 16:33, November 21, 2021, from https://en.wikipedia.org/w/index.php?title=Egypt%E2%80%93Saudi_Arabia_relations&oldid=1032229271

The Bahamas - Foreign Trade. Encyclopedia of the Nations. (n.d.). Retrieved November 21, 2021, from https://www.nationsencyclopedia.com/Americas/The-Bahamas-FOREIGN-TRADE.html.

4.

Observe that Egypt has the lowest real per capita GDP in 1970 and the highest average growth rate, we can say that Egypt is converging with all other three countries. Bahamas has the second lowest real per capita GDP in 1970 and the lowest average growth rate, we can tell that Bahamas is not converging with either Saudi Arabia or Cayman Islands. Saudi Arabia's real per capita GDP is less than Cayman Island, but the average growth rate of Saudi Arabia is slightly higher than
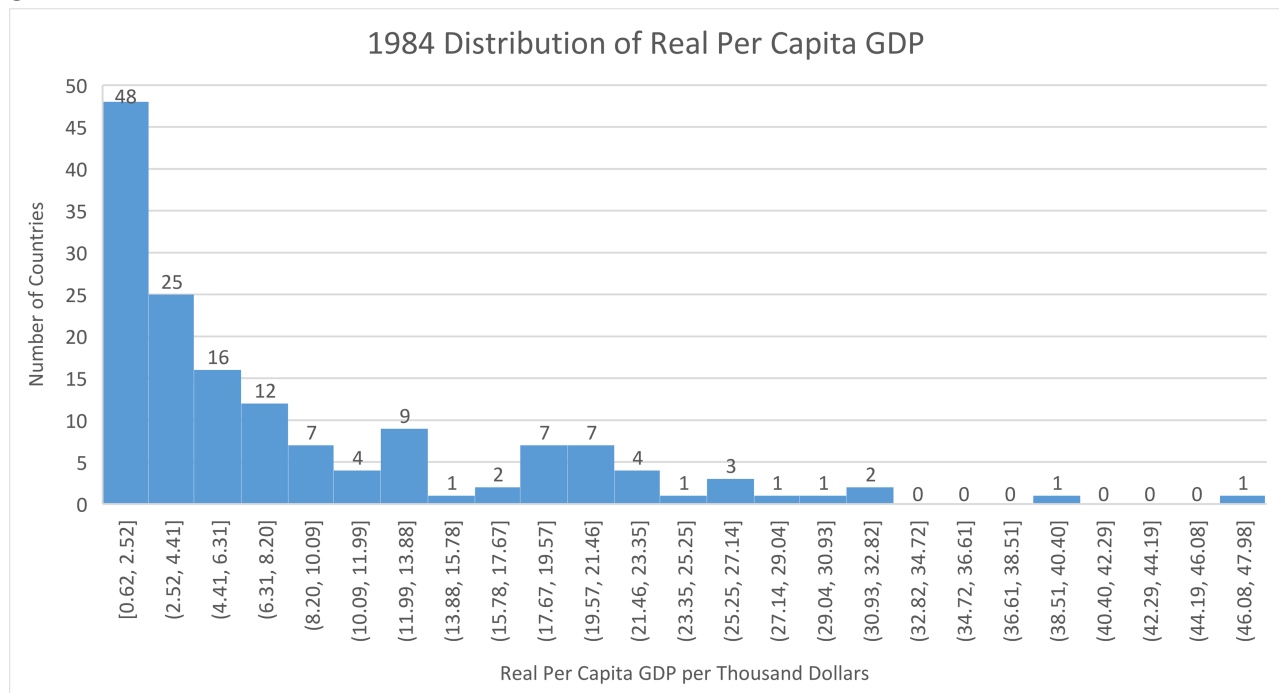
Cayman Island, therefore we can say that Cayman Islands is slightly converging with Saudi Arabia.
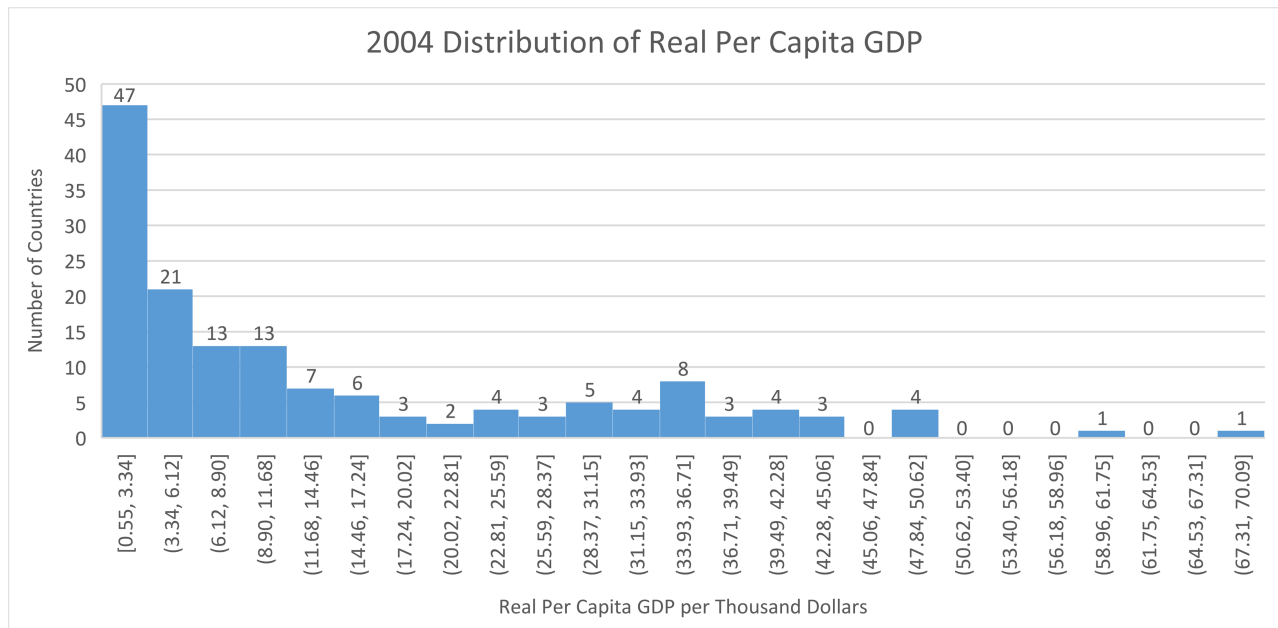
According to the Characteristics.csv data:
The average growth rate of Egypt is 4.15 while the other three countries are around 1.5~1.6. Egypt also has a low Initial GDP of 632.82 while the other countries' Initial GDPs are above 16000. These numbers shows a picture almost like Egypt's GDP is chasing the other three countries while they are increasing relatively slow. And since Egypt's Life expectancy, openness, and education are much lower than the other three countries, we can tell that Egypt is developing fast while the other three countries are in a relatively steady state in terms of growth.
Bahamas' Education, life expectancy, openness and average growth rate is less than Cayman Island, meaning Cayman Island's citizens have a better living condition than Bahamas' citizens. Plus the fact that Cayman Island's Initial GDP and average growth rate are all higher than Bahamas, the data shows that Cayman is economically better than Bahamas and its economy is growing faster than Bahamas, therefore the distance between those two countries becomes wider as time goes, therefore they are not converging to each other.
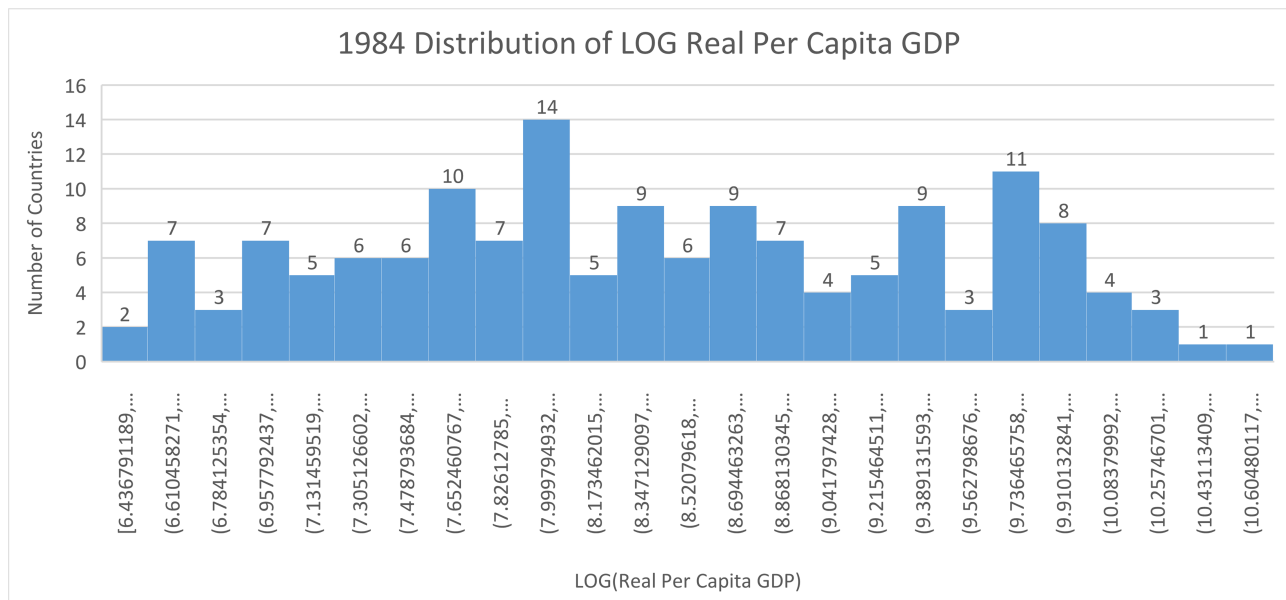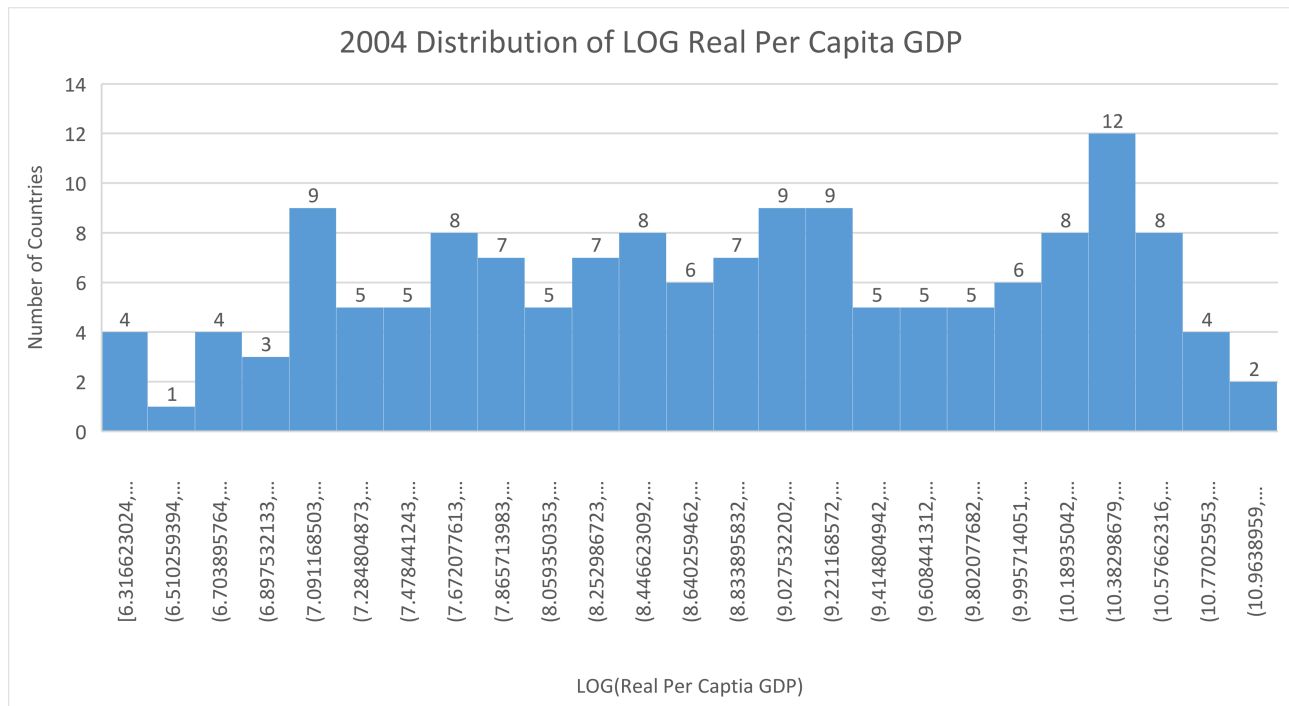
5.

2004 Distribution of Real Per Capita GDP

Observe from the two graphs above that from 1984 to 2004, the number of countries that is very poor has decreased: The poorest number of countries has decreased from 48 to 47, and the second poorest has decreased from25 to 21, the third poorest has decreased from 16 to 13. Therefore we can say that the proportion of poor countries has decreased.

In terms of inequality, since the proportion of poor countries decreased and the proportion of rich countries stays similar, we can say that the inequality slightly shifts into more inequal state.

6.

1984 Distribution of LOG Real Per Capita GDP

2004 Distribution of LOG Real Per Capita GDP

Observe from the above two graphs that the number of poor countries has decreased from 1984 to 2004, proportion of medium income countries increased as well as the rich countries. As a result more inequality occurs in 2004 than it is in 1984. The shape of the distributions in part 5 is different with the above two graphs is because large differences in dollars translate into small differences in logs, this is why the distribution looks more equally spread on both sides of the center when the variable is expressed in logs(Mobius 8a).