2. Growth rates (2): computation and analysis of convergence.

**2.1 (Excel-based) Download the file “MA2 – 2022-2023 – AP2” from Fenix and perform the following exercises:**

2.1.1 Plot the evolution of GDP per capita over time in these ten economies/regional groupings in a graph.

2.1.2 Discuss, from an economic perspective, what you see in the table and in the graph. Which countries seem to have grown the fastest over these three decades? Are there cases of economic decline? In general, did the countries that started out poorer grow faster or slower than the countries that started out richer. What factors could explain and account for all these phenomena?

2.1.3 Compute the (continuous and discrete) average annual growth rates for these ten countries in the period 1989-2019.

2.1.4 Based on your answer to 2.3, which countries did Portugal experience real convergence towards in the period 1989-2019, and which countries did it experience real divergence from?

2.1.5 Plot in a scatterplot graph the initial GDPpc and the (continuous) average annual growth rate of these ten countries/groups of countries except for the World. Discuss whether the data and the graph are suggestive of economic convergence or divergence among this group of countries.

2.1.6 At the average annual growth rate for 2009-2019, how many years will it take for China’s GDP per capita to be the same as the Portuguese GDP per capita of 2019?

2.1.7 Assuming that both Portugal and China continue to grow at their average annual growth rates for 2009-2019, how many years will it take for China’s GDP per capita to catch up to Portugal’s GDP per capita? And how many years will China take to reach the United States’ GDP per capita if both economies continue to grow at their 2009-2019 average rates? Discuss, economically, whether this seems likely or unlikely, and why in your view that is the case.