

# Power BI - GDP percentage per country

## Introduction

This report analyses the performance of the global economy from 1960 to 2022. This is done by analysing the percentage change in Gross Domestic Product (GDP) across all countries. Gross Domestic Product (GDP) measures the total value of all goods and services produced in an economy over a year. The percentage GDP produces either a positive or negative per cent, is calculated using the equation:

$$\text{Economic Growth} = (\text{GDP 2} - \text{GDP 1}) / \text{GDP 1}.$$

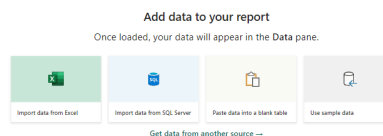
GDP 2 = represents the GDP at a later time

GDP 1 = represents the GDP at an earlier time

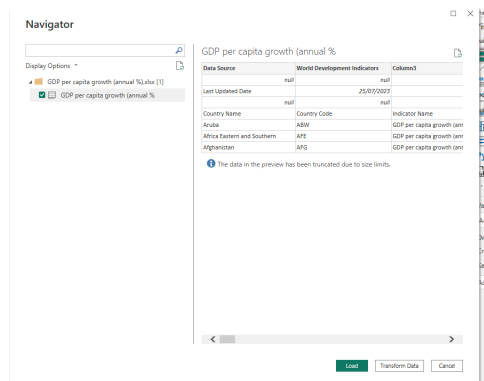
Power BI will be used to visualise and analyse data for all the countries listed in the GDP growth per capita Excel file, this data had anomalies as a large number of countries from 1960 to 1980 had no data; also some countries were not linked to a region. By exploring the trends of GDP percentage, we will better understand the interconnectedness of global economies and how events around the world affect the GDP of individual countries.

## Importing the data into Power BI

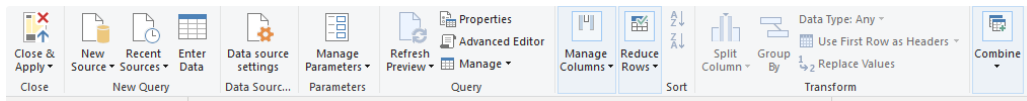
- The first step was to save the two Excel files onto the computer.
- The next step was to open Power BI, and then add data from Excel (as the data was in an Excel file.)



- After the Excel file was chosen, the next step was to transform the data, this was done by clicking the data set, and then the transform data button.



- The data was transformed, by removing the blank rows, and by clicking the reduce rows, this removed the first three rows, as there is no data. Then the 'Use First Row as Headers' was clicked, to ensure this data wasn't included when creating graphs.
- Then after the data was changed, I clicked close and applied. This means the data was now in Power BI to use.



## Analysing the data in Power BI

Figure 1 illustrates the GDP of each region as a percentage from 1980 to 2020. I chose these dates as there was missing data for many countries from 1960 to 1980, which made it difficult to analyse. Figure 2 shows a table with the data points in Figure 1 as a table, as the y-axis has large intervals of 100 therefore patterns and anomalies become more noticeable in Figure 2. The questions below come from looking at the data in Figure 1.

- Q1: What are the key differences in GDP across various regions between 2019 and 2022?
- Q2: What factors contributed to the significant decline in GDP in Europe and Central Asia between 2005 and 2010?
- Q3: What are the main drivers behind the substantial decrease in GDP for the Middle East & North Africa region from 1990 to 2020?

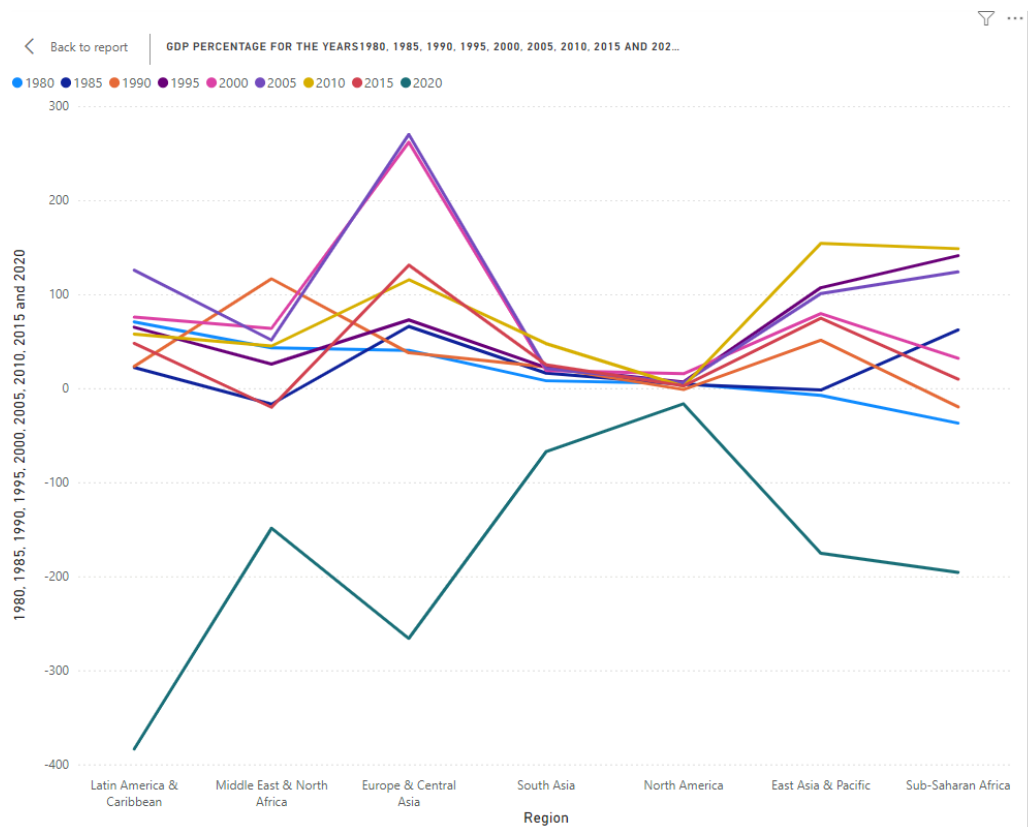


Figure 1

Region	1980	1985	1990	1995	2000	2005	2010	2015	2020
Latin America & Caribbean	70.51	22.13	23.21	64.87	75.65	125.65	57.69	47.88	-383.66
Middle East & North Africa	57.91	46.27	65.04	84.20	143.55	190.65	205.45	77.12	-201.64
Europe & Central Asia	43.01	-16.88	116.43	25.63	63.63	51.20	44.90	-20.22	-148.87
South Asia	40.16	65.82	37.65	72.65	261.68	269.92	115.31	130.93	-266.03
North America	7.95	16.02	22.54	21.98	18.91	20.95	47.42	24.96	-67.38
East Asia & Pacific	5.02	4.21	-1.39	6.76	15.48	5.79	2.07	2.49	-16.60
Sub-Saharan Africa	-7.56	-1.85	51.16	106.94	79.46	100.73	153.97	74.51	-175.62
Sub-Saharan Africa	-37.10	62.12	-19.92	141.00	31.83	123.70	148.41	9.61	-195.77

Figure 2

Figure 3 shows the GDP percentage change for all regions for every 10 years from 1990 to 2020, this graph is similar to Figure 1 but shows the results of the GDP percentage as a bar graph for each region.

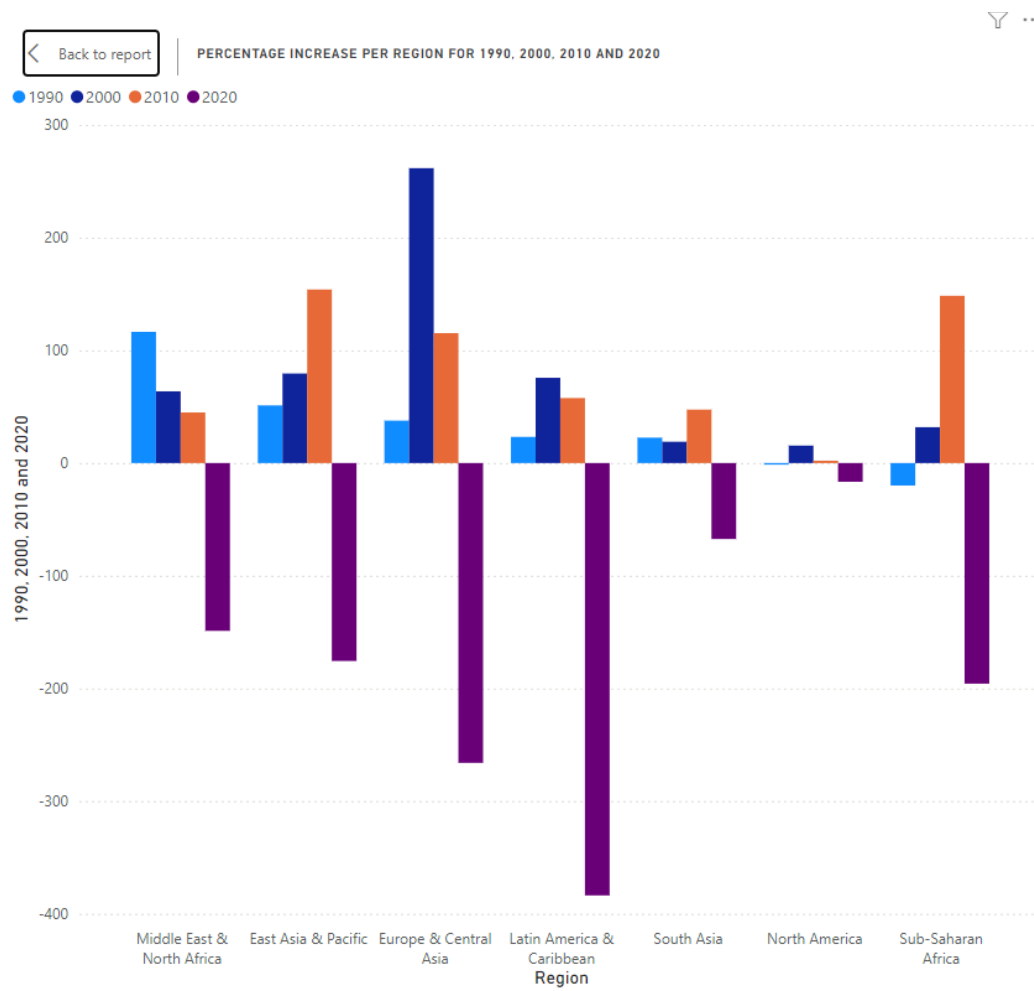


Figure 3

- Q1: What are the key differences in GDP across various regions between 2019 and 2022?

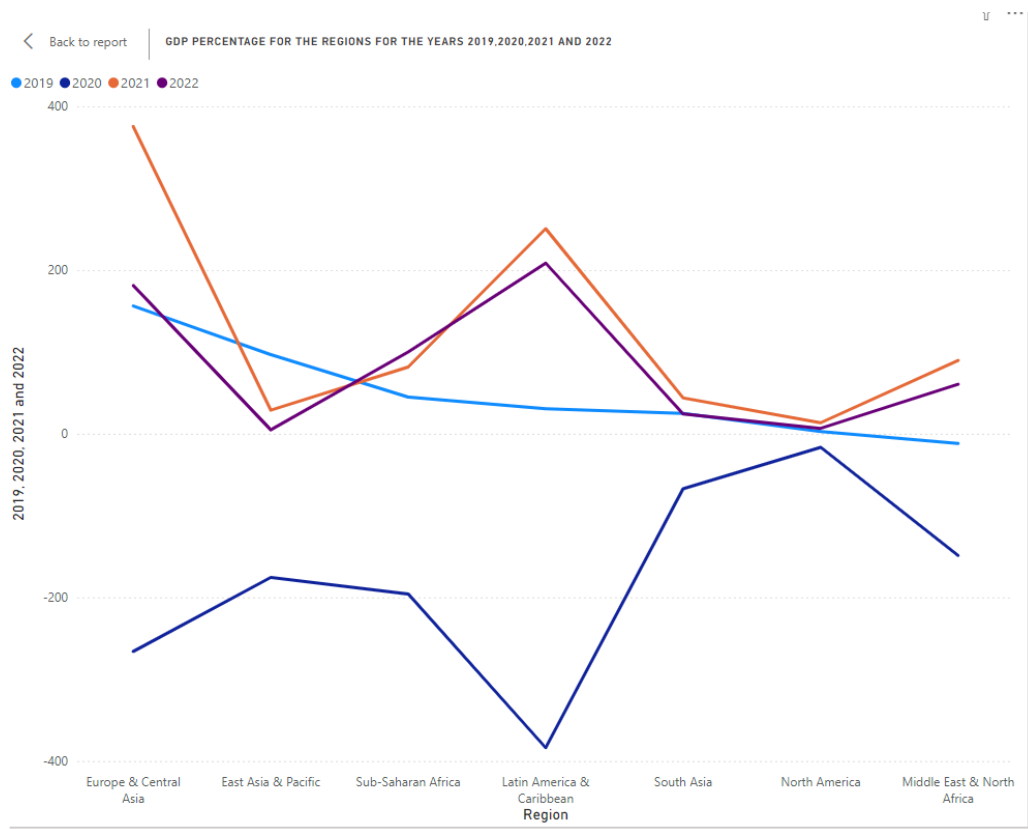


Figure 4

Figure 5 shows the values of each region in Figure 4 as a table.

Region	2019	2020	2021	2022
Europe & Central Asia	156.01	-266.03	375.50	181.22
East Asia & Pacific	96.65	-175.62	28.68	4.72
Sub-Saharan Africa	44.73	-195.77	81.48	99.85
Latin America & Caribbean	30.39	-383.66	250.58	208.52
South Asia	24.90	-67.38	43.63	24.14
North America	2.58	-16.60	13.41	6.51
Middle East & North Africa	-11.99	-148.87	89.45	60.46

Figure 5

Figure 4 shows the GDP percentage change for each region (the blank regions were filtered out of the graph). Most regions have a positive GDP percentage increase for 2019, apart from the Middle East and North Africa which has a negative GDP of 11.99%. However, in 2020 all regions had a significant drop in GDP, with the largest drop of -383.66 % being in the region of Latin America and the Caribbean. Then in 2021 and 2022, all regions had a significant increase in GDP percentage with all regions having a positive GDP percentage increase for both years. The significant drop and increase for all regions were due to the global pandemic which started at the end of 2019 and early 2020. All GDPs decreased in 2020, as temporary closures of businesses, factories, and services (which include tourism, hospitality, and retail) were all closed, as many countries implemented lockdowns to reduce the spread of the coronavirus. The GDP percentage started to increase in 2021 as all industries started opening and country borders were opened up, which allowed for travel and tourism to take place, which led to an increase in GDP.

- Q2: What factors contributed to the significant decline in GDP in all regions between 2005 and 2010?

Figure 6 shows the general trend of a decrease in GDP for most regions in 2009, except for Sub-Saharan Africa and South Asia. The drop in GDP percentage in 2009, was due to the global financial crisis, which occurred from 2007 to 2009. This financial crisis triggered the collapse of major financial institutions and led to widespread economic recessions. The result of the crisis caused consumer spending and

investment to drop significantly, and a rise in unemployment. This caused a decrease in GDP percentage for the regions of Europe & Central Asia, East Asia & Pacific, Latin America & Caribbean, Middle East & North Africa and North America.

Sub-Saharan Africa and South Asia had a positive GDP percentage for 2009, this was due to these regions having limited ties to global financial markets, which meant the financial crisis didn't affect those areas. For Sub-Saharan Africa, there was an increase in GDP, as a main part of their economy comes from agriculture (from crops such as cocoa, coffee and tea) during the crisis these items were still being exported which led to an increase in GDP. Another factor which increased the GDP percentage of Sub-Saharan Africa was its natural resources. This includes oil, gas, gold, diamonds and other minerals, which increased their export revenues and foreign investments.

In South Asia, particularly in India, industries like information technology and services continued to thrive during the financial crisis, helping to increase the GDP, rather than follow the trend of the rest of the world. The agricultural sector has also shown resilience, as this sector was not affected, as the demand for food and livestock did not decrease, leading to a positive GDP growth in 2009, which can be seen in Figure 6.



Figure 6

Figure 7 shows the graphs data in Figure 6 for all regions.

Region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Sum of 2010
Europe & Central Asia	261.68	199.82	181.95	214.72	286.44	269.92	332.24	330.78	145.47	-233.94	115.31
East Asia & Pacific	79.46	60.37	79.81	92.54	132.33	100.73	90.27	122.56	115.87	-24.42	153.97
Latin America & Caribbean	75.65	9.43	6.82	75.35	139.08	125.65	159.94	147.58	89.20	-107.54	57.69
Middle East & North Africa	63.63	-12.09	-14.67	41.72	136.79	51.20	36.09	30.92	30.85	-14.15	44.90
Sub-Saharan Africa	31.83	112.44	78.87	28.63	158.55	123.70	134.64	123.39	81.68	22.33	148.41
South Asia	18.91	7.20	19.03	37.80	27.95	20.95	54.22	55.87	27.62	29.79	47.42
North America	15.48	6.72	0.54	5.54	6.68	5.79	8.34	4.89	-3.35	-13.63	2.07

Figure 7

Figure 8 shows the countries in the region of Europe and Central Asia, and their GDP percentage change from 2005 to 2010. I chose to filter through this region as it had the largest drop in GDP from 145.47% in 2008 to -233.94% in 2009. The graph shows nearly all the countries

had a negative GDP percentage in 2009, these countries were all affected by the financial crisis in 2007-2008 which led to widespread repercussions, leading to significant economic declines across Europe and Central Asia.

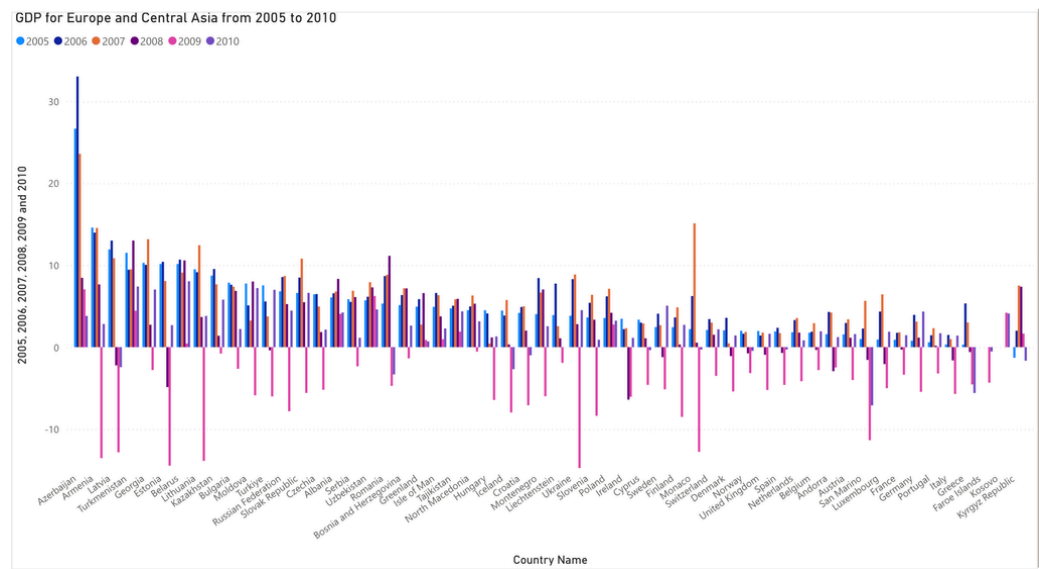


Figure 8

- Q3: What are the main drivers behind the substantial decrease in GDP for the Middle East & North Africa region from 1990 to 2020?

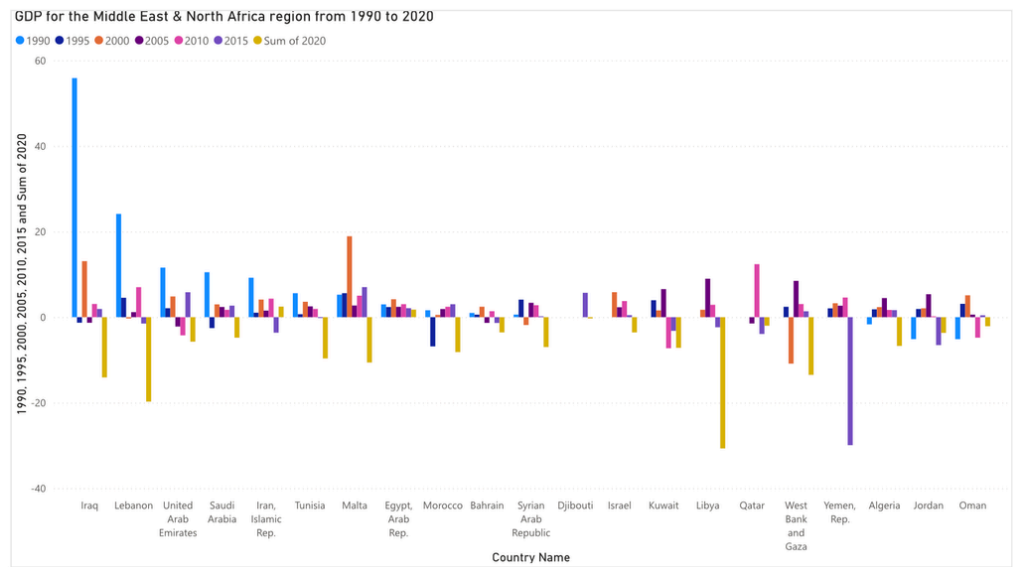


Figure 9

Country Name	1990	1995	2000	2005	2010	2015	2020
Iraq	55.89	-1.30	13.09	-1.30	3.08	1.92	-14.09
Lebanon	24.13	4.53	-0.31	1.18	7.01	-1.49	-19.75
United Arab Emirates	11.58	2.09	4.84	-2.19	-4.26	5.82	-5.73
Saudi Arabia	10.50	-2.55	2.99	2.39	1.72	2.69	-4.79
Iran, Islamic Rep.	9.22	1.04	4.12	1.54	4.32	-3.63	2.47
Tunisia	5.60	0.69	3.60	2.53	1.93	-0.16	-9.66
Malta	5.26	5.60	18.91	2.73	5.03	7.02	-10.61
Egypt, Arab Rep.	2.99	2.37	4.19	2.42	3.04	2.10	1.77
Morocco	1.62	-6.84	0.53	1.91	2.43	3.02	-8.17
Bahrain	0.99	0.59	2.44	-1.34	1.39	-1.35	-3.57
Syrian Arab Republic	0.61	4.10	-1.83	3.36	2.79	0.15	-6.99
Djibouti						5.69	-0.30
Israel			5.84	2.31	3.76	0.48	-3.57
Kuwait		3.96	1.58	6.56	-7.27	-3.19	-7.17
Libya			1.73	8.99	2.90	-2.36	-30.68
Qatar				-1.47	12.39	-3.93	-2.01
West Bank and Gaza		2.43	-10.86	8.48	3.07	1.37	-13.50
Yemen, Rep.		2.06	3.25	2.68	4.59	-29.92	
Algeria	-1.68	1.83	2.35	4.47	1.69	1.65	-6.73
Jordan	-5.14	1.91	2.07	5.36	0.09	-6.53	-3.68
Oman	-5.15	3.11	5.11	0.60	-4.79	0.44	-2.12

Figure 10

Figure 9 shows all the countries' GDP percentage change from 1990 to 2020, for the region of Middle East & North Africa. Most countries had a positive GDP growth in 1990 (apart from Algeria, Jordan and Oman), then fell drastically in 1995.

Figure 9 shows that Yemen and Jordan were the only countries in the Middle East & North Africa to have negative growth for GDP in 2015, with Yemen going from a GDP percentage increase of 4.59% in 2010 to a GDP percentage decrease of -29.92% in 2015. Jordan had a less drastic fall in GDP with a 0.09% in 2010 to a -6.53% fall in 2015.

Yemen's decrease in GDP was due to a civil war in 2014, which escalated in 2015. The conflict has led to widespread destruction of infrastructure, displacement of people, and disruption of economic activities. This was the main reason for the decrease in GDP percentage for 2015.

Jordan's decrease in 2015 was due to high unemployment rates and limited resources, the country also had a high migration of refugees, which increased pressure on the country. This led to a decrease in GDP.

Except Malta, which had an increasing GDP growth from 1990 until 2020, the country was only affected by the pandemic. Malta's GDP increased by an average of 7.43%, this is because Malta is a popular tourist destination, which attracts millions of visitors each year. Tourism contributes significantly to the economy, boosting various sectors like hospitality, retail, and transportation.

After analysing the regions, I analysed all the countries' data, from 1985 to 2022. From the graph created in Power BI; I chose to analyse countries which had the largest difference in GDP percentage (the countries which had the highest and lowest peaks). From the line graph created in Power BI, the countries I analysed further were: Rwanda, Iraq and Equatorial Guinea.

- Q4: What factors contributed to the dramatic decline in Rwanda's GDP in 1994, followed by a significant recovery and increase in GDP in 1995?

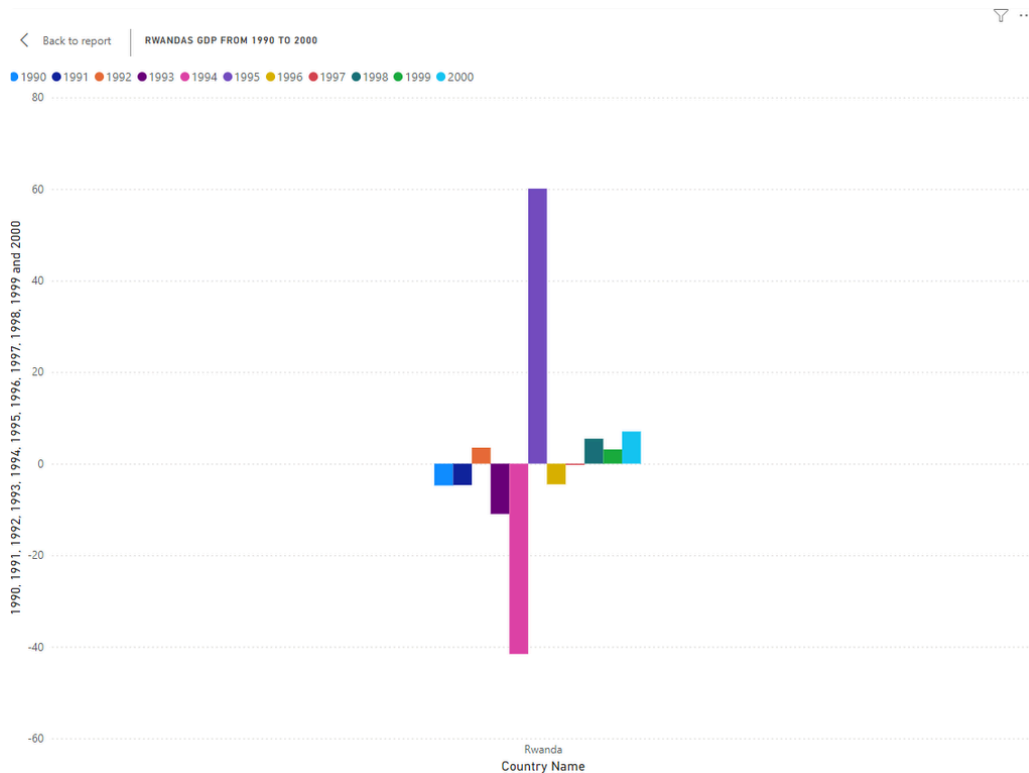


Figure 11

Country Name	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Rwanda	-4.77	-4.67	3.50	-10.99	-41.59	60.09	-4.52	-0.28	5.45	3.11	7.03

Figure 12

Figures 11 and 12 show the GDP percentage change for Rwanda from 1990 to 2000. Rwanda's GDP was slowly decreasing from -4.77% in 1990 to -10.99% in 1993. However, in 1994, Rwanda's GDP dropped significantly to -41.59%, then in 1995 made a recovery and increased drastically to 60.09%.

The negative GDP percentage in 1994 was due to the devastating impacts of the Rwandan Genocide, which resulted in widespread violence, loss of life, and the dislocation of millions of people. This disrupted the economy and destroyed infrastructure. The main part of Rwanda's economy was due to agriculture, which was destroyed ruining the economy of Rwanda.

In 1995, the genocide stopped and Rwanda began to increase in GDP, the increase was due to rebuilding the country and international aid. This helped Rwanda rebuild and revive agricultural production, which quickly helped to increase GDP.

- Q5: What factors contributed to the dramatic decline in Equatorial Guinea's GDP percentage from 2009 to 2021? What caused an increase in GDP from Equatorial Guinea in 2011, 2012 and 2022?



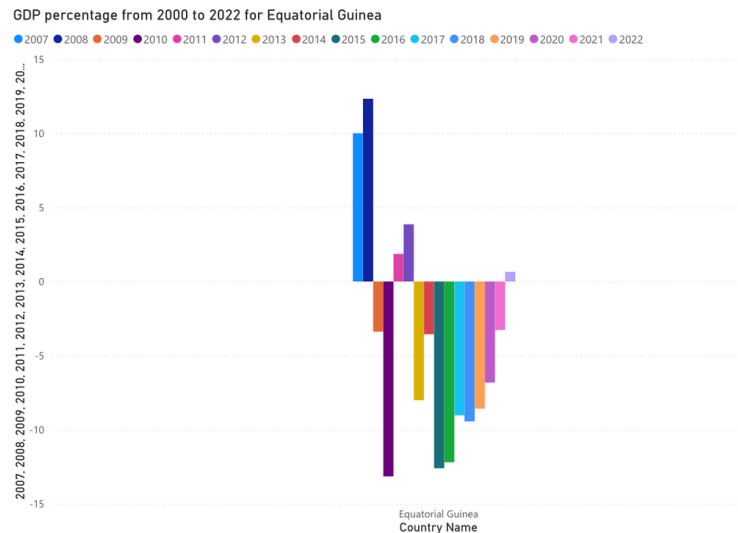


Figure 13

Country Name	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Equatorial Guinea	10.01	12.33	-3.39	-13.15	1.86	3.86	-8.01	-3.56	-12.60	-12.20	-9.03	-9.44	-8.58	-6.82	-3.27	0.66

Figure 14

Equatorial Guinea's GDP percentage fluctuated from 2007 to 2013, from an increase from 2007 to 2008 to 12.33%, then fell to a decrease of -13.15% in 2010. Then the GDP recovered in 2012 to 3.86% in 2012. After 2012, Equatorial Guinea's GDP percentage continued to decrease to 2021, with a peak negative GDP of -12.60% in 2016.

The changes in GDP for Equatorial Guinea are primarily tied to its heavy reliance on oil, which accounts for 78% of the country's gross domestic product (GDP). When global oil prices dropped, it had a significant impact on national revenue, leading to cuts in public spending and investment. This led to negative GDP percentages over the years of 2008, 2009, 2013 to 2021.

However, in 2011, 2012, and 2022, there was a temporary rebound in oil prices, which helped boost government revenues. Overall, the ups and downs in oil prices and production have been crucial in shaping Equatorial Guinea's GDP performance during this time.

After analysing by region and country, the data had income groups. I analysed countries with a high income compared to countries with a low-income countries' GDP percentage change from 2000 to 2020, in 5-year increments. The graphs have been included below, Figure 15 shows the low-income countries and Figure 16 shows the high-income countries.

- Q6: What are the key differences in GDP percentage change between high-income and low-income countries?

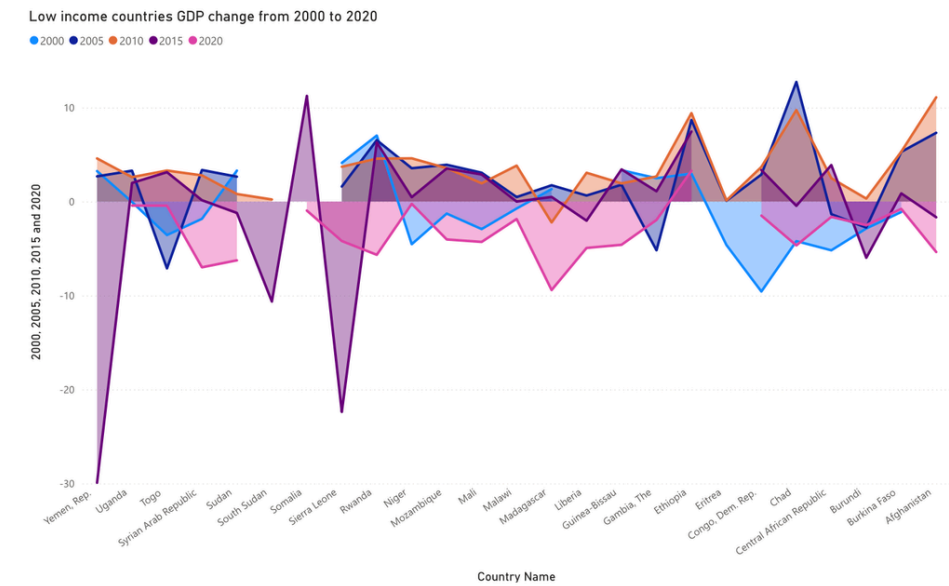


Figure 15

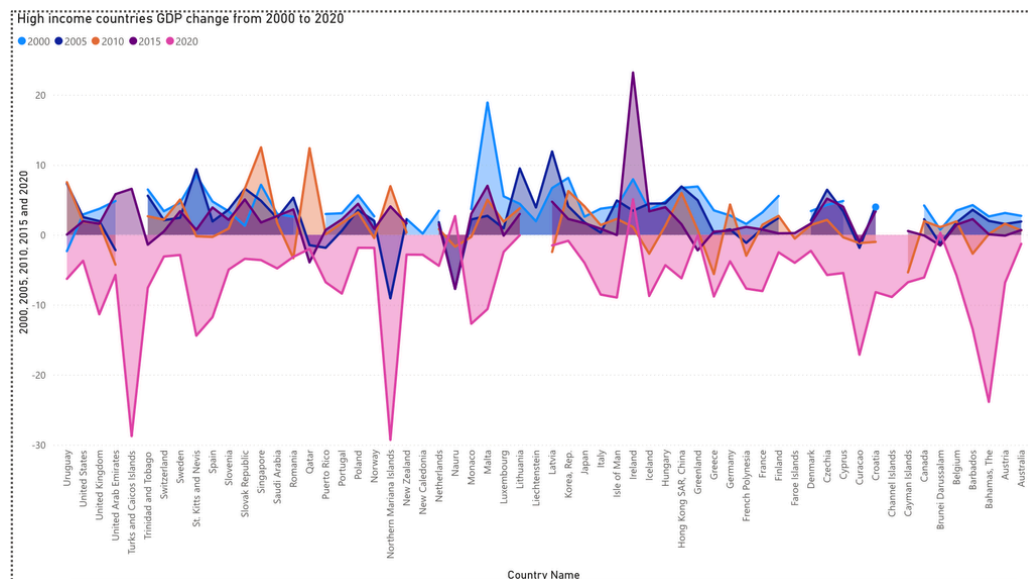


Figure 16

Figures 15 and 16 compare GDP changes between low-income and high-income countries from 2000 to 2020. One key difference is that there are significantly more high-income countries represented in Figure 16 than low-income countries in Figure 15.

In Figure 15, which focuses on low-income countries, the fluctuations in GDP are much more dramatic. Countries like Yemen, South Sudan, and the Syrian Arab Republic experienced sharp drops in GDP in 2015. These changes are especially noticeable in countries affected by conflict or instability. Most of the significant shifts in GDP for low-income nations occurred between 2000 and 2015.

Figure 16, which shows high-income countries, tells a different story. From 2000 to 2015, most of these countries saw a steady increase in GDP, although there were notable dips in 2010 and 2020, largely due to the global financial crisis and the Covid-19 pandemic.

Among low-income countries, Yemen and South Sudan stand out for their extremely negative GDP changes, while countries like Rwanda and Niger showed more stable or even positive growth trends. In high-income countries, Greece stands out as a major outlier, experiencing a steep decline in GDP after 2010 due to its debt crisis.

Looking at both Figures 15 and 16 for 2020, the low-income countries were less affected by the pandemic, with the biggest drop being Madagascar with -9.41% (mainly due to no tourism). However, high-income countries seemed to be affected more by Covid; the Turks and

Caicos Islands had a negative GDP decrease of -28.76%, the Northern Mariana Islands had a negative GDP decrease of -29.30% and The Bahamas had a negative GDP decrease of -23.87%. These regions were severely impacted due to their heavy reliance on tourism as a major source of income. (International travel restrictions, lockdowns, and concerns about the virus caused a significant drop in tourism during the pandemic.)

### **Summary.**

This report examined global GDP percentage performance from 1960 to 2022, focusing on various countries and regions from 1980-2022, as many countries were missing data entries. It highlighted the impact of significant global events, including the financial crisis of 2008 and the COVID-19 pandemic, on GDP growth.

The data provided was GDP percentages, this did not take into account the raw GDP data for each country. For example, looking at Germany's GDP in 2022, this was 3,867.05 billion euros but only 1.81%. However Guyana's growth of 56.99% in 2022 was 14.22 million euros, this means to get a more accurate comparison between countries and regions, the GDP and the GDP percentage both need to be included.