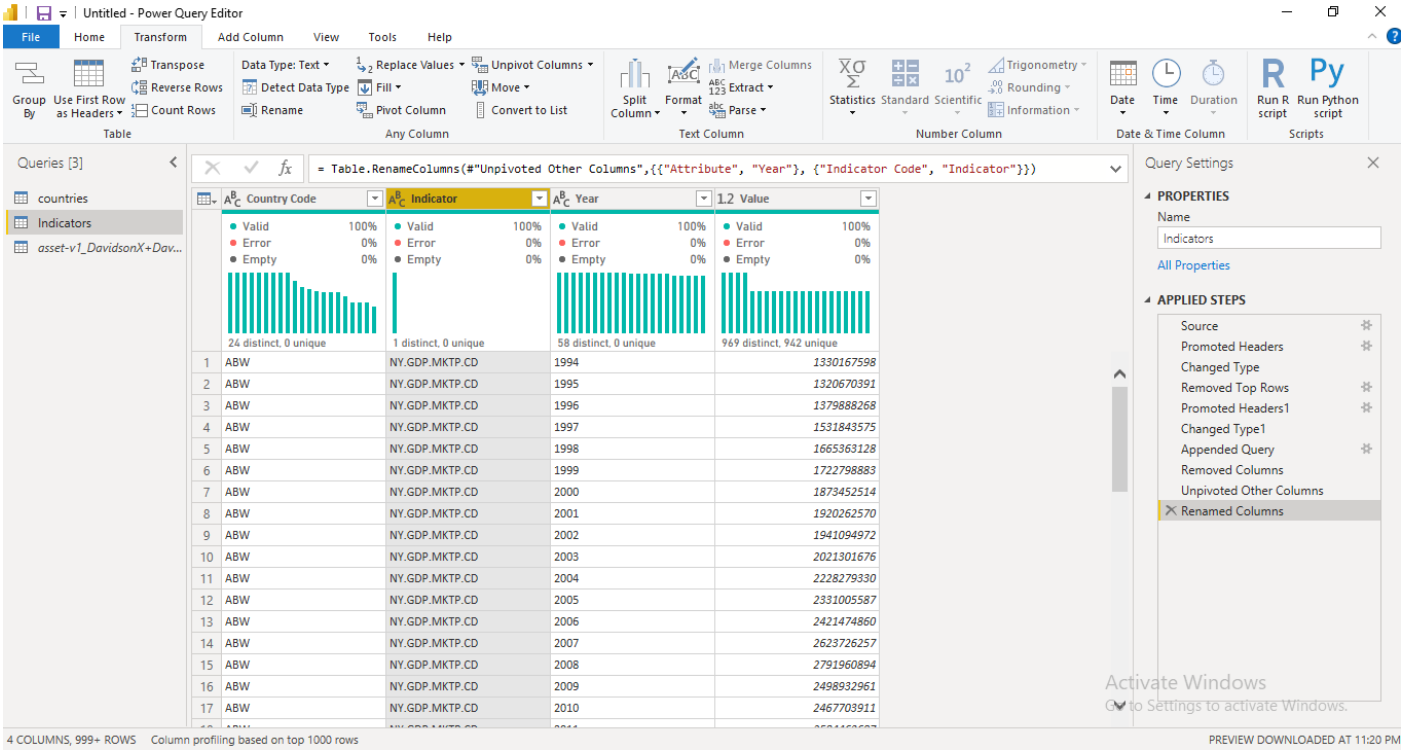
GLOBAL ECONOMIC INDICATORS

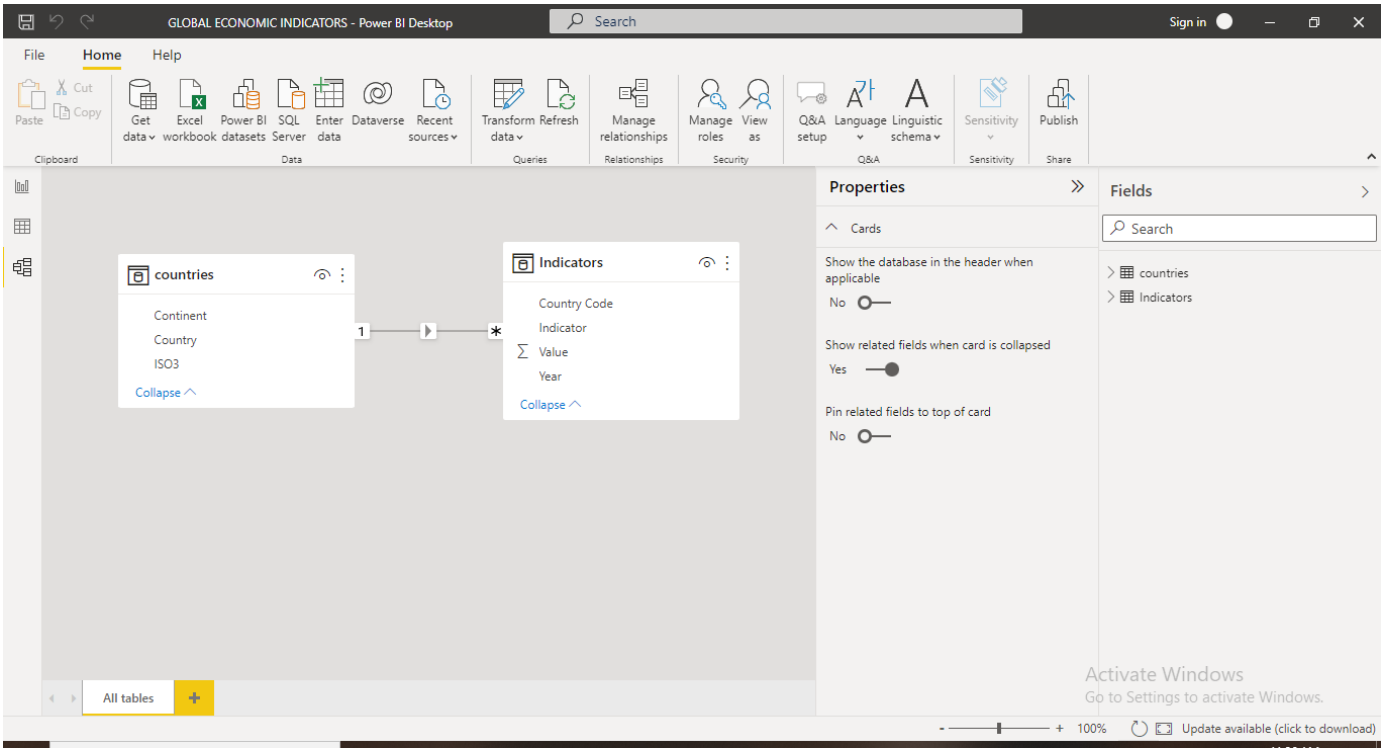
Pivoting and Unpivoting

Here, we did another transformation to our dataset to make it ready for visualization. Our dataset comes from same source i.e., World Bank and has the same layout but they are in separate files. So we will combine them using Append Queries Transformation. We also removed columns we don't need. Unfortunately, our yearly data is spread out in sepratae columns. So to make our data clean and more flexible, we employed unpivot operation that takes columns and transforms them into rows.



Granularity & Relationships

Here, we explored how to keep the large data models as they are – uncombined and instead created relationships between two tables in Power BI Desktop. For this, we first understand the concept of granularity. It is a vital concept in data modeling that helps us in understanding how different tables relates to each other. The below image demonstrates one of the most common types of cardinalities – one-to-many relationship.



Third Party Visuals

We have multiple tables so we created some meausres that can help us visualize our data. For Population:

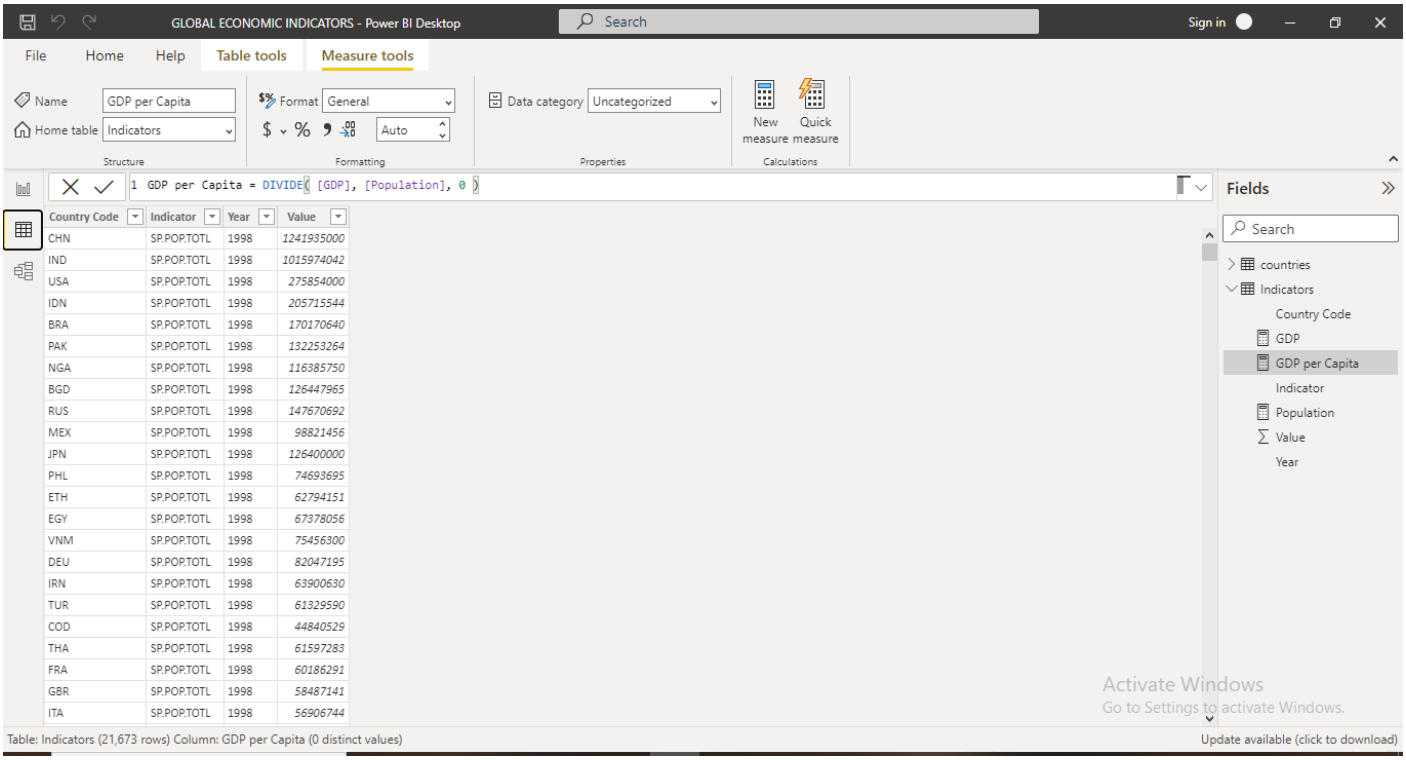
```
Population = CALCULATE(SUM(Indicators[Value]), Indicators[Indicator] = "SP.POP.TOTL")
```

Second measure we created for GDP (Gross Domestic Product) as follows:

```
GDP = CALCULATE(SUM(Indicators[Value]), Indicators[Indicator] = "NY.GDP.MKTP.CD")
```

Third measure is GDP per Capita or GDP per Person. For this, we will take country's total economic output or GDP measure and dividing it by number of people in the country or Population measure. That's how we calculate economic output for each citizen.

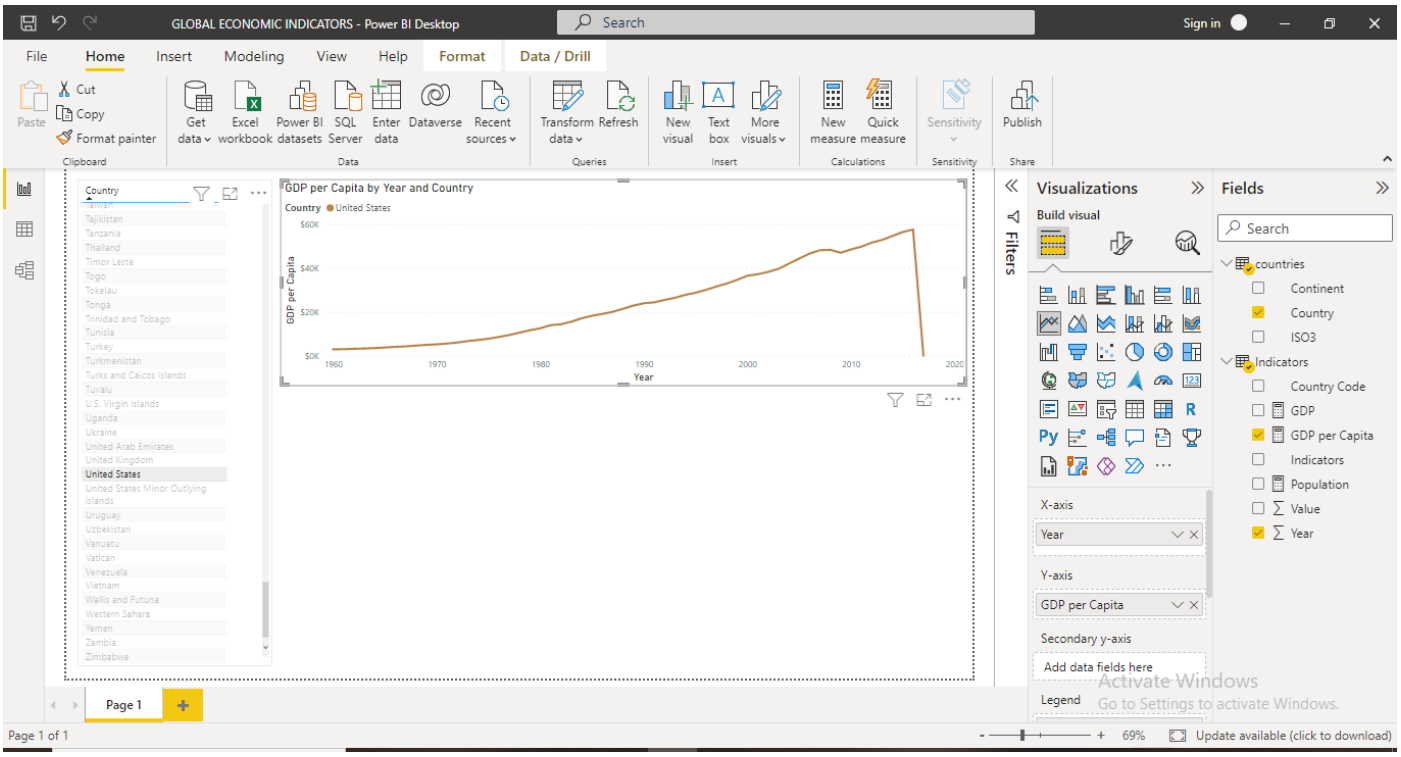
```
GDP per Capita = DIVIDE( [GDP], [Population], 0 )
```



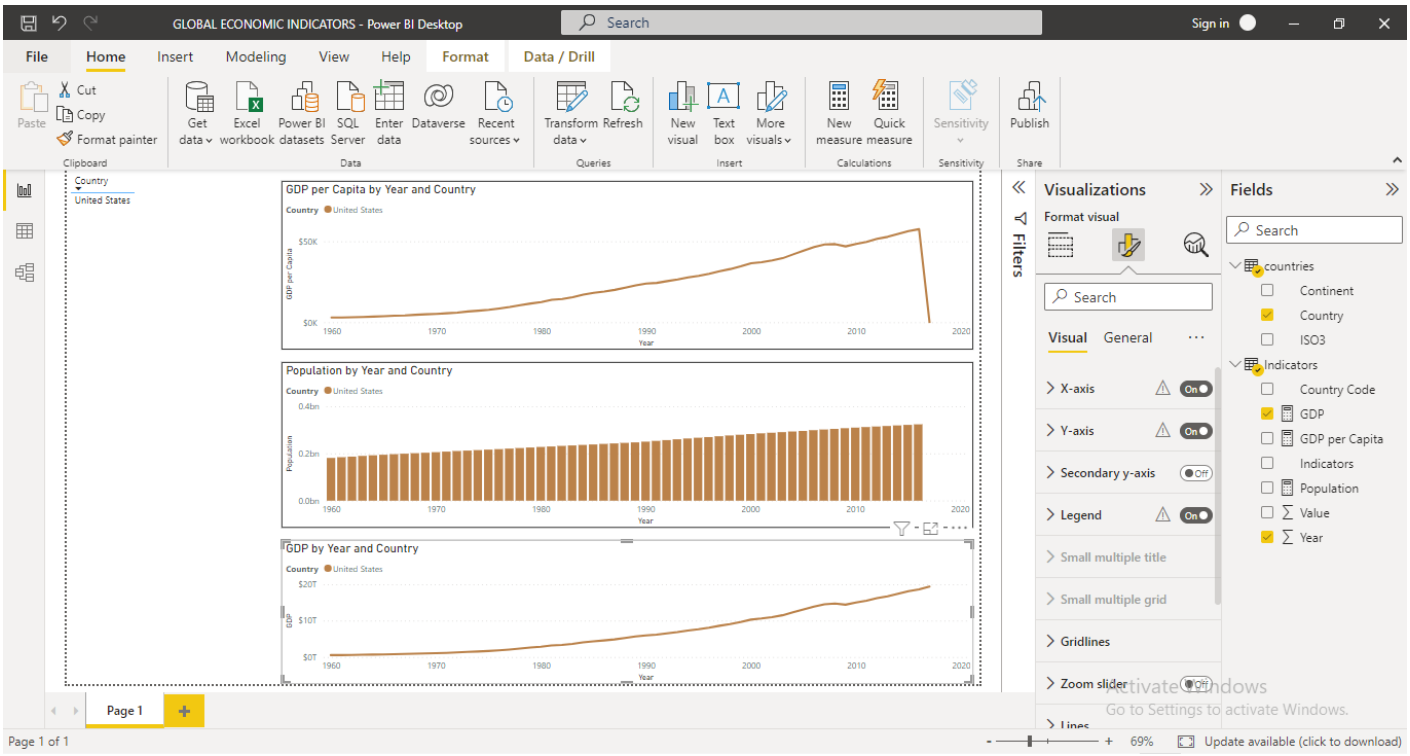
Visualizing Global Economic Indicators

Our main goal here in this exercise is to identify which country is most prosperous based on GDP per Capita.

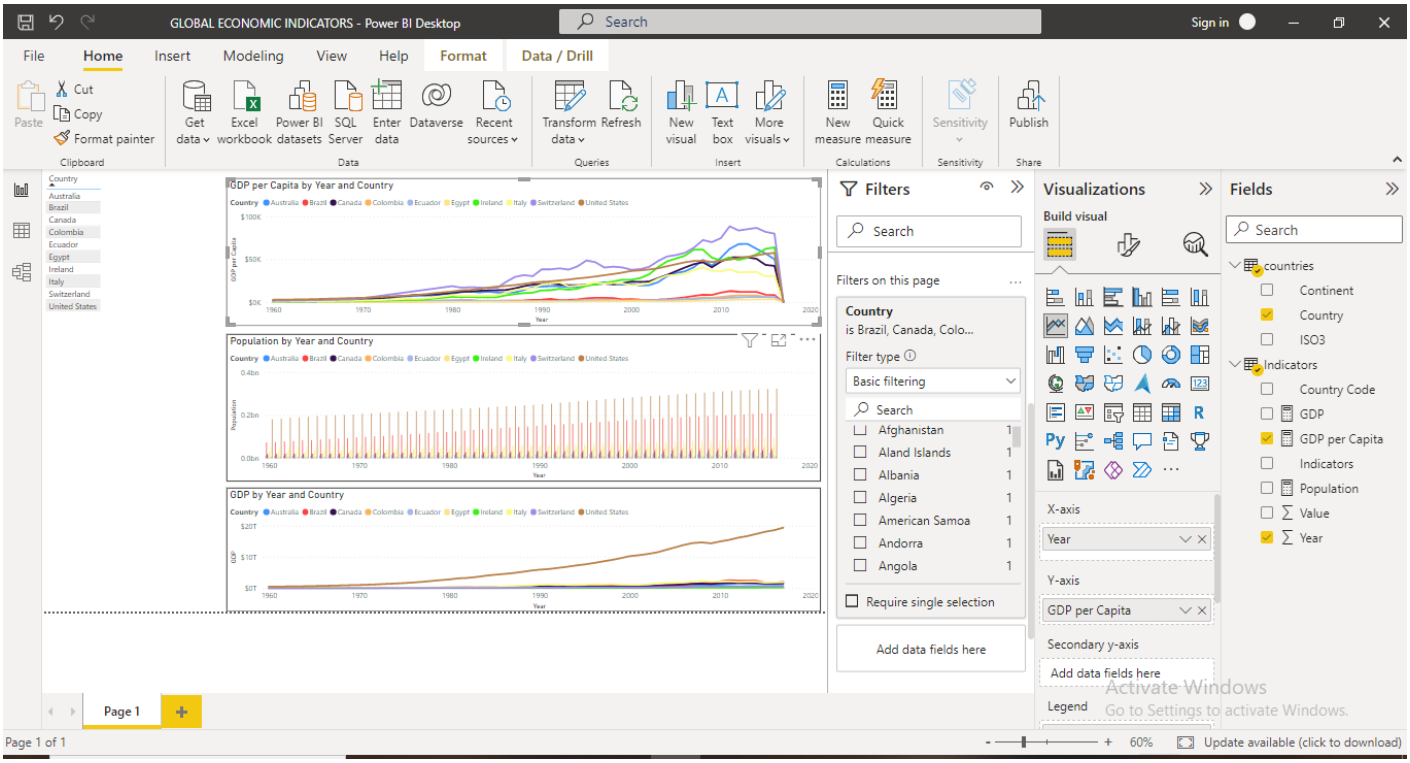
For this, we first created a table containing data of all countries. That way, we can select any country we wish. Next, we created a line chart displaying GDP per Capita by Year and Country.



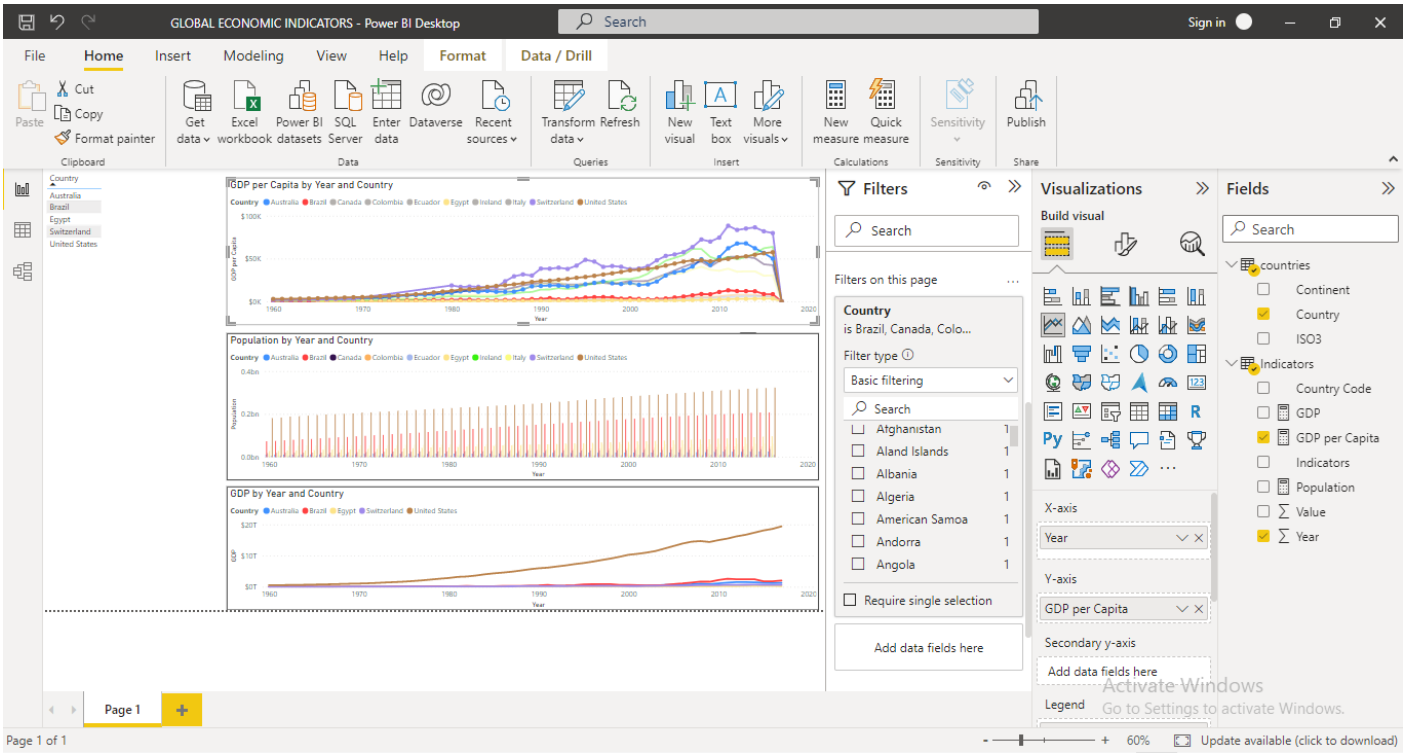
Below the line chart, we add a clustured column chart to display Population by Country and below it, we added another line chart to show GDP by Year and Country. Notice we have filtered United States in filters pane on all visuals in our page.



Next, since we want comparison between different countries, so I chosed Australia, Brazil, Canada, Colombia, Ecuador, Egypt, Ireland, Italy, Switzerland, and United States in filters on this page, filters pane.



If I want to do a side-by-side comparison, I can select a few countries of my choice and look more closely at my data, as shown below:



We can see from our population chart that US dominates our GDP chart, whereas, Switzerland dominates GDP per Capita.

DAX Focus: Calculating Growth Rates

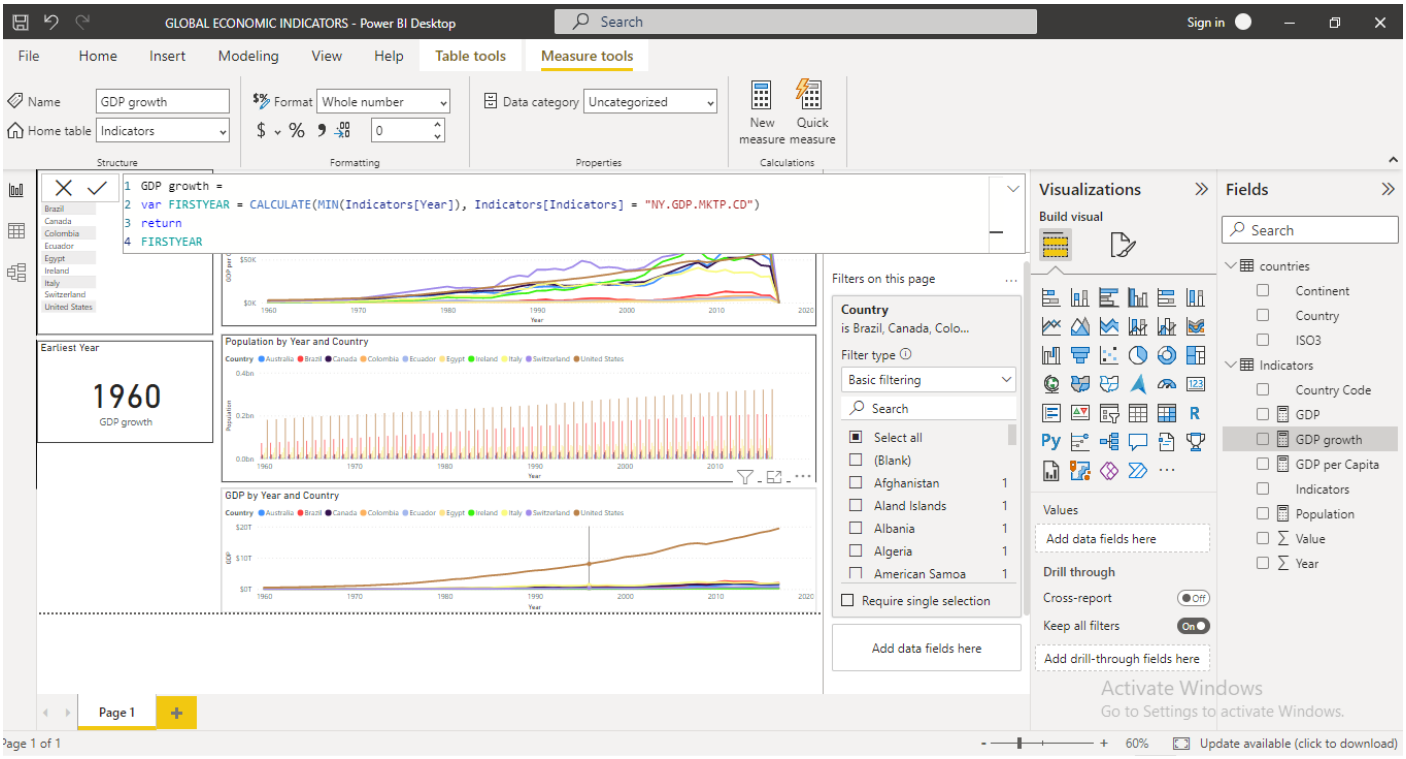
We are creating our first growth measure – GDP growth. We can calculate our growth rate formula i.e., (latest year GDP – Earliest year GDP)/ Earliest year GDP. To write this in DAX, we first employed our CALCULATE function and determined the latest and earliest years, then find out tehir GDp, and finally, calculate the difference.

In our DAX formula, we will create a variable. Variables are like mini calculations that run inside our larger formula. Simply put, we take a segment of DAX and store the result as a variable, then use this variable later in the calculations.

We created a variable (FIRSTYEAR) to get our first year. For this, we used MIN function. Our formula is:

```
GDP growth =
var FIRSTYEAR = CALCULATE(MIN(Indicators[Year]), Indicators[Indicators] = "NY.GDP.MKTP.CD")
return
FIRSTYEAR
```

We added a card visual to display the results of our new measure.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GDP growth
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New measure
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Calculations
1 GDP growth =
2 var FIRSTYEAR = CALCULATE(MIN(Indicators[Year]), Indicators[Indicators] = "NY.GDP.MKTP.CD")
3 return
4 FIRSTYEAR
Earliest Year
1960
GDP growth
Population by Year and Country
GDP by Year and Country
Filters on this page
Country
is Brazil, Canada, Colo...
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Add data fields here
Visualizations
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Add drill-through fields here
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