HOW TO CREATE DATA MAP WITH STATA

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In this assignment, we want to create a data visualization map (Figure 1) which shows the number of confirmed cases of COVID-19 for each country in the world on november 18, 2020 and an animated map to illustrate the evolution of the epidemic overtime. This static map is created using two commands which are *spshape2dta* and *spmap* and the animated map is generated using the *ffmpeg* free package.

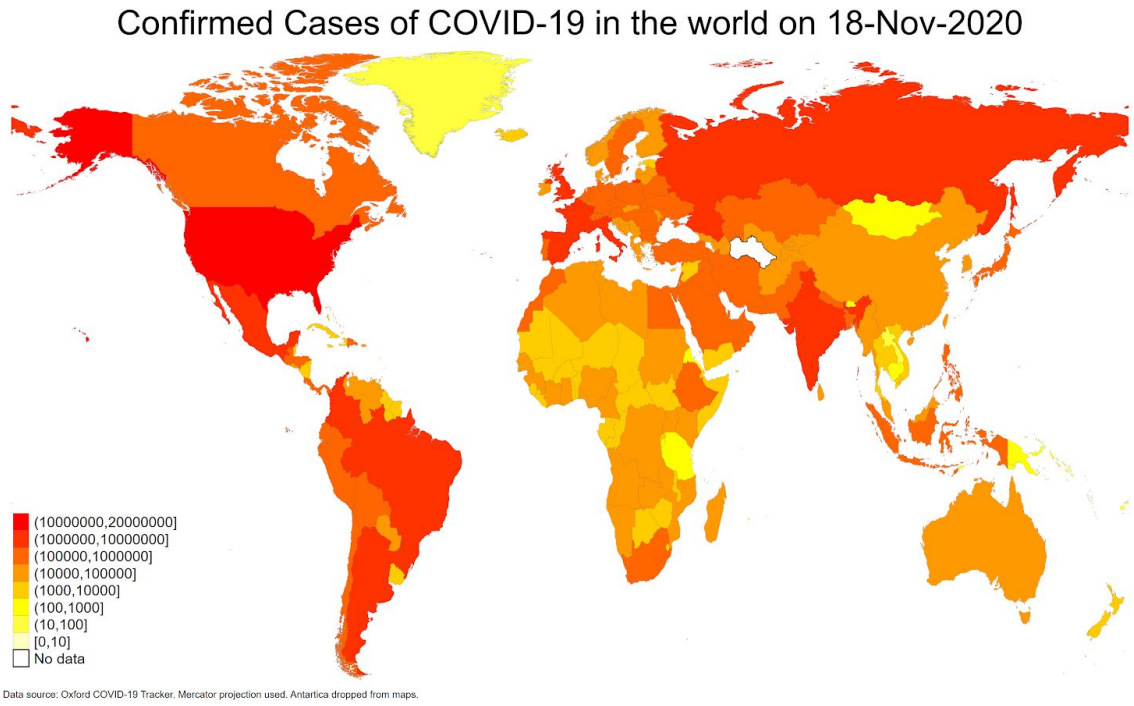

Figure 1: Confirmed Cases of Covid 19 in the world on 18-Nov-2020

Using *spshape2dta* in Stata

Spshape2dta command is a command which is used to translate shapefile (.shp file) to Stata format (.dta). It is integrated in Stata 15 and later versions as part of its support for spatial analysis. Here the syntax is simple:

- `spshape2dta name [, options]`

with `name` is the name of the shapefile.

Using *spmap* in Stata

For *spmap*, because this package is not integrated in Stata. We need to first install it:

- `ssc install spmap`

Then we can run the command using this syntax:

- ```
  spmap [attribute] [if] [in] using basemap [,
          basemap_options
          polygon(polygon_suboptions)
          line(line_suboptions)
          point(point_suboptions)
          diagram(diagram_suboptions)
          arrow(arrow_suboptions)
          label(label_suboptions)
          scalebar(scalebar_suboptions)
          graph_options]
  ```

with `[attribute]` is the variable which consists of the information which we want to visualize (in our case is COVI-19 confirmedcases) and `basemap` is the geographic data which is translated by *spshape2dta* command.

Using *ffmpeg* package in Stata

Ffmpeg package can download using this link: https://www.gyan.dev/ffmpeg/builds/

To execute *ffmpeg* package we use the *shell* command with this syntax:

```
shell "C:\ffmpeg-4.3.1-2020-11-19-full_build\bin\ffmpeg.exe" -framerate 1/1 -i
map_%03d.png -c:v libx264 -r 30 -pix_fmt yuv420p covid19_confirmedcases.mp4
```

with `map_%03d.png` indicates the collection of maps which we want to generate the video from.
```