

DATATHON - VI

COUNTRY WISE 2008 RECESSION ANALYSIS

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Abstract—In this report we present the results and the methodology used to visualise the GDP and the GDP from the field of construction for various countries

We attempt to present the visualizations using Choropleth maps.

I. INTRODUCTION

The document attempts to visualize the data for various countries based on their GDP and GDP from construction (GDP-construction) and try to find out a generalized trend from the countries with higher exchange rates.

In a report by Daniel Bukszpan for CNBC [1], dates for Jun 1, 2012, claims that the construction industry was the worst affected industries by the recession of 2008. The article [1] produces numerical data for the percentage sales in the year 2012 compared to the year 2009 for the top 10 worst affected industries. The data for few of the industries directly or indirectly related to the construction industry mentioned in [1] along with the percentage change in sales and position in top 10 are:

- (pos^1) Building Material and Supplies Dealers : 3.28%
- (pos^3) Lumber and Other Construction Materials Wholesalers : 3.07%
- (pos^5) Cement and Concrete Product Manufacturing : 1.67%
- (pos^7) Furniture Stores : 0.57%

The document is divided into various sections. Initially, in the 'Data' section we brief about the data that was available and the subset of data used for creation of this report. Under 'Methodology' we cover the preprocessing and filtering we applied on the data to make it useful for our purpose. Then we move to the 'Visualisations' in which we present the visual representation of the data along with the inferences drawn from them. Finally we share the 'References' we used for the task.

II. DATA

The UNECE's Country Overview data was used for this report. The data is publically available. The data basically consists data of 52 countries for a range of 17 years ranging from [2000-2016]. The data consists of multiple attributes. Grouping them together and naming a few would be:

- The population of the nations divided according to the gender and in three age groups (0-14, 15-64, 64+).
- Life expectancy of each of the groups of population.
- Computer using population.
- Women workers in various files like clerks, plant and machine operators, government etc.
- The GDP of the whole country and various units.
- The GDP from various sections of the society.
- And a few miscellaneous attributes like road accidents and railway line length etc.

For the current report we used the data related to the total gross GDP of each country and the GDP-construction.

We focused on the data for a period of 6 years, from 2005 and 2012. The purpose of this choice was the fact of global recession in 2008. We focus on this period in two sets. Before the recession and after the recession.

III. METHODOLOGY

As already mentioned in the previous section, we used the data for a period of 6 years [2005,2012]. We have divided this period into 3 sections : the pre-recession period, the recession period and the post-recession period.

We plotted the visualizations for all the periods separately. Since the recession started in mid 2007 we focused on the year of 2006 for the pre-recession period.

We took the data for the year of 2008 for the recession period. And as [1] mentions the recession started to stabilise close to 2012 we focused on the year of 2012 for post recession period.

IV. VISUALIZATIONS

We visualize the available data in the form of a Choropleth map. The data for the periods mentioned is mainly for the countries of Europe and few Asian countries so we focus on that.

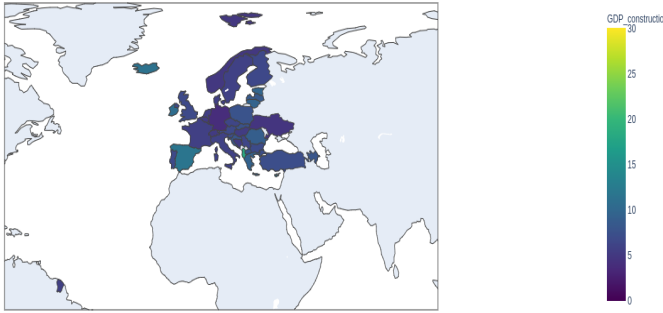


Fig. 1: Pre Recession Period : 2006

The GDP-Construction value has been color mapped with the color bar. If we hover over the particular country we observe the Total GDP of the country along with the actual values of the percentage of the GDP from the field of construction.

In fig 1. We observe that a few states quite heavily depend on the GDP from construction compared to other countries. Albania seems to have a whopping high GDP-construction percentage with 18%. Spain seems to have the second highest GDP-construction percentage followed by Iceland with 11.7% and 11.23% GDP-construction percentage. Ireland and Estonia follow them in this list. Some countries have a very low percentage when it comes GDP-construction but do have a high value for gross GDP. One of these countries of Germany with GDP-construction as low as 3.8%.

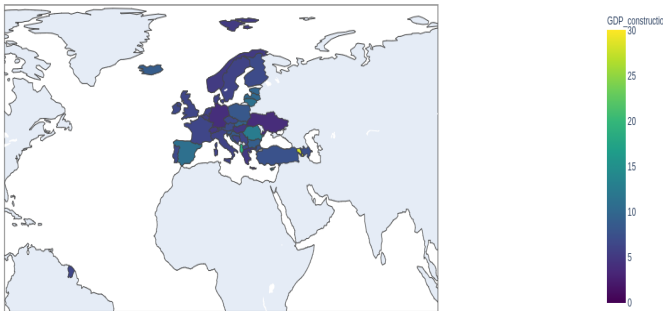


Fig. 2: Recession Period : 2008

Fig 2 shows the Recession period of the time span. We do observe a varying affect on the construction industry due to the recession. The first major affect we observe is for Ireland with in 2006 stood at 11.23 GDP-construction percentage dropped down to 6.5. Similar case was observed with Iceland for which the GDP-construction percentage dropped form 11.23% to 8.8%. Spain on the other hand did seem to handle

the recession well, at least in the field of construction for which the GDP-construction percentage dropped only by 0.7%.

Albania which had had the highest GDP-percentage earlier in the pre-recession period still had the same percentage but was not the highest during the recession period. We observe a opposite affect of the global recession for Armenia which had 28% of GDP-construction percentage in 2008.

Over all we observe a negative affect on the construction industry due to the global recession of 2008.

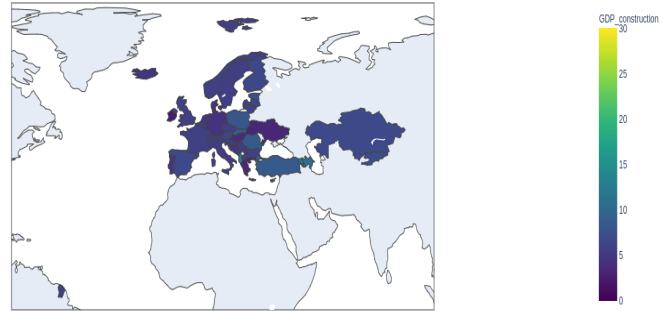


Fig. 3: Post Recession Period : 2012

Fig 3 shows the data for the year of 2012, which we named as the post-recession period. The situation seems to have got worse for the construction industry even after 4 years when the recession hit. Countries like Armenia and Albania which earlier showed resistance towards the recession seemed to have been affected by it. Armenia's GDP-construction dropped to 12.8% and for Albania it dropped to 13.14%. Spain which had also seemed to have controlled the affect of recession saw a huge drop of 5% dropping the GDP-construction at 6.6%. The worst affected countries were Ireland and Iceland for which the GDP-construction dropped to 2.2% and 4.6%.

V. CONCLUSION

The visualizations presented above do present a lot of facts stated in [1] to be true. The construction industry has been a adversely affected even though the total GDP of the country might have not gone down by much. Also we see that the affect of recession was long lasting on the construction industry which even after four years doesn't seem to have stabilized.

VI. IMPLEMENTATION

All the preprocessing mentioned under the methodology section were done using python and pandas library.

For the purpose of visualizations we used the plotly python library.

VII. REFERENCES

[1] Daniel Bukszpan,"Industries Hit Hardest by the Recession", Jun 1, 2012. [link](#)

Plotly : Choropleth Maps —
<https://plotly.com/python/choropleth-maps/>