Thesis Update

The Determinants of Economic Growth in Europe. A Regional Analysis.

Elia Di Gregorio

Vienna University of Economics and Business

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Plot twist

The aim of the paper is to update the research focus of Crespo Cuaresma et at. (2014) [1] and expand it by including regions of EU candidates, too.

1. Republic of Serbia
2. Bosnia and Herzegovina
3. Montenegro
4. Kosovo
5. North Macedonia
6. Albania
7. Turkey
8. ~~Georgia~~
9. ~~Ukraine~~
10. Moldova

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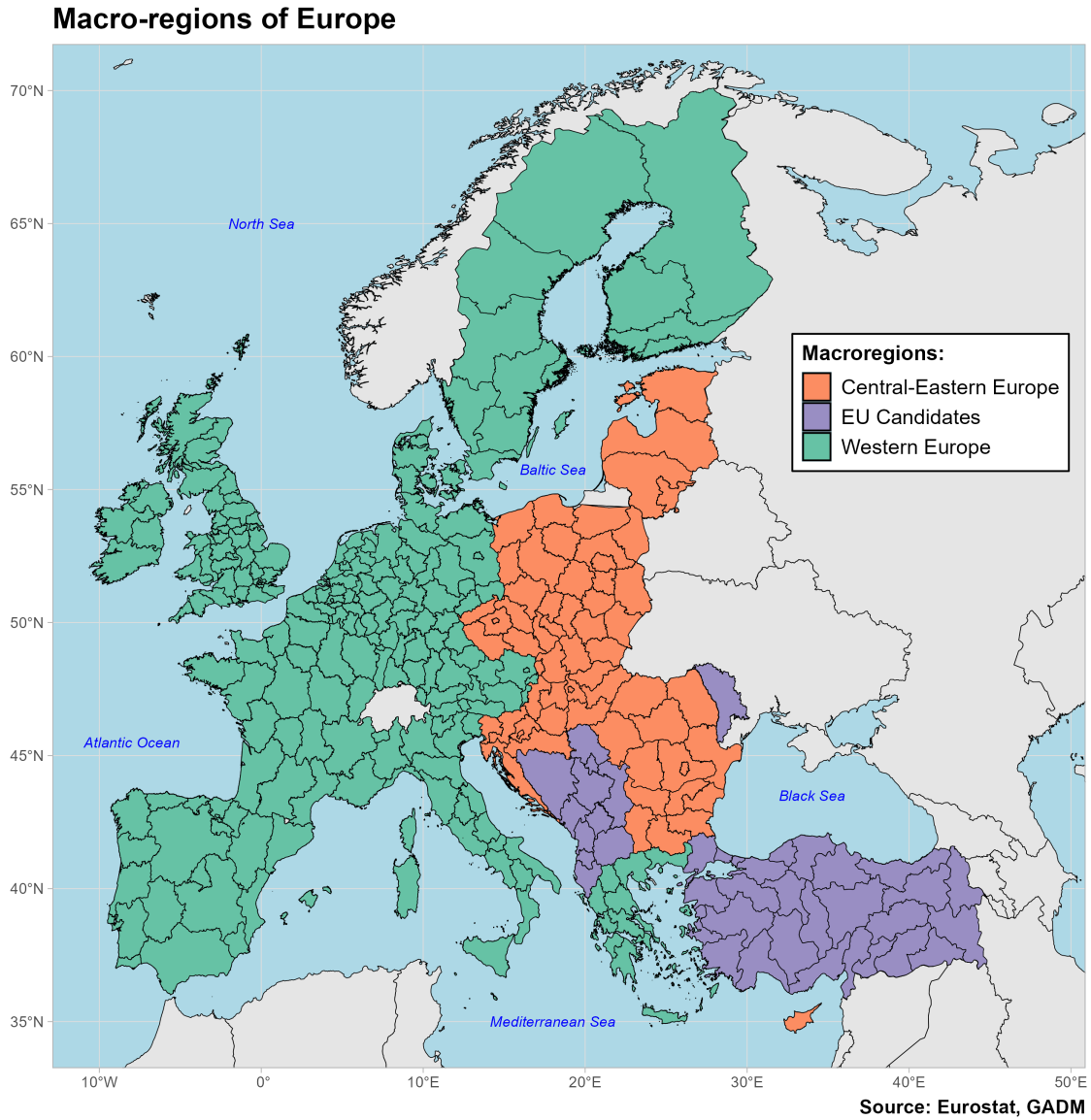
Overall, the dataset counts 36 candidate regions and 282 EU regions across 36 countries.

Area of Research



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NUTS across time

Some NUTS-2 changed contour across time, impacting data coverage. Such cases are:

- Group 1: Croatia, England, Hungary, Lithuania.
- Group 2: Ireland, Scotland.

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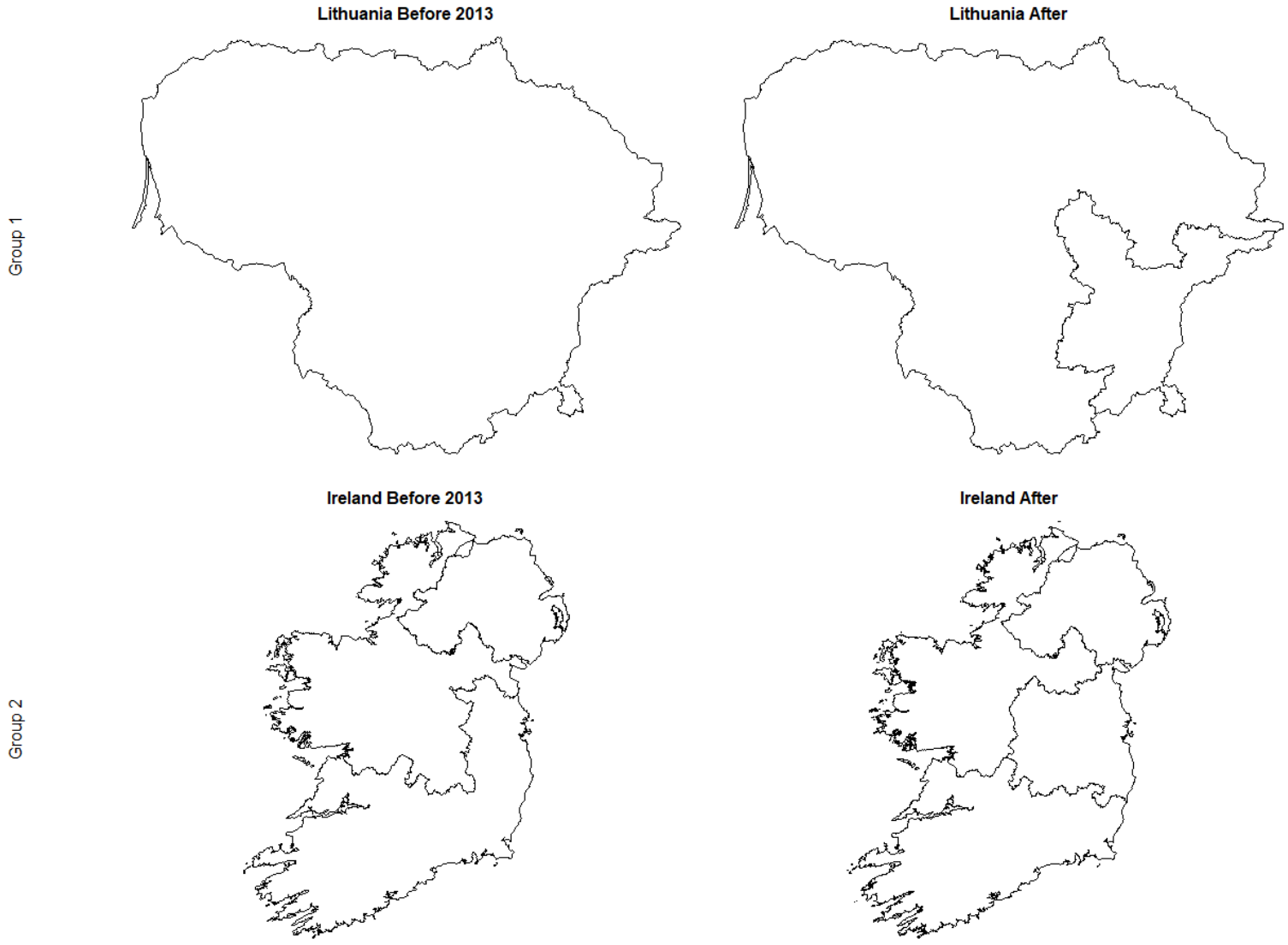
For Group 1 regions I will use the consolidated form (offering better coverage) whereas for Group 2 regions, the most recent subdivision (and impute the NAs).

Example



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Data

Sources:

- EU Databases: ARDECO, Eurostat, ESPONS;
- World Bank;
- National Statistical Offices;
- WiiW;

Time span: 2009 - 2019.
Regressors: 30 core variables + 7 controls.
Missing observations: $< 1\%$ of the entire dataset (core).

Variables

Dependent variable: GDP Growth (constant prices)

Explanatory Variables:

- GDP capita,
- Migration,
- Labor Productivity,
- Wage,
- Activity rate,
- NEET,
- Life expectancy,
- Fertility rate,
- Population by educational attainment,
- Employment rate,
- Unemployment rate,
- Employment by educational attainment,
- Labor Productivity by NACE activity,
- Business Investment Rate,
- Gross Fixed Capital Formation share (of GDP),
- Output density,
- Employment density,
- Population density.

Controls: Distance from Bruxelles, Macro-region, Capital, Coast, Island, Objective 1 Region, EU Member.

NACE Rev. 1.1 vs. NACE Rev. 2

9 activities:

- A Agriculture,
- B-E Industry,
- F Construction,
- G-I Retail, Transport,
- J Information and Communication,
- K Financial and Insurance,
- L-M-N Real Estate and Business Activities,
- O-Q Public Administration, Defence, Education,
- R-U Arts, Entertainment

NACE Rev. 1.1 vs. NACE Rev. 2

NACE Rev. 1.1		NACE Rev. 2	
Section	**Description**	**Section**	**Description**
A	Agriculture, hunting and forestry	A	Agriculture, forestry and fishing
B	Fishing		
C	Mining and quarrying	B	Mining and quarrying
D	Manufacturing	C	Manufacturing
E	Electricity, gas and water supply	D E	Electricity, gas, steam and air conditioning supply Water supply, sewerage, waste management and remediation activities
F	Construction	F	Construction
G	Wholesale and retail trade: repair of motor vehicles, motorcycles and personal and household goods	G	Wholesale and retail trade; repair of motor vehicles and motorcycles
H	Hotels and restaurants	I	Accommodation and food service activities
I	Transport, storage and communications	H J	Transportation and storage Information and communication
J	Financial intermediation	K	Financial and insurance activities
K	Real estate, renting and business activities	L M N	Real estate activities Professional, scientific and technical activities Administrative and support service activities
L	Public administration and defence; compulsory social security	O	Public administration and defence; compulsory social security
M	Education	P	Education
N	Health and social work	Q	Human health and social work activities
O	Other community, social and personal services activities	R S	Arts, entertainment and recreation Other service activities
P	Activities of private households as employers and undifferentiated production activities of private households	T	Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use
Q	Extraterritorial organisations and bodies	U	Activities of extraterritorial organisations and bodies

Population by Educational Attainment

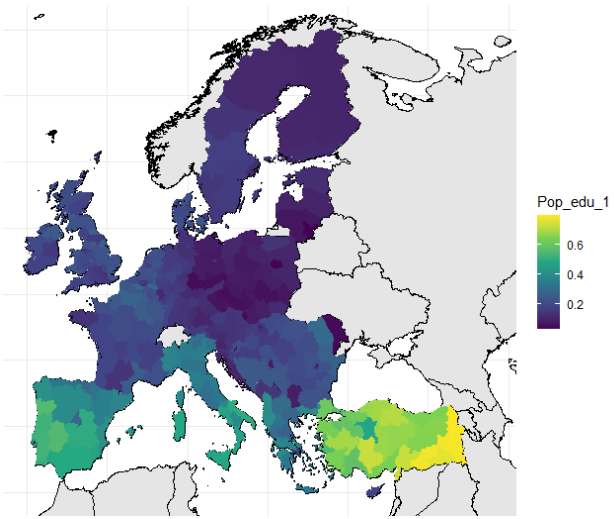
For non-EU countries I used data from the WDI reporting the cumulative percentage of population per ISCED level.

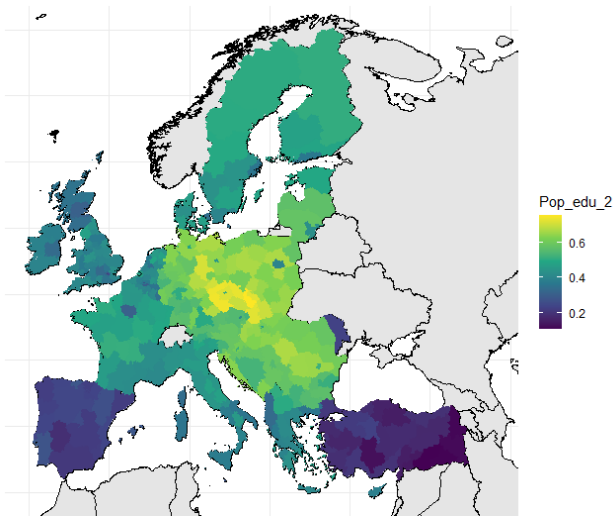
- ISCED_8 = `Educational attainment, Doctoral or equivalent, population 25+, total (%) (cumulative)` was the lowest share of population;
- ISCED_1 = `Educational attainment, at least completed primary, population 25+ years, total (%) (cumulative)` being the highest.

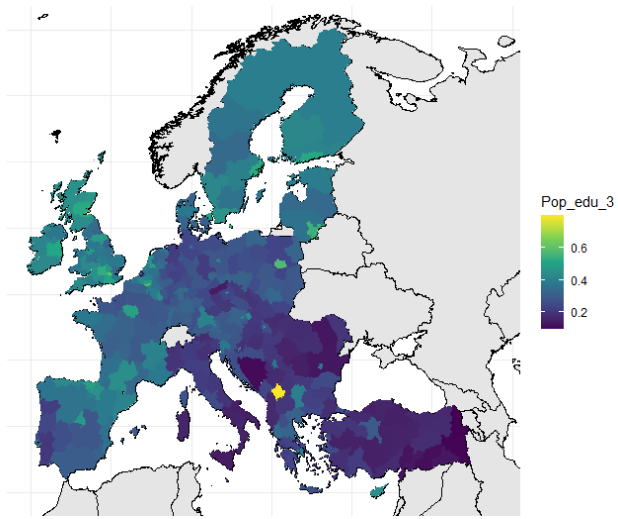
```
WDI_data <- WDI %>%
  mutate(Pop_edu_3 = ISCED_5/100,
         Pop_edu_2 = (ISCED_3 - ISCED_5)/100,
         Pop_edu_1 = (ISCED_1 - ISCED_3)/100)
```

Proxy for Kosovo

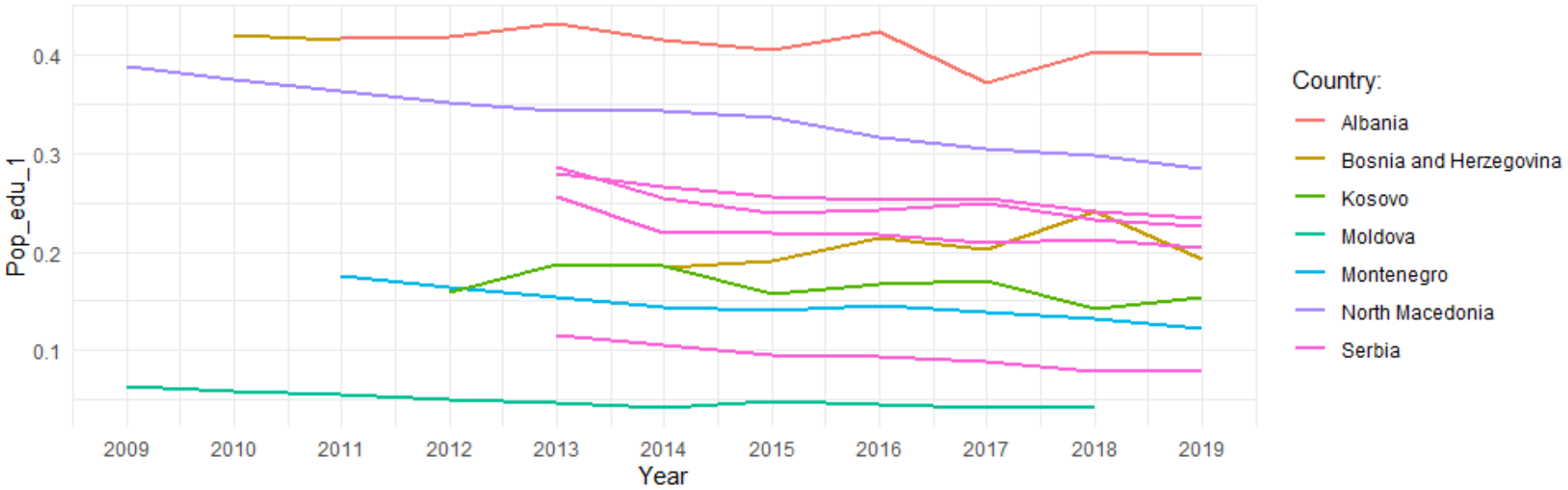
I could not find data on the level of education of Kosovo's population but I used Labor force by level of education (% of total working-age population with basic, intermediary or advance education) as a proxy.







Focus Balkans - Time series



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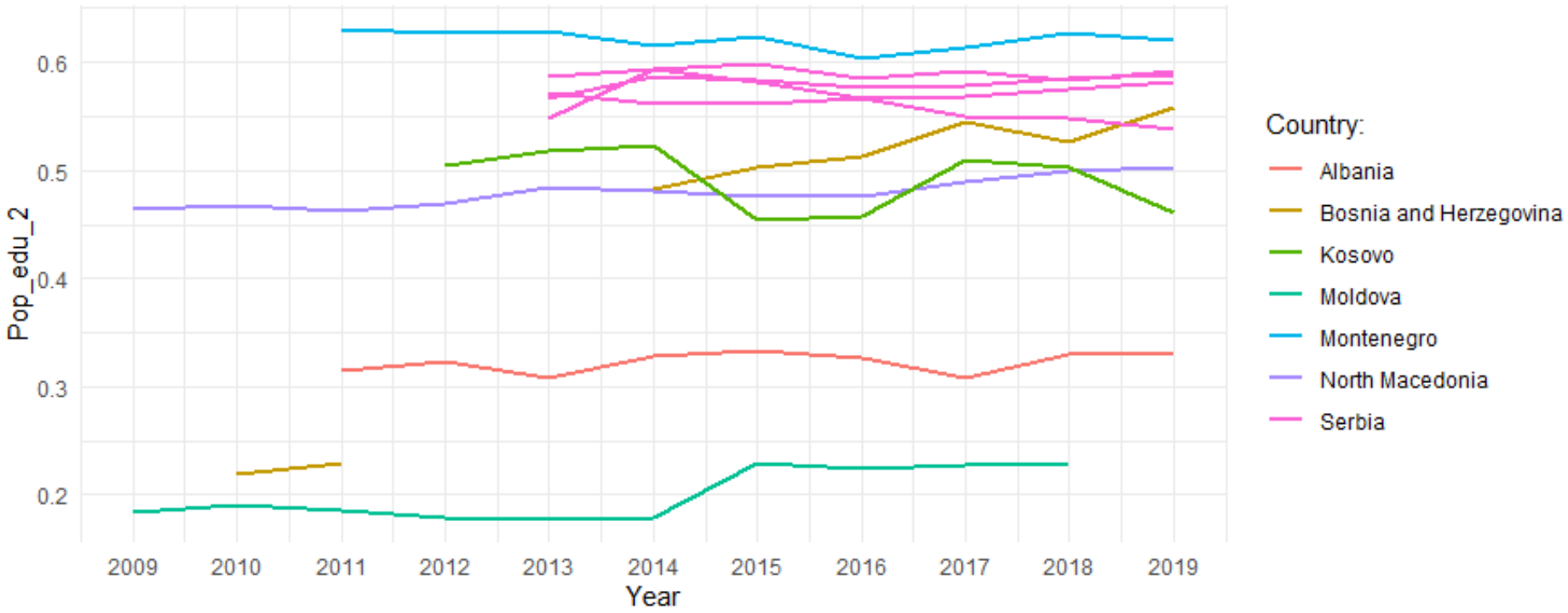

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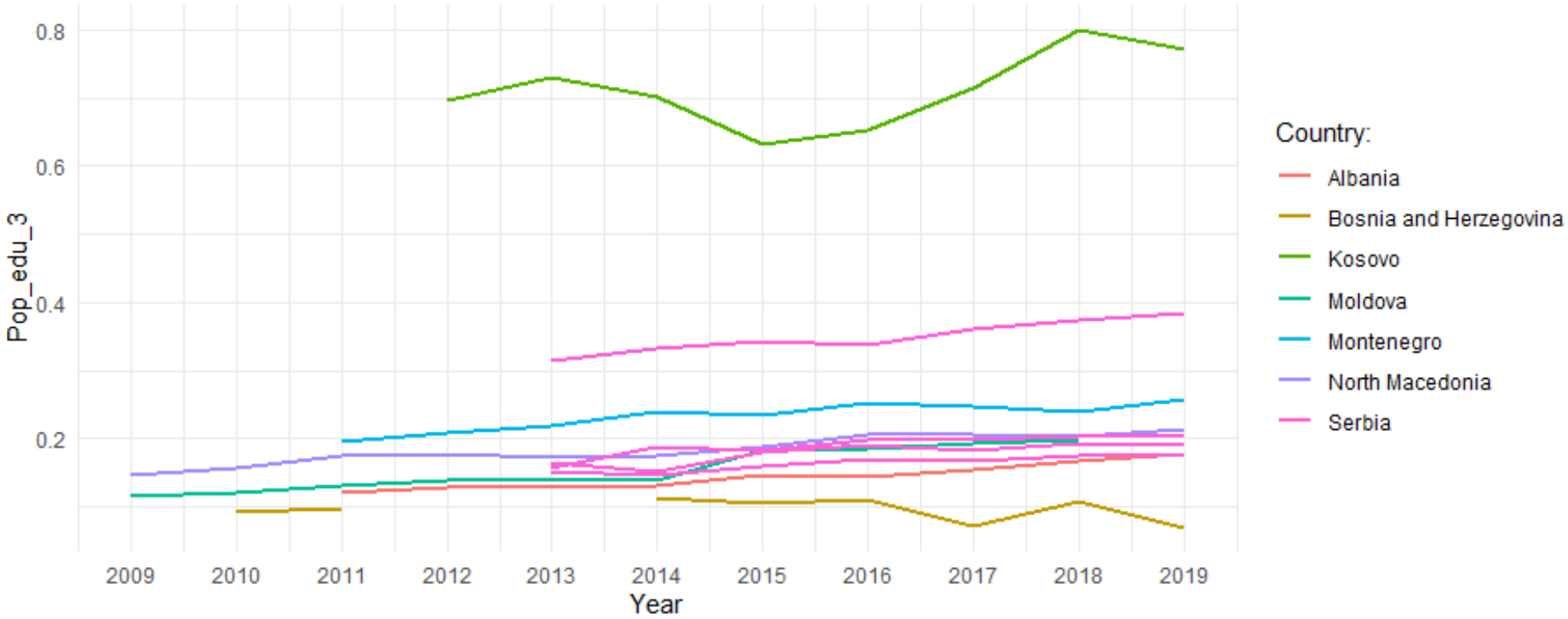

Employment by Educational Attainment

For Albania and BiH I could not retrieve any data on employment by educational level. On WDI I found:

- Unemployment by level of education (% of total labor force with basic, intermediate or advanced education)
- Labor force by level of education (% of total working-age population with basic, intermediate or advanced education)
- Besides, I already had the Total Labour Force figure.

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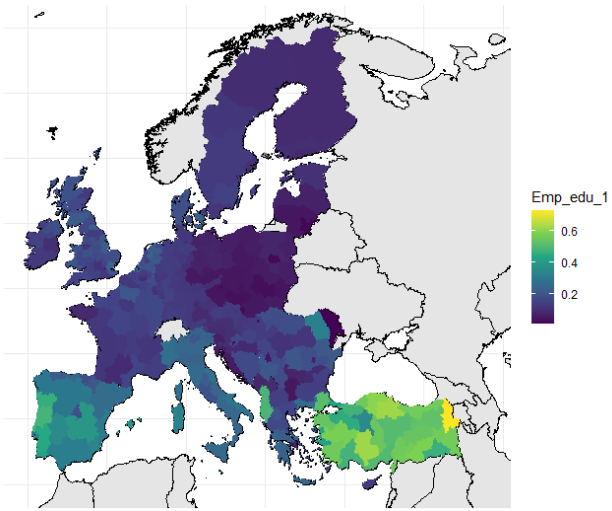
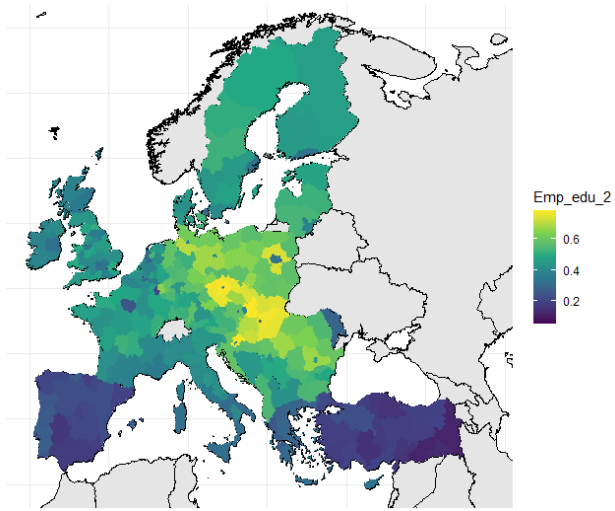
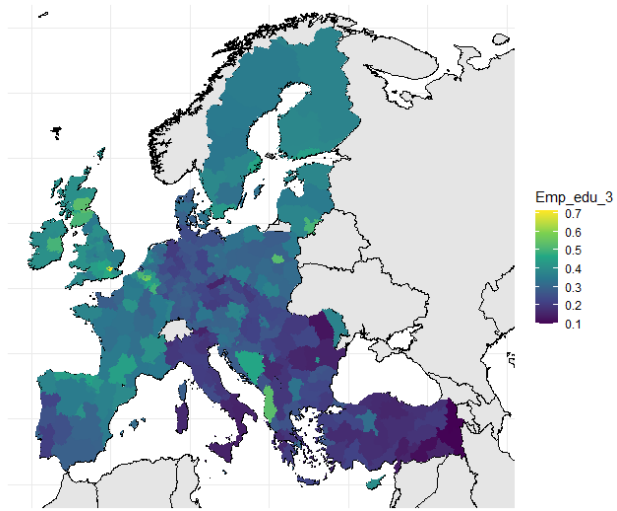
The process:

1. Labor Force x Share of Labor force by level of education = Labor Force by education level
2. Labour Force by education level x Share Unemployment by level of education = Unemployment by education level
3. Labour Force by education level - Unemployment by education level = Employment by education level

Visualization - Employment by ISCED







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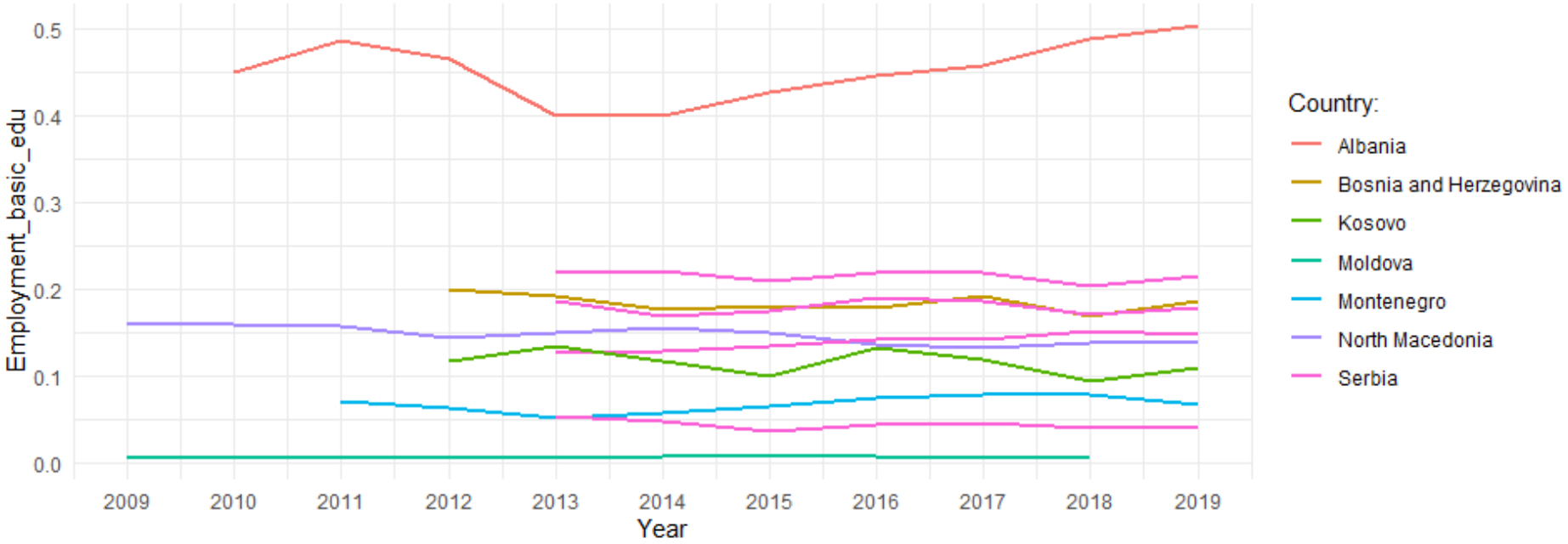

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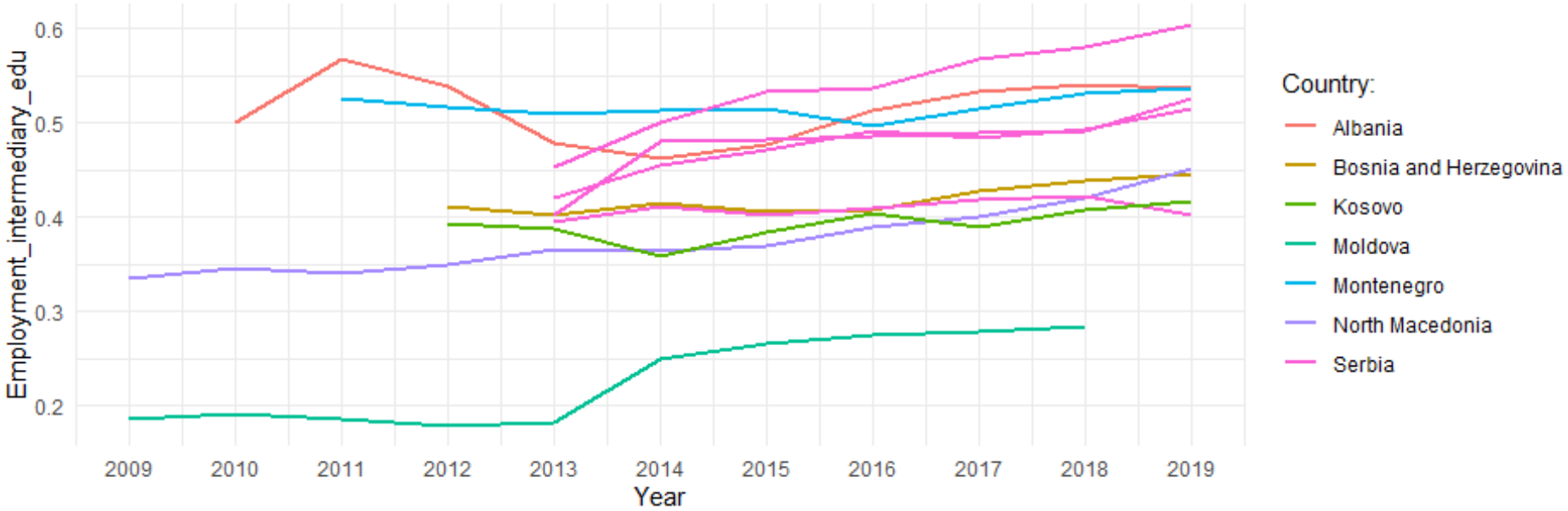

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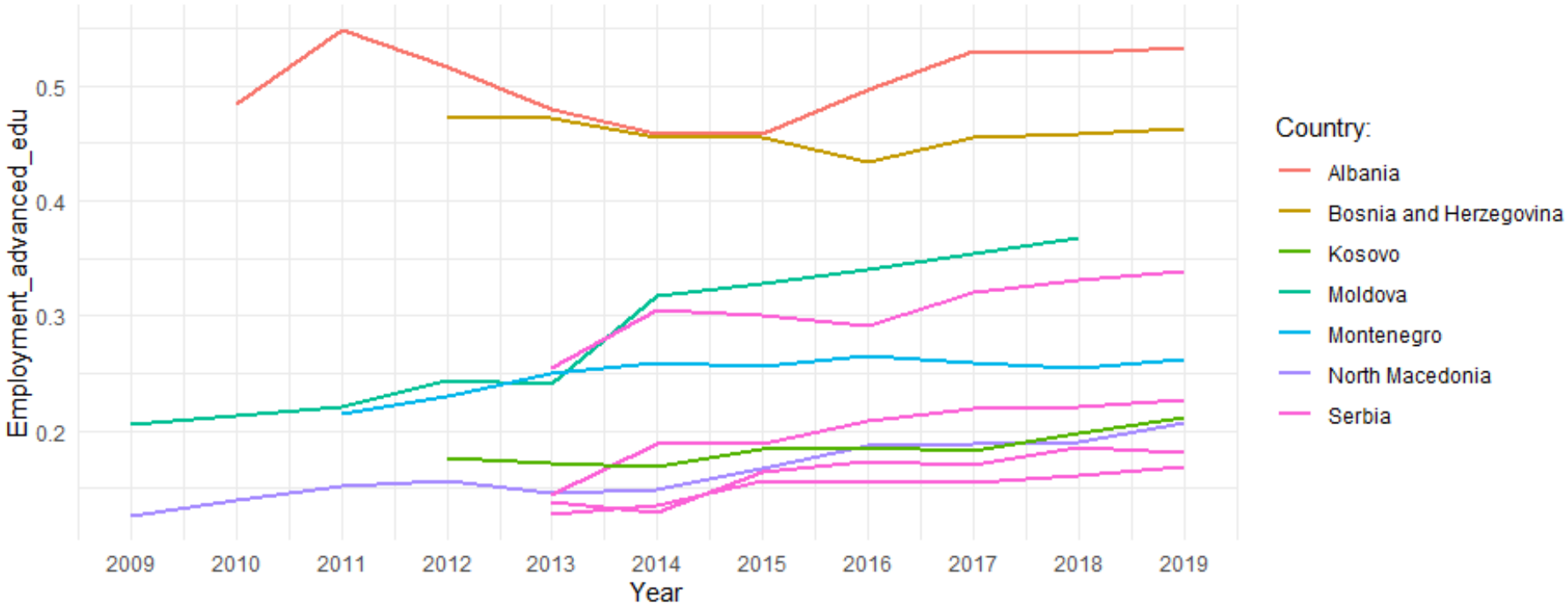

Feedback

Thank you for your attention!

References

[1] J. Crespo Cuaresma, G. Doppelhofer, and M. Feldkircher. The determinants of economic growth in european regions. Regional Studies, 48, February 2009.