IMPACT OF HEATING DEGREE DAYS IN SERBIA, SLOVENIA AND CROATIA'S CAPITALS ON HOUSEHOLD FUELWOOD CONSUMPTION

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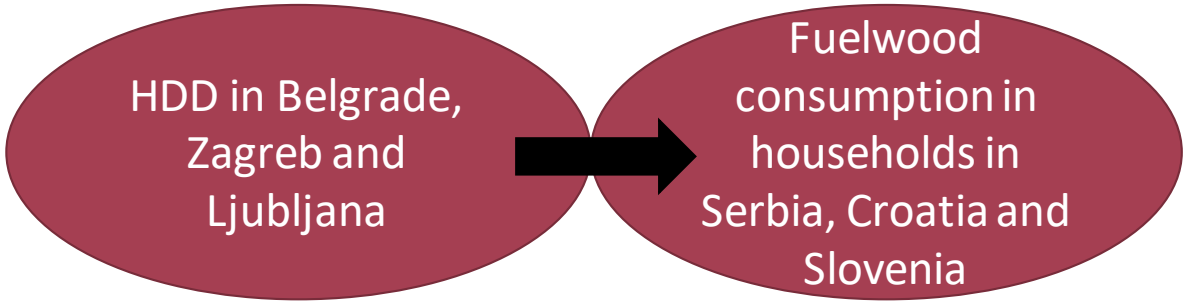
CONTENT

I: HDD: annual level and heating seasons;

II: Functional dependency:



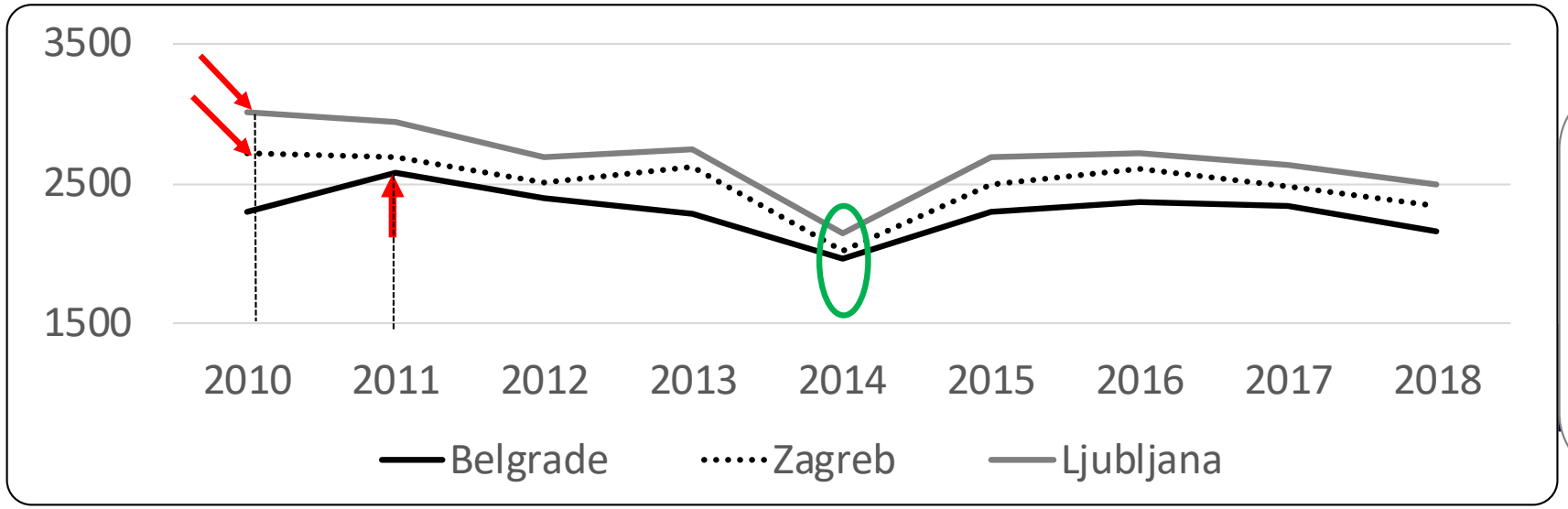
BELGRADE, ZAGREB AND LjUBLjANA:

- a temperate continental climate;
- the presence of all four seasons;

- Belgrade: at Latitude 44.49° N, Longitude 20.27° E and at an average altitude of 117 m;
- Zagreb: at Latitude 45.81° N, Longitude 15.98°E and at an average altitude of 122 m;
- Ljubljana: at Latitude 46.03° N, Longitude 14.30° E and at an average altitude of 228 m.

- Belgrade: **1,659,440** inhabitants;
- Zagreb: 804,507 inhabitants;
- Ljubljana: 270,000 inhabitants.

HEATING DEGREE DAYS IN BELGRADE, ZAGREB AND LJUBLJANA IN THE 2010-2018 PERIOD



HDD:
Belgrade: 1,969.6 - 2,579.8;
Zagreb: 2,020.7 – 2,712.7;
Ljubljana: 2,144.2 – 3,014.8;

Figure 1. Heating degree days in Belgrade, Ljubljana and Zagreb in the 2010-2018 period

HEATING DEGREE DAYS DURING THE HEATING SEASONS IN BELGRADE, ZAGREB AND LJUBLJANA

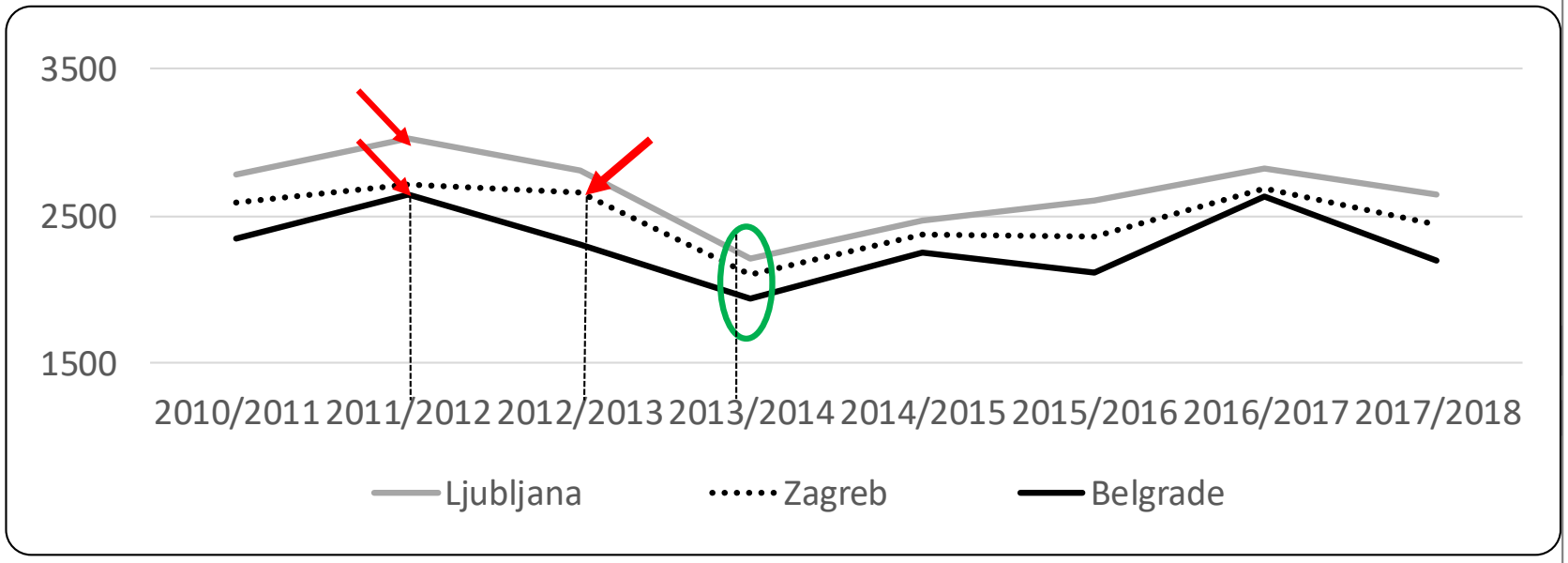


Figure 2. Heating degree days in Belgrade, Zagreb and Ljubljana in the 2010-2018

HDD IN HEATING SEASONS:
Belgrade: 1,939.5 - 2,640;
Zagreb: 2,102.6 – 2,718;
Ljubljana: 2,206.5 – 3,032.4.

THE NUMBER OF HEATING DAYS:
- Belgrade: 136-164;
- Zagreb: 146-168;
- Ljubljana: 154-187.

THE AVERAGE TEMPERATURES DURING HEATING SEASON:
- Belgrade: 3.44 - 6.15 °C;
- Zagreb: 3.63 - 5.89 °C;
- Ljubljana: 3.70 – 5.89 °C.

FUNCTIONAL DEPENDENCY: HDD and fuelwood consumption in households

BASIC PARAMETERS OF THE SIMPLE LINEAR ECONOMETRIC MODEL

1. **BELGRADE:** Model equation: $y = 59239.81 - 0.40 \cdot x_1$	**BELGRADE**: $R = 0.007$; $R^2 = 0.0823$
2. **ZAGREB**: Model equation: $y = 22298.41 + 10.11 \cdot x_2$	**ZAGREB**: $R = 0.866$; $R^2 = 0.751$
3. **LJUBLJANA**: Model equation: $y = 8276.317 + 4.353 \cdot x_2 - 292.33 \cdot x_t$	**LJUBLJANA**: $R = 0.949$; $R^2 = 0.901$

CONCLUSIONS

1. During the 2010-2018 period:

- Ljubljana had the highest value of HDD, followed by Zagreb and Belgrade;

- Ljubljana had the highest value of HDD during the heating seasons, followed by Zagreb and Belgrade;

- Ljubljana had the longest heating seasons, followed by Zagreb and Belgrade.

2. Linear simple econometric models best represent the dependence of fuelwood consumption in households in Serbia, Croatia and Slovenia on HDD in the capitals of these countries;

3. The connection between HDD in Ljubljana and fuelwood consumption in households in Slovenia is the strongest, while Zagreb and Croatia are in the second place;

4. The increase in HDD in Ljubljana and Zagreb has a positive impact on fuelwood consumption in households in Slovenia and Croatia;

5. The increase in HDD in Belgrade has a negative impact in fuelwood consumption in households in Serbia.

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THANK YOU FOR YOUR ATTENTION

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