ESPON

EUROPEAN UNION

Co-financed by the European Regional Development Fund

Inspire Policy Making with Territorial Evidence

FINAL REPORT //

Cross-border housing markets in Europe

The Giurgiu-Ruse Friendship Bridge region

Annex No. 7 Case Study // July 2022

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1 Bulgaria – Romania Border Region

1.1 Narrative & Territorial Scope

The Bulgaria – Romania was selected as a case study as it is representative of a rural cross-border region in Europe. The Danube acts as a physical border for most of the Romanian-Bulgarian border. There are only two border crossings over the Danube between Romania and Bulgaria. The New Europe Bridge crossing between Vidin, BG and Calafat, RO serves as a primary border crossing to the west of both countries while the Giurgiu-Ruse Friendship Bridge connects Southern Romania with Northern Bulgaria between Giurgiu, RO and Ruse, BG. Our case study focuses on the Giurgiu-Ruse Twin City Region. Given the lack of connectivity due to few border crossings over the river along with a hard language barrier, this region serves as an example of a less integrated border regions in Europe. It will highlight the importance of how border crossings, ports of entry and international bridges act as important foci points in border regions and consequently impact cross-border housing markets via proximity to these infrastructural links.

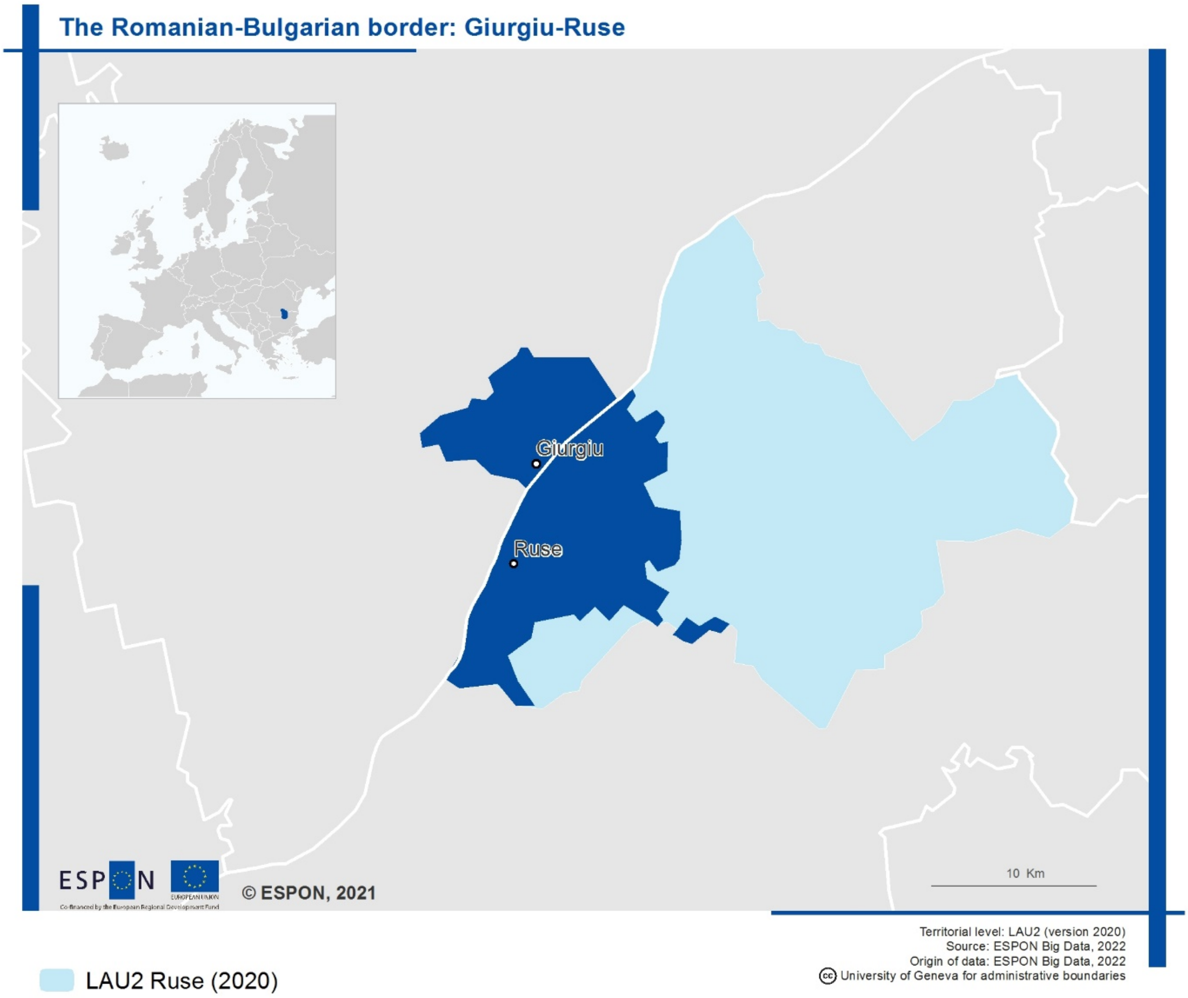


Figure 1: Case Study Area Ruse - Giurgiu

Box 1: Ruse-Giurgiu Household Scenario

Andreea and Viktoria have decided to take the next step in their relationship and are moving in together. Having met through an online dating app, Andreea and Viktoria live on opposite banks of the Danube. Andreea grew up in Giurgiu and attended nursing school in Bucharest before returning home and working as a nurse in her community. Likewise, Viktoria was born and raised in the vicinity of Ruse and following University at Angel Kanchev in Ruse, she lives with her parents and works for a local business in the city. After dating each other for over a year, the pair have decided now is the right time to move in together, so they are consequently looking for a place to live in Ruse. While they had considered renting from the private rental sector initially, their hesitancy in dealing with a landlord along with their desire to invest in property ultimately pushed them to purchase an apartment in Ruse.

Given the language barrier, Andreea will be unable to take up a nursing position in Ruse as she speaks very little Bulgarian. Therefore, she will commute across the bridge to her current job in Giurgiu and try to set up a banking and tax arrangement which allows her to live in Bulgaria and work in Romania. While Andreea acknowledges the need to learn Bulgarian will allow her to eventually access Bulgarian life more fully, she is fully fluent in English and is secure in knowing that her transition to Bulgaria will be eased by being able to live with her significant other.

1.2 Administrative Systems

1.2.1 Bulgarian Administrative Structure

Bulgaria is a unitary republic that recognises the principle of self-government (ECoR, 2022). It has three levels of governance: central, district and municipal levels. Most of the statutory power remains between the national and local levels though as the regional districts act as devolved divisions of the central government which are not directly elected (ECoR, 2022). At the local level, municipalities have gained administrative and some financial competencies through decentralisation initiatives by the central government which allows for more local autonomy (ECoR, 2022). Nevertheless, most statutory power and administrative competencies lies at the national level as Bulgaria is a highly centralised state (ECoR, 2022).

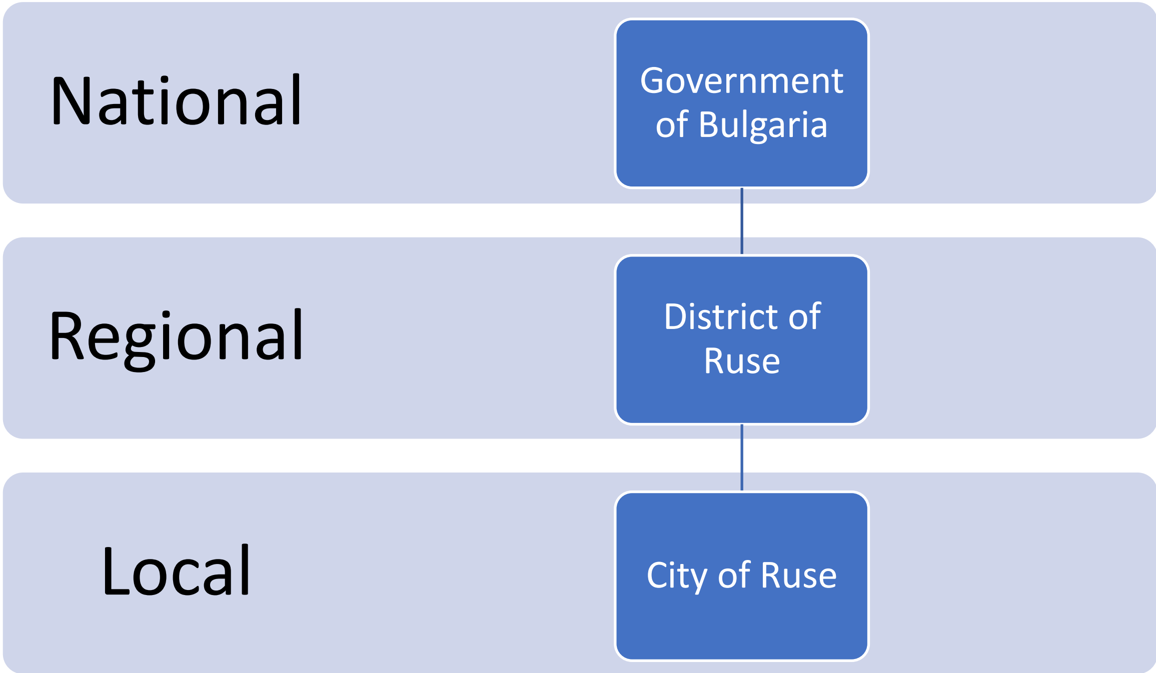


Figure 2: Administrative Schematic of Bulgaria

1.2.2 Romanian Administrative Structure

Romania has a four-tiered administrative system. At the national level, the central government has delegated certain responsibilities to regional, county and municipal level while it coordinates policy and implements oversight over responsibilities still managed at a national level (ECoR, 2022). At the regional level, eight development regions have been designated as agents for implementing territorial development by the central government. These development regions are not used for territorial administration and instead function as bodies for securing and progressing regional development projects (ECoR, 2022). Counties act as an intermediate administrative unit between the central government and municipalities. Some of the main responsibilities for counties are issuing social care, public health, medical care and infrastructural management (ECoR, 2022). At the local level, municipalities are responsible for managing most local services including social housing, building controls and urban planning (ECoR, 2022). The central government appoints prefects to supervise the implementation of government policies and to ensure coordination and uniformity with government decisions (ECoR, 2022).

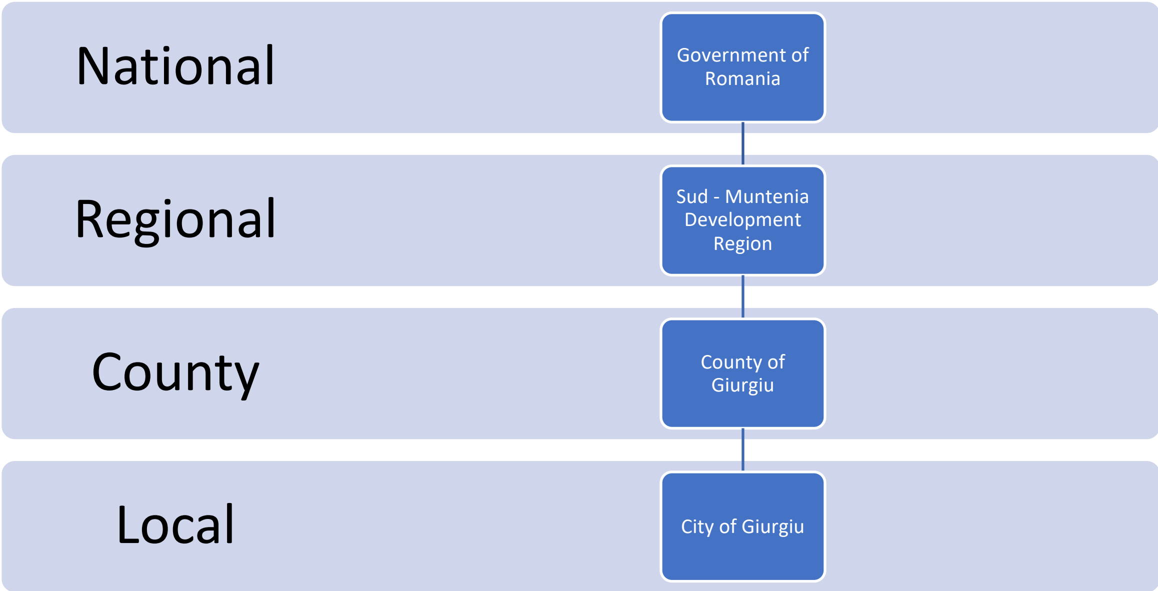


Figure 3: Administrative Schematic of Romania

1.3 Facts & Background

While this region is considered to be a rural area, it is important to recognise Ruse and Giurgiu's placement within their national settlement hierarchies. Ruse is the fifth largest city in Bulgaria and is major economic hub for the north of Bulgaria (Jańczak, 2013). Ruse is also the site of the only Bulgarian riverport along the Danube and serves as an important logistics centre for the greater region (Jańczak, 2013). Similarly, Giurgiu is an important Romanian settlement along the Danube and is only an hour's drive away from Bucharest (Jańczak, 2013). Hence, the Giurgiu-Ruse City Region represents an important regional centre across the area.

1.4 Drivers & Factors

1.4.1 Shrinking Population

One of the primary constraints in developing a sustainable housing sector between Ruse & Giurgiu is a shrinking population. A negative rate of natural growth along with a continuous outward migration stifles the region's ability to develop a sustainable housing sector (Stoychev, et al., 2016). With an ageing population coupled with intensive labour migration to larger cities or Western Europe, the Ruse-Giurgiu housing market struggles with high rates of vacancy on both sides of the border along with an ageing housing stock (Stoychev, et al., 2016).

While 'shrinking city' policies may help better concentrate investment and funding across the region, population loss is still one of the primary obstacles this case study faces as the rural areas and small-to-mid sized cities adjacent to the Danube struggle to cope with continual population loss and emigration.

1.4.2 Declining Real Estate Market

As the population across Ruse-Giurgiu continues to shrink, its real estate market has been in decline as a result of high levels of vacancy, an ageing building stock and a lack of investment in construction (Stoychev, et al., 2016). As vacant buildings and outdated housing stock continue to fill the market, property values will continue to decrease as their value deteriorates in the wake on sustained population loss.

Conversely, the pandemic, a labour force returning home due to Brexit and improving economic conditions across Romania and Bulgaria has the potential to change declining market trends as population loss is stymied while economic growth permits people to return home and settle down (Sharma, 2021). Hence, close attention to the housing markets of this region as it exits the pandemic turn down could suggest changing trends.

1.4.3 Outdated Buildings

Another primary challenge facing Ruse-Giurgiu's housing market is an outdated building stock (Stoychev, et al., 2016). As buildings have not been invested in due to migration, vacancy and population loss, a large proportion of the building stock available across the region are not up to par with modern standards and requires significant investment and renovation. As the building stock continues to age, the process to modernise buildings becomes more difficult as the cost and amount of renovations adds up to an unsustainable amount.

1.4.4 Workforce Mismatch

Another issue impacting the housing market in the Ruse-Giurgiu region relates to its labour market. Due to a mismatch in talent across the workforce, many workers have migrated to meet their needs while the industries remaining in the region are struggling with labour shortages (Stoychev, et al., 2016). While labour market discrepancies do not directly impact the housing market, high levels of unemployment and the inability to attract new talent to the region can have negative consequences across the economy including the housing market. Without enough inhabitants to occupy the housing stock, conditions will continue to deteriorate hence amending the workforce mismatch can have a ripple effect across the region.

1.4.5 Accessibility over the Border

A central aspect to this research is how the formation of a cross-border housing market is integrated with the level of accessibility present across the border region. Hence, accessibility can act as either a driver or an impediment to promoting opportunities for further housing integration across border regions.

The following maps are exemplative of a disconnected, relatively inaccessible region. Only the urban cores are accessible by public transport by bus, and there is no evidence of interconnection of public transport routes across the border. Likewise, the map showing rail illustrates how poorly the region is serviced by passenger rail. While we know there is a rail connection across the Ruse-Giurgiu Danube Bridge, there is only sporadic service between the two cities. Hence overall, the region is quite disconnected and is strongly separated by the Danube River despite the nearby bridge providing some degree of connection.

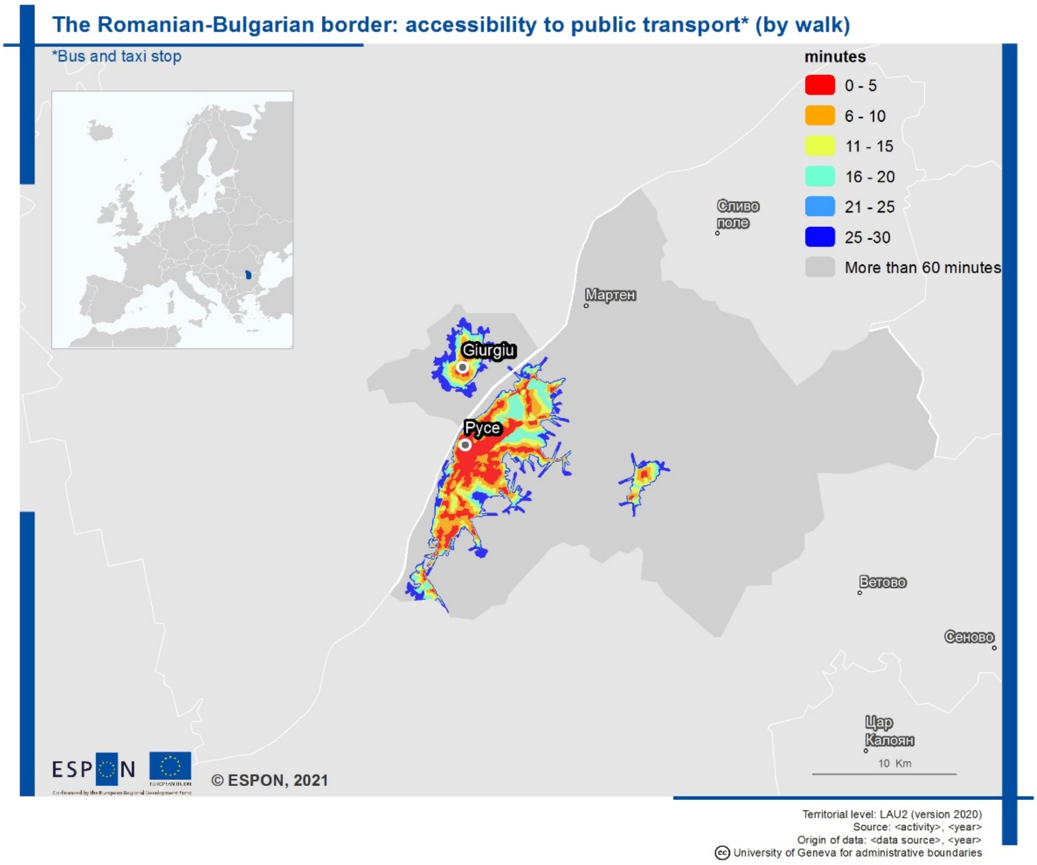


Figure 4: Accessibility Map of Public Transport

This map shows the accessibility to public transport bus and taxi stops, measured as the required walking time from any point in the analysed area to the nearest stop. Results are delivered as isochrones with a 5-minute interval. It is evident that there is little accessibility between the countries across the border.

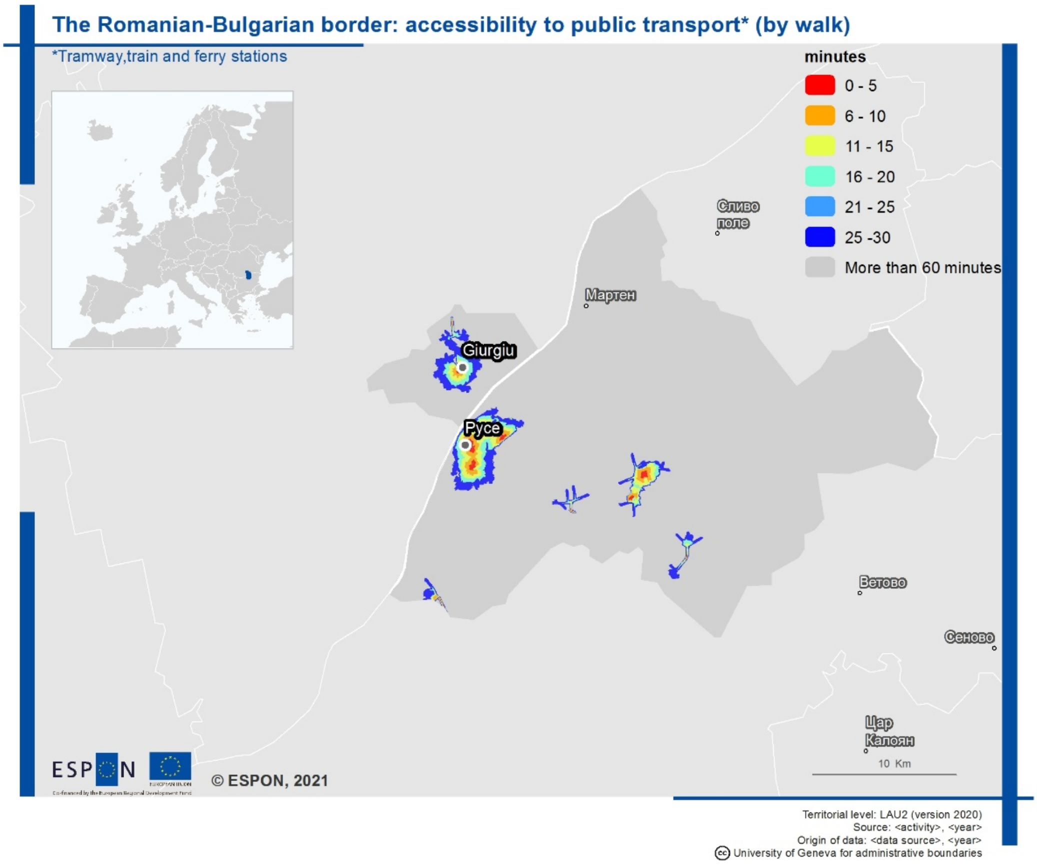


Figure 5: Accessibility of Public Transport (Rail)

This map shows the accessibility to public transport tramway, train and ferry stations, measured as the required walking time from any point in the analysed area to the nearest station. Results are delivered as isochrones with a 5-minute interval. This indicates the rural nature of this case study region.

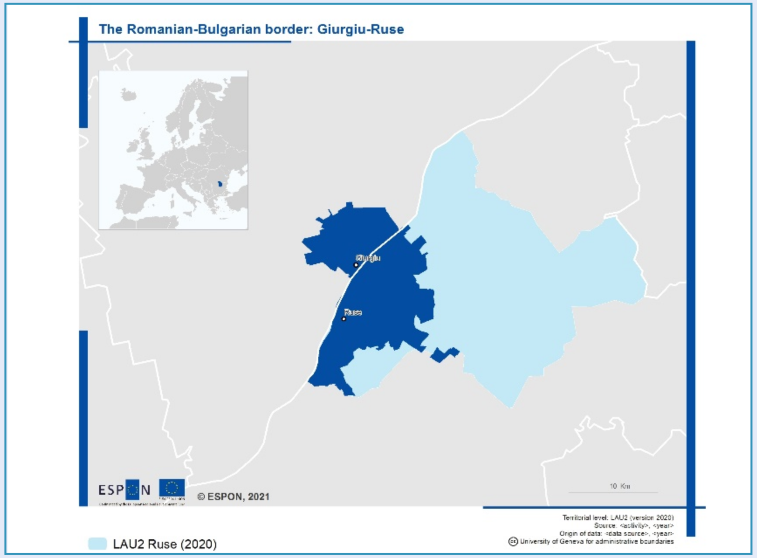
1.5 Policy Analysis

1.5.1 Spatial Planning Strategies & Housing Policies

Both Giurgiu and Ruse are independent municipalities within their country's administrative structures. Hence, the mayor and their administration have responsibility and statutory control over housing policies in both cities. Both cities employ a chief architect as a civil servant responsible for development management (Municipality of Giurgiu, 2021; Municipality of Ruse, 2021). The chief architect is hence responsible for developing an urban planning framework in line with national policy and implementing an urban development plan approved by each city's administration (ECoR, 2022). Moreover, as some competencies are shared between the national government and local authorities, certain aspects of housing policy such as social housing, youth housing and sustainable renovations are managed between the national government and the local authority (ECoR, 2022).

Above the municipal structure, regional governments coordinate activity across the border. In Bulgaria, the Province of Ruse maintains this role while the County of Giurgiu functions in Romania (Municipality of Ruse, 2021; Municipality of Giurgiu, 2021). It should also be noted the Giurgiu and Ruse entered a twin city agreement. Hence, both governments seek to collaborate and work together in order to promote their region while also coordinating any essential cross-border services (Jańczak, 2013).

2 Regional Fiche: Bulgaria – Romania: Ruse – Giurgiu



Section 1: Housing

	Ruse	Giurgiu
Legislation	Landlord & Tenant Law – *Bulgaria*	Housing Act 1996 – *Romania* Emergency Ordinance 40 (1999) – *Romania* Land Fund Law 1991 – *Romania*
Strategies	Social Mobility Plan – *Ruse*	Integrated Urban Development Strategy – *Giurgiu*
Administrations	Municipality of Ruse Province of Ruse	Municipality of Giurgiu County of Giurgiu
Tenure	84.3% – *Homeownership Rate Bulgaria*	96% – *Homeownership Rate Romania*
Affordability	€378.86/sqm – *Avg Price of House in Ruse*	€ 282/sqm – *Avg Price of House in Giurgiu*
Supply Gap	26,170 – *Housing Surplus in Ruse*	

2 Regional Fiche: Bulgaria – Romania: Ruse – Giurgiu

Section 2: Cross-Border Dynamics

	Ruse	Giurgiu
Inhabitants	144,936 – *population of Ruse*	61,353 – *population of Giurgiu*
Net Migration	1700-1800 – *daily bridge crossings*	1700-1800 – *daily bridge crossings*
Border Crossings	1 – *Danube Bridge*	1 – *Danube Bridge*
Purchasing Power	€10,520 – *GDP per Capita of Ruse Province*	€8,600 – *GDP per Capita of Giurgiu County*
Inflation	2.1%	2.65%
Unemployment	4.5%	7.5%
Mortgage Interest Rates	3.03%	4.81%
Language Barriers	Bulgarian	Romanian

Section 3: Spatial Planning Frameworks

	Region-wide	Local-areas
Regional Plans	ERGO Master-Plan Accessibility Improvement of Euroregion Ruse – Giurgiu with Pan-European Transport Corridor 9	ERGO Master-Plan Accessibility Improvement of Euroregion Ruse – Giurgiu with Pan-European Transport Corridor 9
EU/Cross-Border Programmes	Euroregion Ruse – Giurgiu Investment Profile Interreg Balkan – Mediterranean Interreg Danube Transnational Programme Interreg Romania-Bulgaria	Euroregion Ruse – Giurgiu Investment Profile Interreg Balkan – Mediterranean Interreg Danube Transnational Programme Interreg Romania-Bulgaria
Cooperative Agreements	Romanian-Bulgarian CBC Programme	Romanian-Bulgarian CBC Programme
Governance	Twin City Agreement	Twin City Agreement
Local Initiatives	Bulgarian-Romanian Chamber of Commerce & Industry Association of Danube Municipalities	Bulgarian-Romanian Chamber of Commerce & Industry Association of Danube Municipalities
Legal Frameworks	European Directives	European Directives

3 Indicators for Romania-Bulgaria Case Study

This chapter reviews and analyses both the updated and new indicators in a cohesive fashion in order to arrive at some interim conclusions which provide us further detail on any potential activity of a cross-border housing market along with an understanding of general wellbeing in relation to the affordability of housing.

3.1 Offerings and Prices

This subchapter details information pertaining to the offerings and prices found in the web scraping process through a number of different indicators.

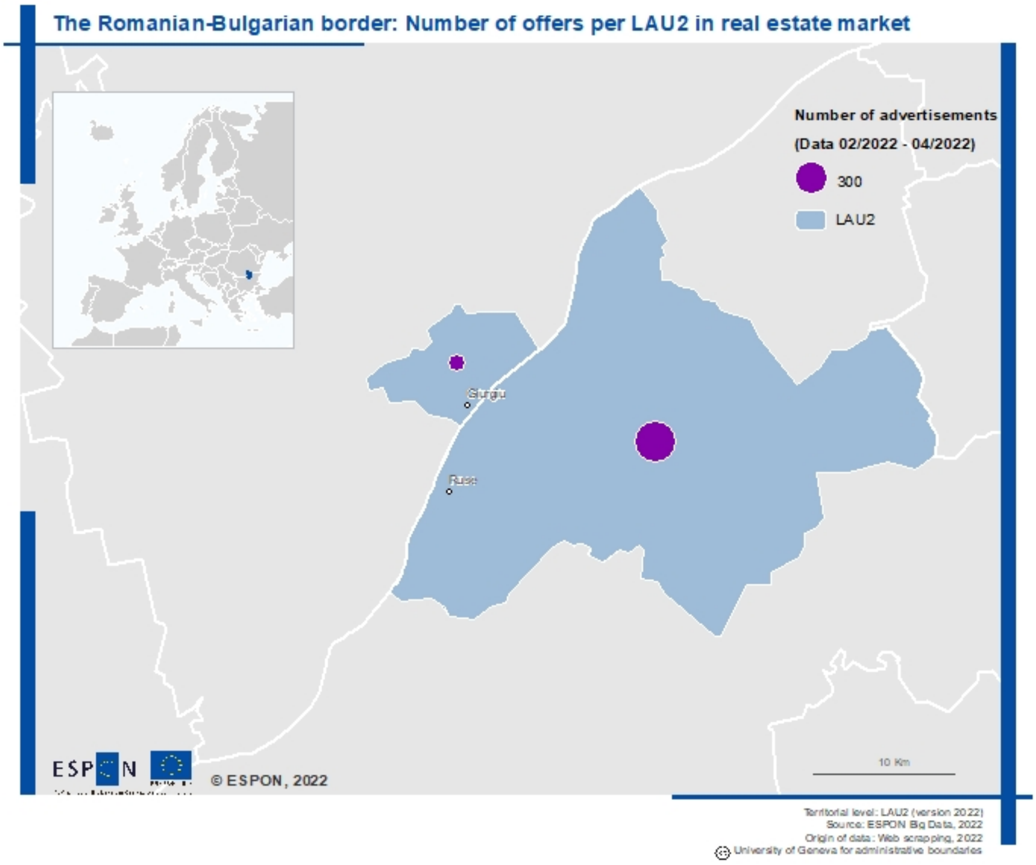


Figure 6: Number of Offers on Advertised Dwellings per Municipality Real Estate Market

Indicator and data

This map displays the number of advertisements for buying dwellings scraped from web portals in the period of February to April 2022. The advertisements are aggregated at LAU2 level, and they are unique and avoid counting multiple instances of the same advertisement across time.

The collected advertisements are cleaned according to the methodology explained in the technical annex. For some LAU2 units, no valid advertisements are found. The list of valid advertisements is used in all subsequent indicators.

Trends and patterns

For this case study, few offers were scraped despite several different trials from different websites. Overall, there are more offers on the Bulgarian side (608) than on the Romanian side (117) with the highest concentration of offers observed in Ruse city centre.

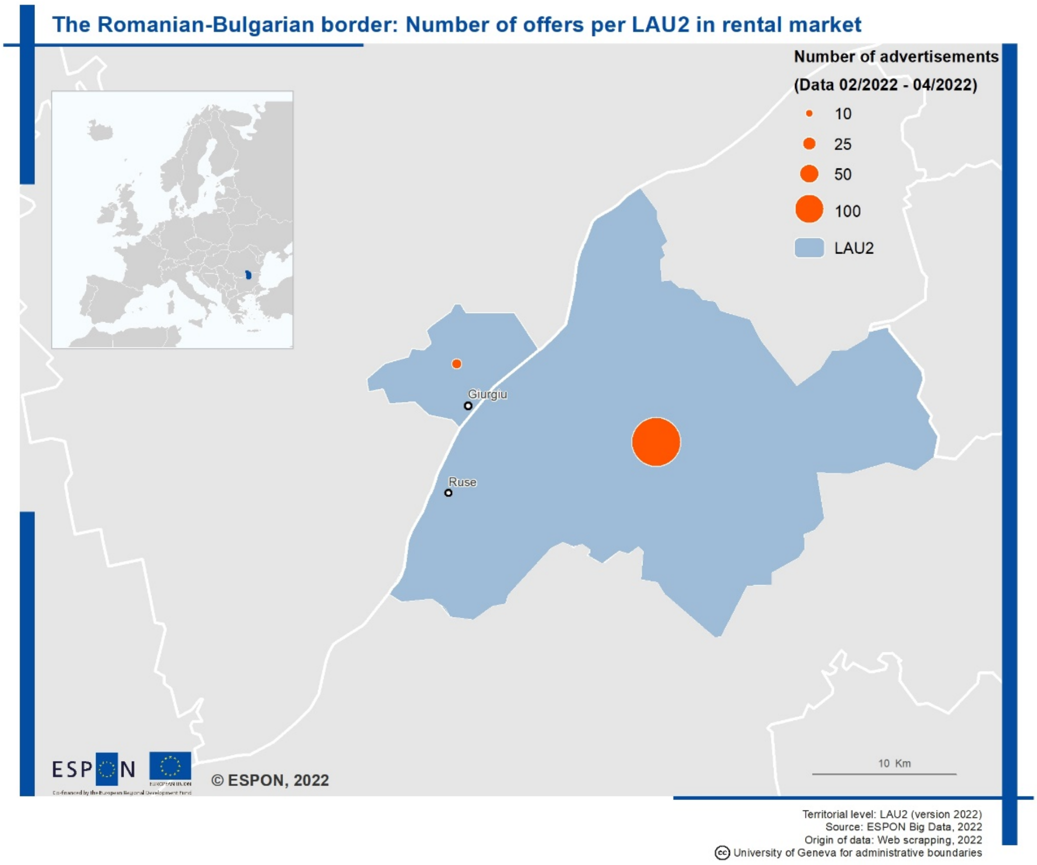


Figure 7: Number of Offers of Advertised Dwellings per Municipality across rental market

Indicator and data

This map displays the number of advertisements for renting dwellings scraped from web portals in the period of February to April 2022. The advertisements are aggregated at LAU2 level, and they are unique and avoid counting multiple instances of the same advertisement across time.

The collected advertisements are cleaned according to the methodology explained in the technical annex. For some LAU2 units, no valid advertisements are found. The list of valid advertisements is used in all subsequent indicators.

Trends and patterns

For this case study, few offers were scraped despite several different trials from different websites. Overall, there are more offers on the Bulgarian side (394) than on the Romanian side (26) with the highest concentration of offers observed in Ruse city centre.

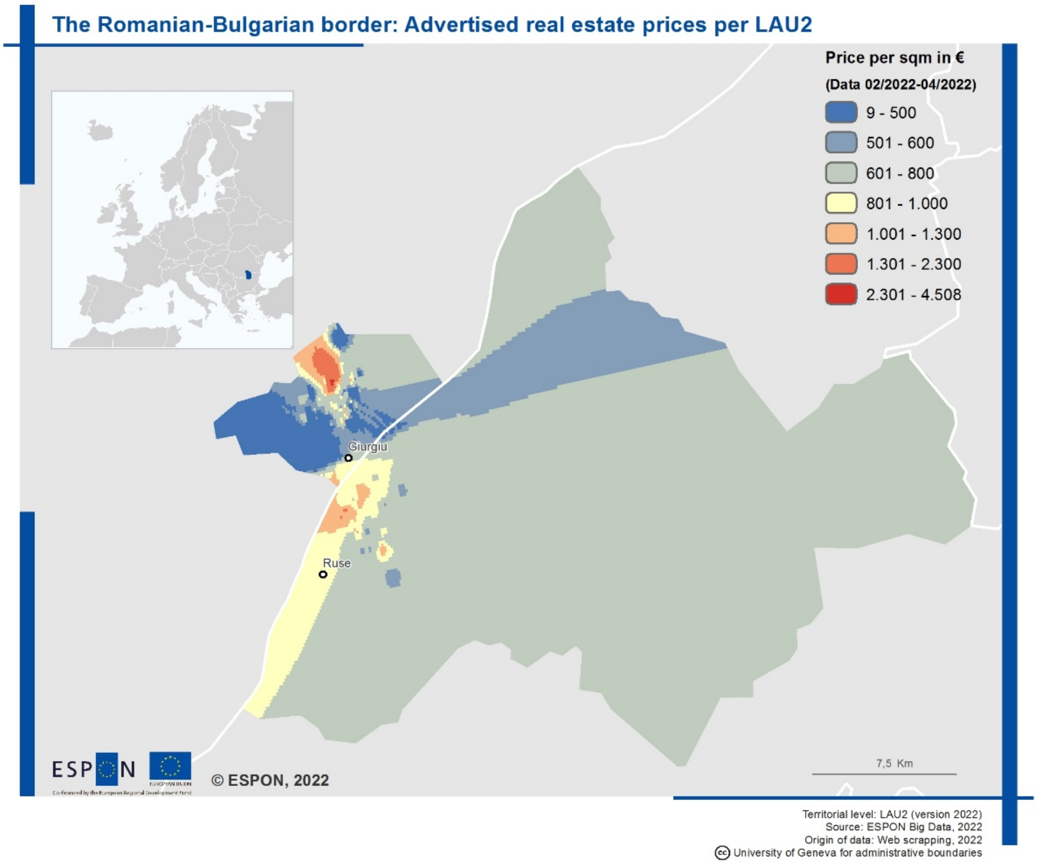


Figure 8: Advertised Price of Residential Property for Sale

Indicator and data

This visualization shows the advertised price of real estate. The data shown is the average price of buying a property in €/sqm computed from web scraped data obtained from online portals. All typologies are included (multifamily / single family, new / old).

Trends and patterns

While it iss difficult to conjecture a pattern given the dearth of adverts scraped for this case study, we do note certain trends. Overall, the price of housing for sale in Ruse is higher than that of Giurgiu. Most of the housing in Ruse goes for 801€ to 1000€ per sqm while in Giurgiu most of the housing goes for between 9€ and 800€ per sqm. To the north of both cities, there is a residential enclave experiencing higher prices of above 1000€ per sqm.

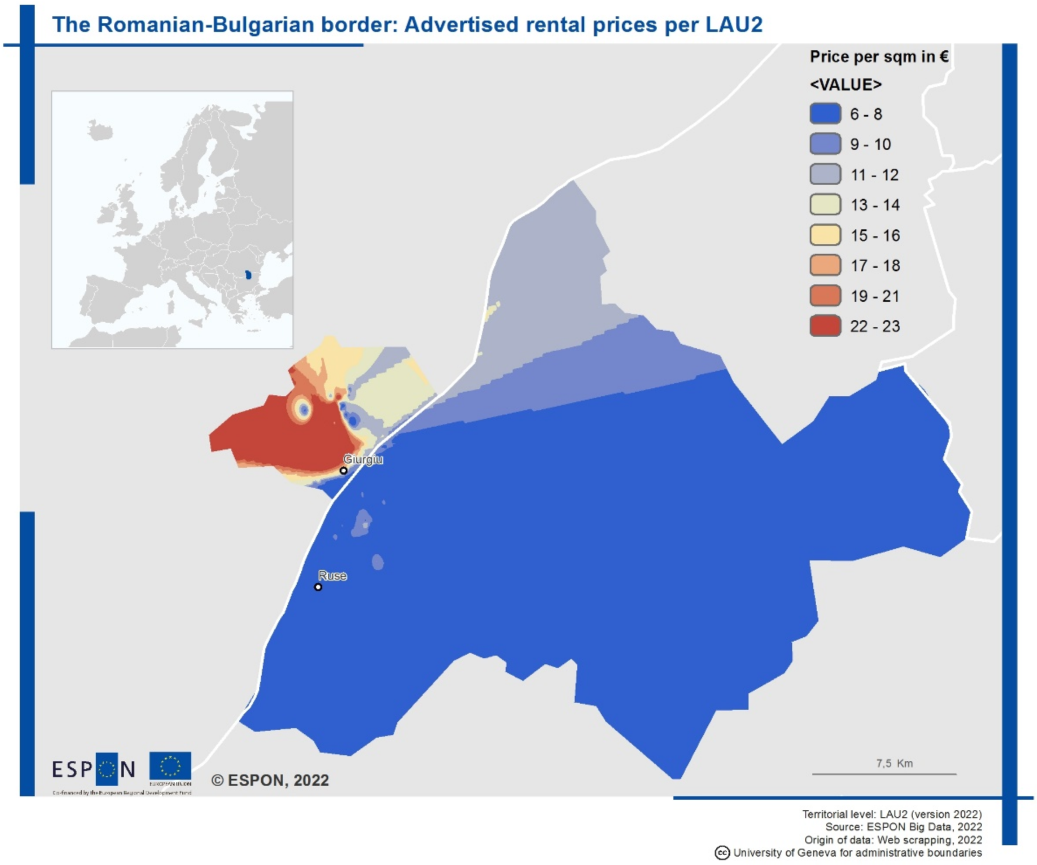


Figure 9: Advertised Price of Residential Property for Rent

Indicators and data

This visualization shows the advertised price of rental. The data shown is the average price of renting a property in €/sqm computed from scraped data obtained from online portals. All typologies are included (multifamily / single family, new / old).

Trends and patterns

While it is difficult to conjecture a pattern given the dearth of adverts scraped for this case study, we do note certain trends. Overall, the price of housing for rent in Giurgiu is higher than that of Ruse. Most of the housing in Ruse goes for 6€ to 8€ per sqm while in Giurgiu most of the housing goes for between 22€ and 23€ per sqm. Within the rental market, there is a clear border divide between housing prices but more data is required to verify the border divide of lower rents in Ruse.

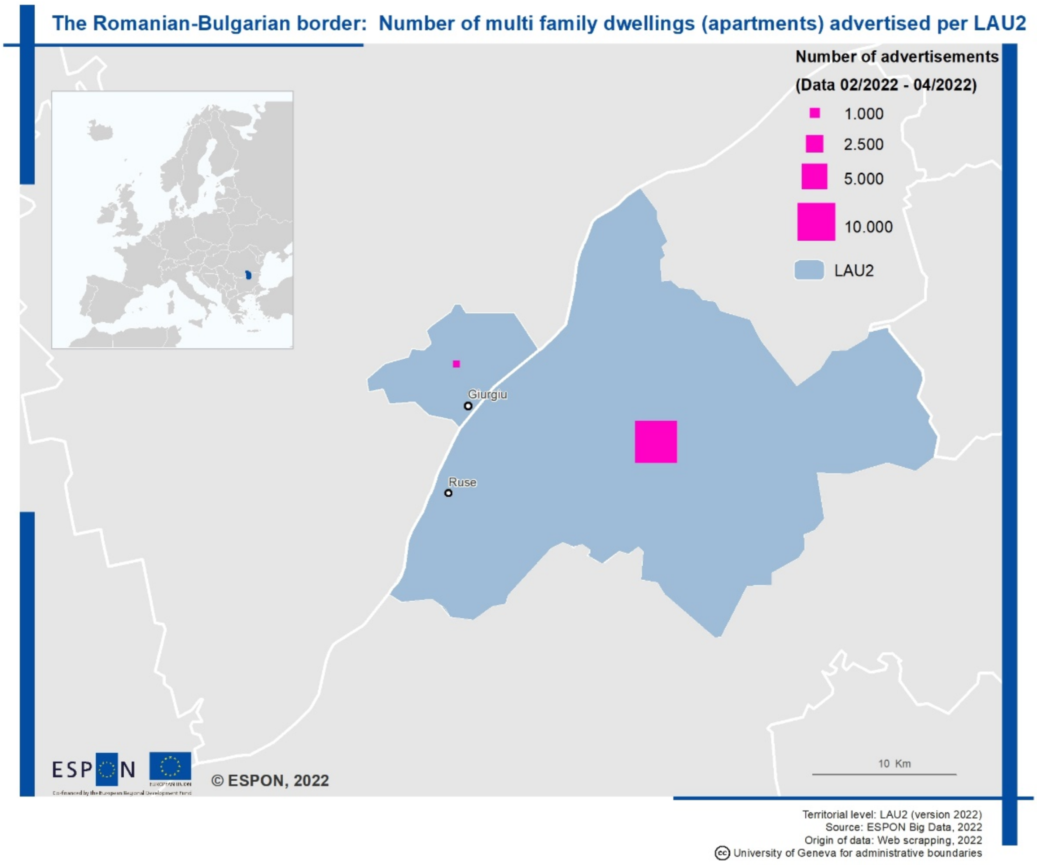


Figure 10: Multifamily Housing Type

Indicator and data

The indicator shows the number of valid scraped advertisements for multifamily dwellings (apartments) aggregated at LAU2 level. It includes both rental and buying advertisements and requires homogenising the housing typologies, which are slightly different in each country.

Trends and patterns

Within the duration of the web scraping, a total of 914 advertisements for multifamily housing types have been advertised in Bulgaria and 77 in Romania. In Bulgaria, there are more multifamily units available for purchase than for rent while Romania has more single-family dwellings for purchase on offer.

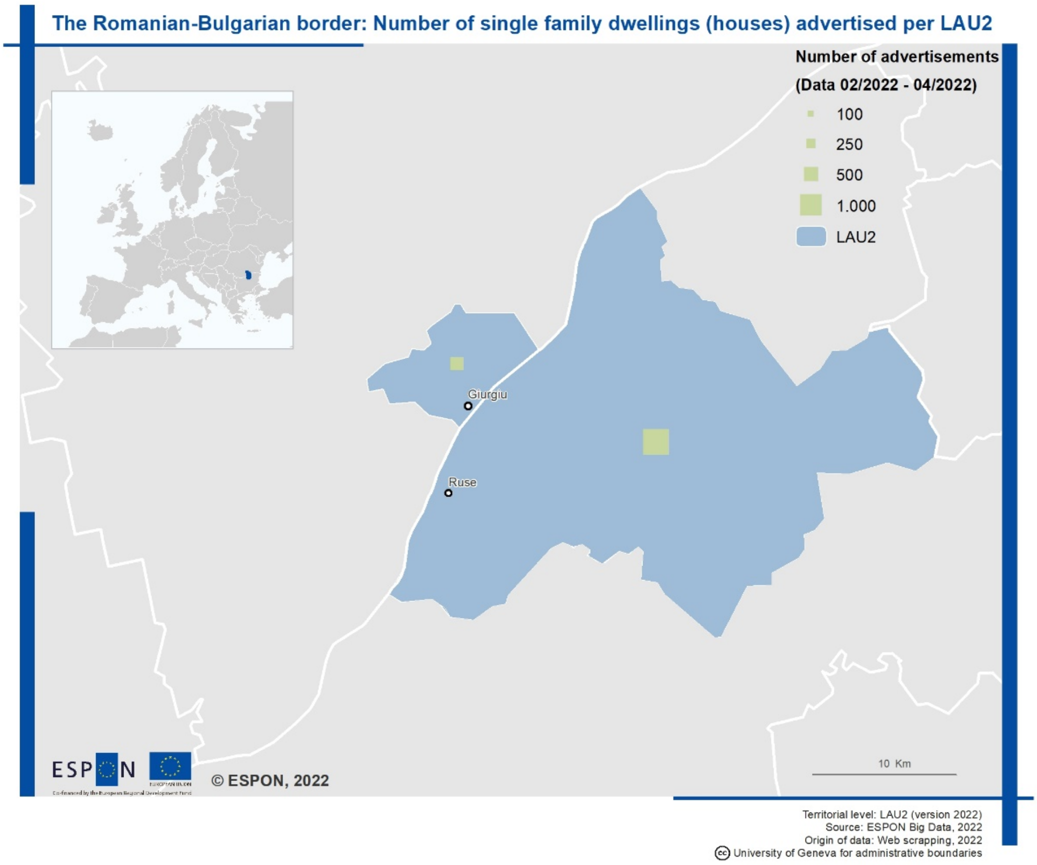


Figure 11: Single-family Housing Type

Indicator and data

The indicator shows the number of valid scraped advertisements for single family dwellings (single houses) aggregated at LAU2 level. It includes both rental and buying advertisements and requires homogenising the housing typologies, which are slightly different in each country.

Trends and patterns

In view of the advertisements for single-family houses, we see less units than in the multifamily segment for Bulgaria. In Bulgaria, a total of 28 advertisements were published in the timeframe scrapped while in Romania, 66 units were advertised. Both countries had more rental options for multifamily than for single-family units.

3.1.1 Interim Conclusions: Offerings and Prices

Given that Ruse is a larger city, it is unsurprising that Ruse has the larger housing market with more offerings found through the web scraping. Overall, we found this market to have the least total offerings collected during the scraping period which corresponds with its position as the more rural, less integrated case study. While a longer scraping period would certainly pick up more adverts, we did not collect enough adverts during the scraping period to develop a strong image and picture of this region’s housing system. Hence, a longer scraping period over multiple quarters would allow us to better understand the dynamics at play within this market.

We do note that Ruse had higher priced residential property for sale while Giurgiu had a more expensive rental market. Overall though, as the web scraping process did not collect enough data or information to provide for a more insightful, in-depth discussion of its housing market, we do not have the information required to provide for a more robust conclusion. One interesting factor to note is how Romania has a more expensive rental sector despite having a significantly lower percentage of households living in its rental sector as compared to Bulgaria’s housing tenure.

In relation to the type of dwellings available, we note that there is a predominance of multifamily dwellings in the more urban centre of Ruse while there is more of a predominance of single-family dwellings in the town of Giurgiu. This observation illustrates a border difference in that Bulgarians in this border region tend to live in apartments while Romanians across the river will more likely live in a detached house.

3.2 Affordability and Profitability

This subchapter details information pertaining to the affordability and profitability of the cross-border housing market found in the web scraping process through the incorporation of several different indicators

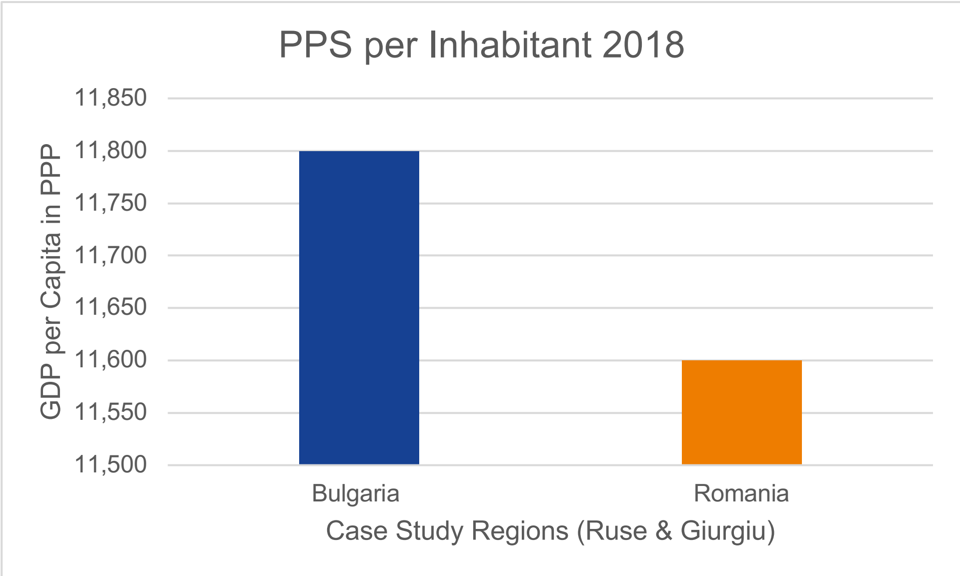


Figure 12 : PPP (at NUTS3)

Indicator and data

This chart displays an indicator measuring income differences on either side of the border for each case study. Data is available as PPP per capita at NUTS3 level for the case studies with the most recent year of complete information being 2018. The PPP for Bulgaria is from **Ruse** while the PPP for Romania is from **Giurgiu**.

Trends and patterns

Both of these regions have low GDP per capita, but locally, Bulgaria has a slightly higher PPS of 11800 compared to 11600 for Romania. Overall, there is not much of a difference in PPP, and both regions are characterised by poverty in local incomes.

3.2.1 Sales Price Affordability

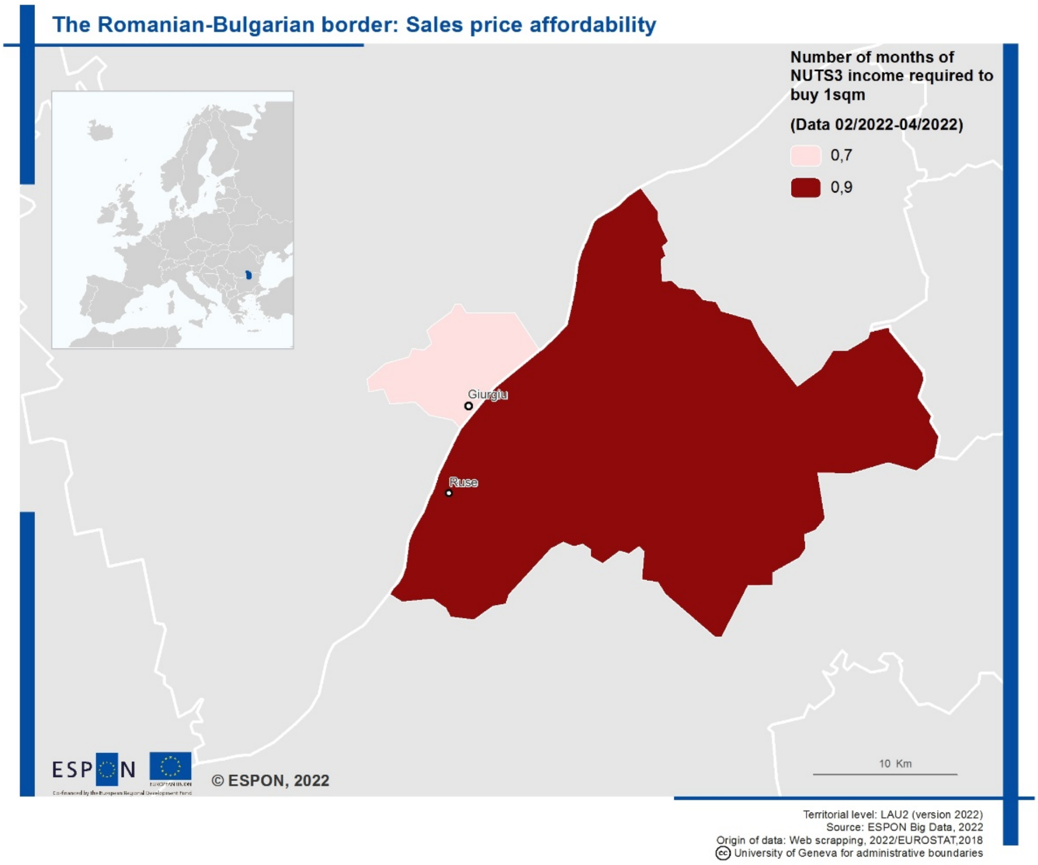


Figure 13: Sales Price Affordability

Indicator and data

This map displays a composite indicator on affordability of buying real estate. The indicator is calculated as the average price per sqm in each LAU2 over the monthly income measured as PPP in the NUTS3 region in which the advertisement is located. The resulting figure is the number of months of income required to buy a sqm of property.

Trends and patterns

Given the small amount of information accessible for this case study, deciphering a trend for sales price affordability is difficult. We do note that Bulgarian are required to slightly work longer in order to afford property in Ruse.

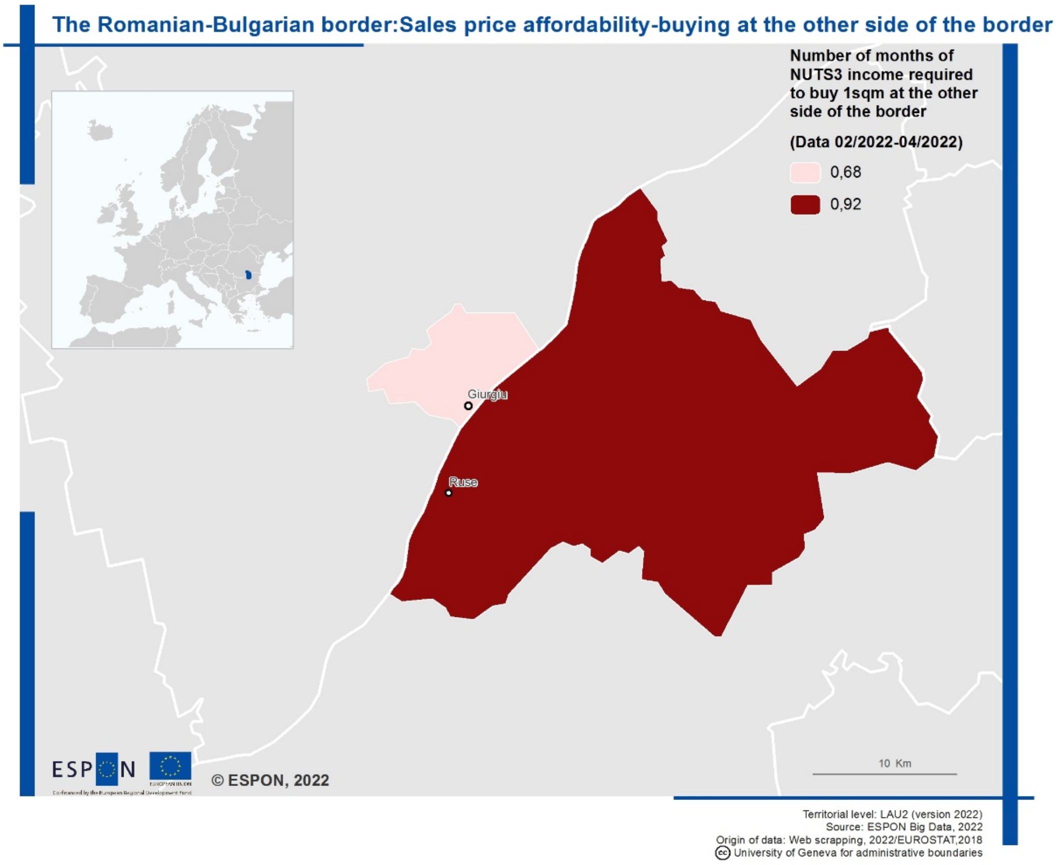


Figure 14: Sales Price Affordability-buying

Indicator and data

This map displays a composite indicator on affordability of buying a dwelling. The indicator is calculated as the average price per sqm in each LAU2 over the monthly income measured as PPP in the NUTS3 region opposite to that in which the advertisement is located. The resulting figure is the number of months of income required to buy a sqm of dwelling on the other side of the border. So here we simultaneously see for example how many months of income from Ruse (BG323) would be needed to buy 1 sqm in Giurgiu and how many months of income from Giurgiu (RO314) would be needed to buy 1 sqm in Ruse.

Trends and patterns

Given the small amount of information accessible for this case study, deciphering a trend for sales price affordability across the border is difficult. We do note that Bulgarian have a slight advantage in purchasing power and would be required to work slightly less than a Romanian in order to purchase the same property in Giurgiu.

Months to buy 1 sqm	Bulgarian income	Romanian income
Bulgarian LAU	0,94	0,95
Romanian LAU	0,66	0,68

- Prices are 2% more affordable on average with a Bulgarian salary
- Prices are 29% more affordable on average in the Romanian side

Figure 15: Mean Difference in Sales Price Affordability

Indicator and data

This indicator is built using the affordability per LAU2 unit considering the income of either sides of the border.

We calculate the average affordability measured as number of months of salary needed to buy 1 sqm of property. Given that we do not have the real average salary figures, we use the GDP per capita PPP as a proxy.

The indicator provides 4 figures with the affordability of property at either country, with the perspective of a person working at either side of the border. In addition, we calculate the affordability variation depending on the country and depending on the income.

Trends and patterns

According to this indicator's calculations, Bulgarian incomes are slightly stronger within the cross-border housing market while the most affordable housing is found in the Romanian market. Given these metrics, we do not see the comparative differences in income or housing price to induce a cross-border housing market.

3.2.2 Rental Price Affordability

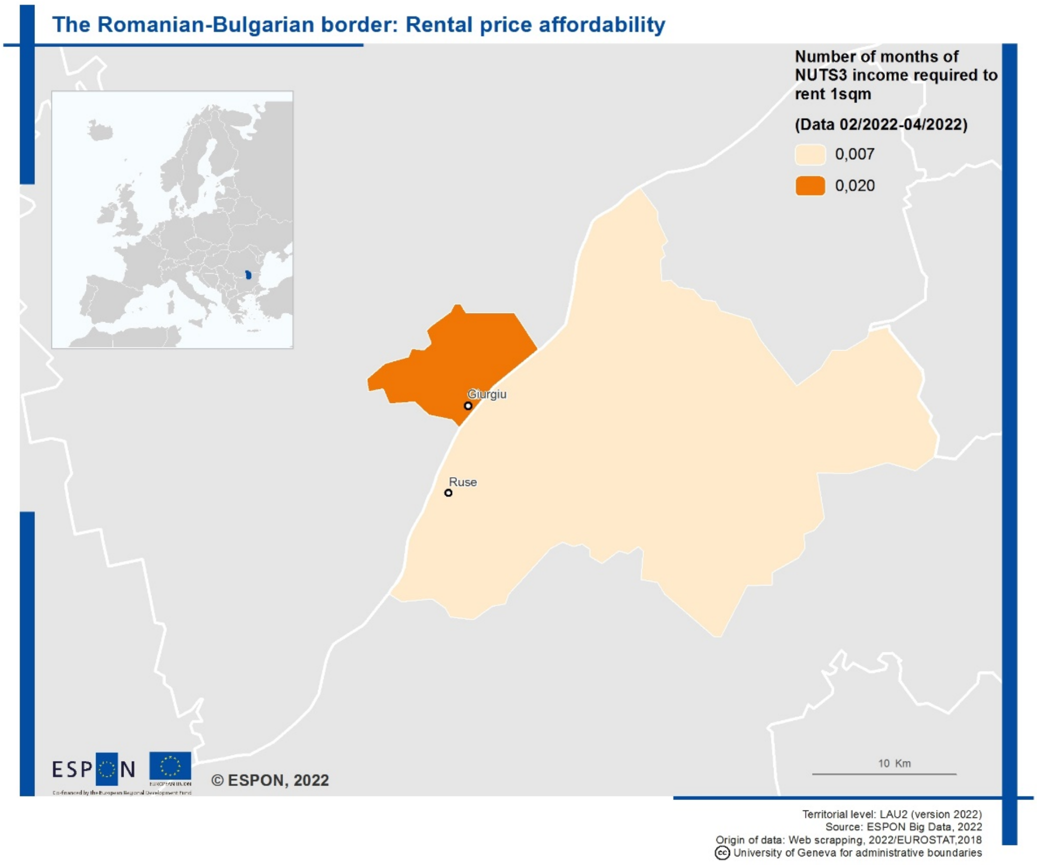


Figure 16: Rental Price Affordability

Indicator and data

This map displays a composite indicator on affordability of renting a dwelling. The indicator is calculated as the average price per sqm in each LAU2 over the monthly income measured as PPP in the NUTS3 region in which the advertisement is located. The resulting figure is the number of months of income required to rent a sqm of dwelling.

Trends and patterns

Given the small amount of information accessible for this case study, deciphering a trend for rental price affordability is difficult. We do note that Romanians are required to slightly work longer in order to afford rent in Giurgiu.

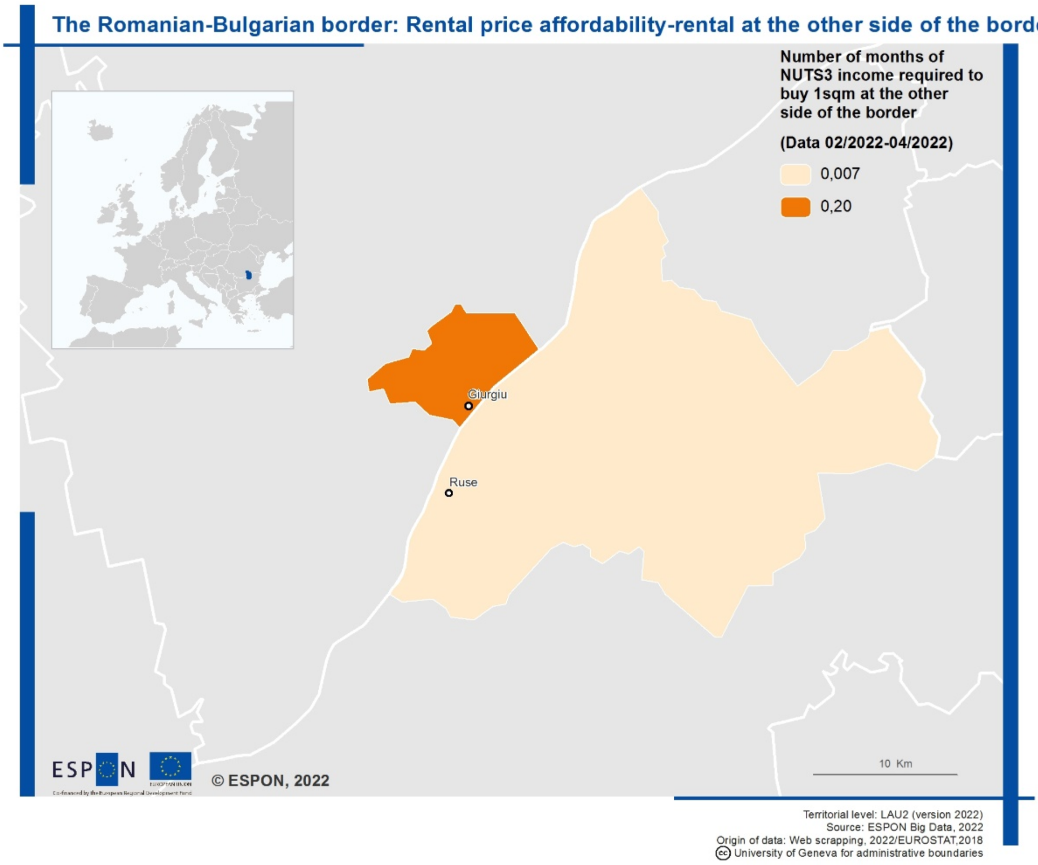


Figure 17: Rental Price Affordability

Indicator and data

This map displays a composite indicator on affordability of renting a dwelling. The indicator is calculated as the average price per sqm in each LAU2 over the monthly income measured as PPP in the NUTS3 region opposite to that in which the advertisement is located. The resulting figure is the number of months of income required to rent a sqm of dwelling on the other side of the border. So here we simultaneously see for example how many months of income from Ruse (BG323) would be needed to rent 1 sqm in Giurgiu and how many months of income from Giurgiu (RO314) would be needed to rent 1 sqm in Ruse.

Trends and patterns

Given the small amount of information accessible for this case study, deciphering a trend for sales price affordability across the border is difficult. We do note that the rental market is weaker in Ruse than in Giurgiu, so Romanians could work less to afford rent in Ruse than to afford rent in Giurgiu.

Months to rent 1 sqm	Bulgarian income	Romanian income
Bulgarian LAU	0,0067	0,0068
Romanian LAU	0,0196	0,0199

- Prices are 2% more affordable on average with a Bulgarian salary
- Prices are 66% more affordable on average in the Bulgarian side

Figure 18: Mean Difference in Rental Affordability

Indicator and data

This indicator is built using the affordability per LAU2 unit considering the income of either sides of the border.

We calculate the average affordability measured as number of months of salary needed to rent 1 sqm of property. Given that we do not have the real average salary figures, we use the GDP per capita PPP as a proxy.

The indicator provides 4 figures with the affordability of property at either country, with the perspective of a person working at either side of the border. In addition, we calculate the affordability variation depending on the country and depending on the income.

Trends and patterns

According to this indicator's calculations, Bulgarian incomes are slightly stronger within the cross-border housing market while Bulgaria also has the most affordable rental housing. Hence, a border effect is not observed on the rental market within this functional cross-border area.

3.2.3 Profitability

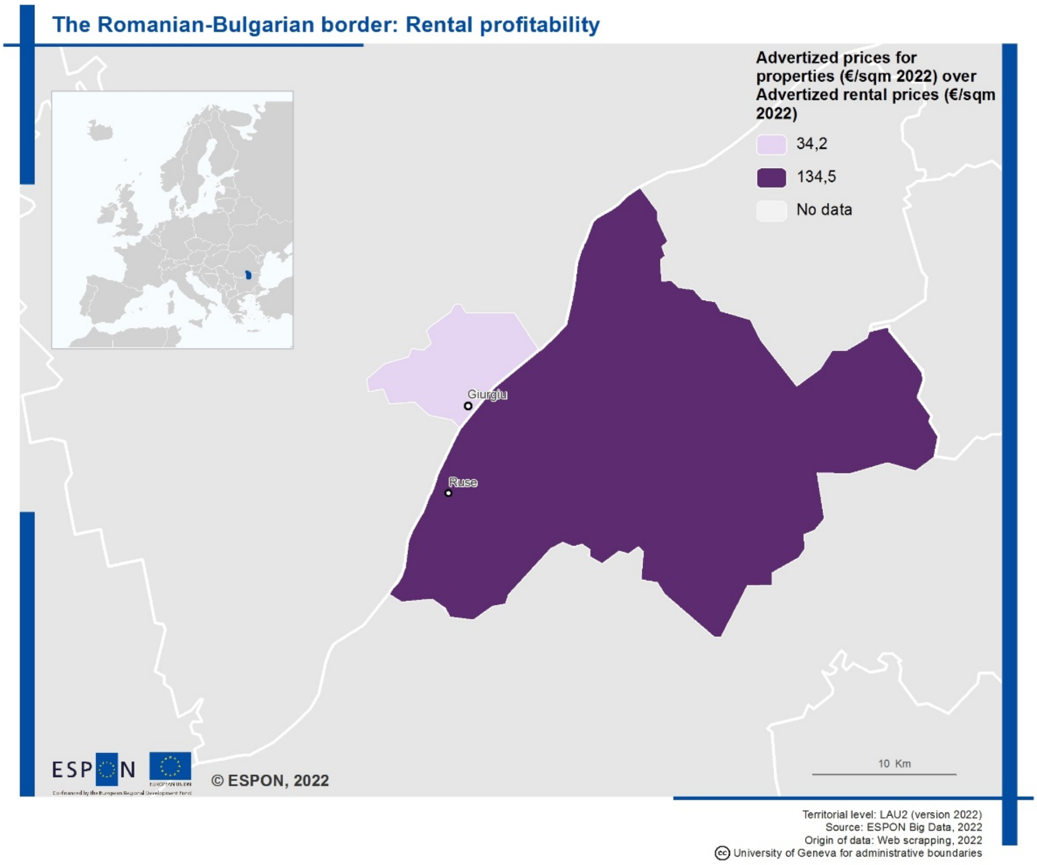


Figure 19: Rental Profitability

Indicator and data

This indicator is a quotient between the average buying price over the average rental price in each LAU2 unit, both prices are calculated in previous indicators. It is available only in LAU2 units where both valid buying and renting advertisements exist.

Given that buying price is much higher than renting (per square meter), this quotient is always a big number and so it is never even (equal to one). To interpret the map, we need to compare values across the different LAU2 units: higher values indicate that buying is proportionally more expensive that renting; thus, renting might be a better option. Lower values indicate the opposite.

Trends and patterns

Given the small amount of information accessible for this case study, deciphering a trend for profitability is difficult. In fact, we do not have confidence in ascertaining a trend from this indicator as there is not enough information from the data to glean a pattern in.

3.2.4 Interim Conclusions: Affordability and Profitability

There are very small differences in affordability across this border region as local incomes are similar in strength while the price of housing is relatively affordable for both local populations. Overall, we do not see a border effect on sales price affordability or rental price affordability as there is not an economic incentive to migrate as detailed by the data that we found.

While the mean difference in sales affordability for this region does offer a reason for why Bulgarians might choose to buy in Romania (cheaper housing), the critical mass nor other reasons required to push households to migrate has not yet materialised. In terms of future study, this finding provides a basis for how housing should be treated as a cross-border issue and that the phenomena of cross-border housing markets may emerge in places like Ruse and Giurgiu.

Regarding profitability, an interesting finding from the data shows how it can be potentially more profitable to rent in Ruse. This reinforces an idea observed across this case study and the Slovakia-Austria case study that private rental sectors are growing in post-Soviet countries and that there is a market and future need to provide a larger private rental sector as young households or lower income households cannot immediately afford to purchase their home.

3.3 Advertisement Duration

This subchapter details information pertaining to duration of how long the advertisements were posted and adds a temporal dimension to the indicators and analysis.

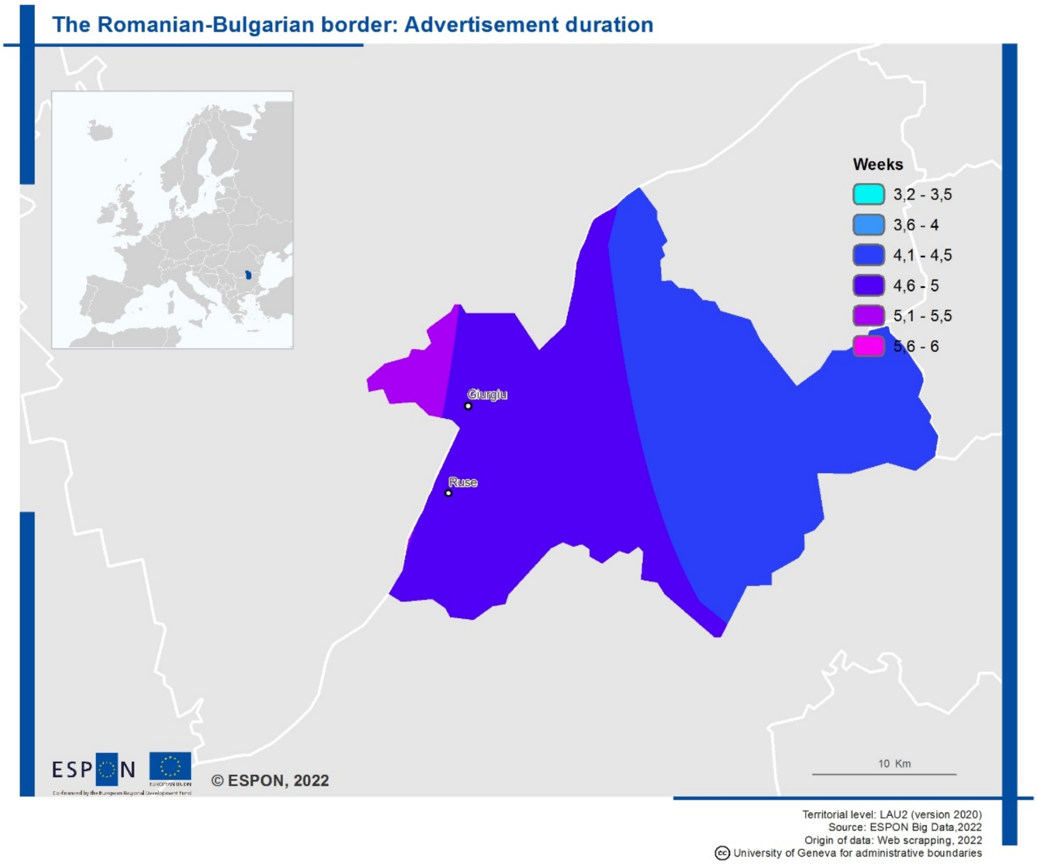


Figure 20: Length of Advertisement Posting

Indicator and data

This map shows average length of the scraped advertisements. It is computed by counting how many times each advertisement appears during the 7 weeks we have scraped data (so it takes a value from 1 to 7). Afterwards, we apply the Inverse Distance Weight (IDW) methodology from ArcGIS toolbox to compute a surface grid to extrapolate the advertisement length in the whole region analysed.

Trends and patterns

Overall, this market is less active than other case studies with the majority of offerings being listed for an average of 4 weeks or longer.

3.3.1 Interim Conclusions: Advertisement Duration

Based on the indicator detailing the length of advertisement posting, Ruse has the most active market within the region illustrating the higher demand to live in the regional city. Giurgiu has a much slower market taking on average six weeks or longer to turnaround an advert. One interesting factor is that the fastest advertisement durations were located near the Ruse-Giurgiu Friendship Bridge. This finding details how the land and property nearest the bridge on the Bulgarian side may in fact hold some sway over market activity if not in swinging market prices.

4 Discussion & Conclusions

This case study has focused on the twin city region of Ruse and Giurgiu and has specifically investigated if a cross-border housing market is manifesting itself across the region.

Overall, there is no border effect evident as there is no economic incentive inducing a cross-border migration for households on either side of the border. The entire market itself cannot be analysed coherently due to **a lack of advertisements found within the case study**. Hence, there is no evidence of a cross-border housing market evolving as there are **no regional imbalances in economic purchasing power to take advantage of.**

Box 2: Ruse-Giurgiu Household Scenario Reflection

Andreea and Viktoria eventually find a suitable apartment in Ruse city centre. During the purchasing process, the couple faced some difficulty in the bank with Andreea's Romanian background, but eventually these bureaucratic matters were sorted out, and they bought the property they were interested in. Given the difficulties in trying to coordinate her Romanian income and taxes with her Bulgarian home, Andreea is even more motivated to learn Bulgarian and limit the bureaucratic difficulties in her cross-border life. Now that, Andreea and Viktoria are happily living together in Ruse, they have developed new ambitions in opening a café together and growing their life together in Bulgaria without needing to circumvent difficult cross-border arrangements.

Another key determinant affecting the results of this research has been **the impact of Covid-19** on the case study region. Given the unpredictability of the pandemic, all of our results must be considered with regard to its major impact. While research on how Covid-19 has impacted housing trends is still forthcoming, we understand that demand for more rural, single-family houses with greater access to greenspace has been in high demand since the second half of the pandemic as households acclimatised to teleworking and mandatory public health guidelines regarding social distancing. For our focus on this rural border region though, we could not see Covid-19 impacting the housing market except in the possibility that households were less likely to move and migrate due to new border controls and limits on personal freedoms for social distancing standards.

In order to observe more concrete evidence of a cross-border housing market between Ruse and Giurgiu, **further data scraping and communication with local realtors and landlords on housing prices can provide more detail** as to how the housing market functions and whether there is a cross-border dynamic to their housing sectors. Hence the following main takeaways have been summarised below:

- Not many adverts scrapped overall so there was difficulty in confirming trends with confidence (especially on the Romanian side)
- Interesting to see how Ruse has a more expensive market in terms of buying while Giurgiu has a more expensive market is terms of renting
- Similarly, Ruse is less affordable for buying Giurgiu is less affordable for renting, yet renting is more profitable in Ruse than in Giurgiu
- Giurgiu has more single-family dwellings while Ruse has more multifamily dwellings

Overall, **this case study has confirmed that there is no cross-border housing market** as defined in Annex 1: Technical Guidance Document: Ch 2.6. The case study does not match the minimum criteria for an integration of residences or jobs, and we could not identify a dependency of developments in the housing markets on each side of the border being dependent on the other country's developments. Overall, despite being the main border crossing between Romania and Bulgaria, the chances are that the cultural, language and legal differences are too substantial for the region to soon experience further developments of a functional unit. This is confirmed by the research as part of the development of the fiche as well as by the accessibility studies. In terms of housing offers, web scraping needs longer periods to capture the dynamics. However, for a case such as this one, combining web scraping data with accessibility data and traditional statistical data sources helps to identify the reasons for a potential functional cross-border region, despite the general territorial composition allowing for it, and the existence of using the border a resource, to not deepen interrelations.

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