VPLIV DAVČNE NEPREMIČNINSKE POLITIKE IN PRIHODKOV OBČIN NA NOTRANJE SELITVE: ŠTUDIJA PRIMERA ZA MESTNO OBČINO LJUBLJANA

IMPACT OF THE REAL ESTATE TAXATION AND MUNICIPAL REVENUE ON DYNAMICS OF INTERNAL MIGRATION: CASE STUDY FOR CITY MUNICIPAL OF LJUBLJANA

Petra Janež, Marija Bogataj, Samo Drobne

UDK: 336.226.212:331.556.2
Klasifikacija prispevka po COBISS.SI: 1.01
Prispelo: 30. 7. 2016
Sprejeto: 25. 11. 2016

DOI: 10.15292/geodetski-vestnik.2016.04.644-684
SCIENTIFIC ARTICLE
Received: 30. 7. 2016
Accepted: 25. 11. 2016

IZVLEČEK

Med pomembnimi dejavniki, ki vplivajo na notranje selitve, je obdavčitev nepremičnin. V prispevku obravnavamo vpliv obdavčitve nepremičnin na tokove stalnih selitev med prostorskimi enotami na lokalni ravni. Predstavljen je vpliv spremenjene davčne politike, predvidene s sicer razveljavljenim Zakonom o davku na nepremičnine, na privlačnost in lepljivost slovenskih občin za tokove selivcev. Za namene proučevanja smo razvili prostorski interakcijski model selitev. Poleg davčne stopnje, ki prek stanovanjske rente vpliva na ceno stanovanjskih nepremičnin in prihodek občine, smo v model vključili še druge pojasnjevalne spremenljivke, in sicer: število prebivalcev, čas potovanja, zaposlenost, povprečni bruto osebni dohodek, prihodek občine na prebivalca, stanovanjske površine na prebivalca in povprečno ceno za kvadratni meter stanovanja. Na podlagi razpoložljivih podatkov smo s pridobljenim modelom z vključitvijo davčne stopnje kot odločitvene spremenljivke analizirali vpliv davčne politike na privlačnost občin v ponoru za selivce v Sloveniji in podrobneje v Mestni občini Ljubljana. Analizirali smo tudi spremembe v prihodkih občin iz naslova obdavčitve nepremičnin obravnavanih območij za selivce.

KLJUČNE BESEDE

stanovanjska renta, davek na nepremičnine, cena stanovanjskih nepremičnin, prihodek občine, prostorski interakcijski model, notranje selitve

ABSTRACT

One of the main factors affecting changes in internal migration is real estate taxation. In this paper, we analyse the impact of real estate taxation on internal migration flows of human resources between spatial units at the local level. We address the impact of changed taxation policy on the attractiveness and stickiness of Slovenian municipalities on the dynamics of migration for internal migration flows according to the annulled Real Property Tax Act. To this end, a spatial interaction model for internal migration flows was developed. In addition to the tax rate, which influences municipal revenues and the price of real estate through housing rents, we included other significant explanatory variables in our model. These include population size, distance, employment, gross personal income, municipal revenues, residential area per capita and the average price per square metre of floor space. On the basis of available data and including tax rate as a decision variable in the spatial interaction model, the impact of taxation policy on the attractiveness of municipalities of destination for migration is analysed in more detail in the case study for the Municipality of Ljubljana. Based on available data, we also analysed the changes in municipal revenue brought on by the changes in taxation of real estate in all municipalities in Slovenia for migration flows.

KEY WORDS

housing rent, real estate tax, market value of residential real estate, municipal revenue, spatial interaction model, internal migration

1 INTRODUCTION

In spatial economics, it is an important issue how to attract migration flows to a given local community, for instance, a municipality and how to retain the population in that municipality; see e.g. Tiebout (1956, 1961), Tullock (1971), Chun (1996). Slovenia has no institutionalized intermediate level of government between the state and municipalities. That is why municipalities represent a basic cell for realizing regional development with certain development objectives at state level. The achievement of these objectives is strongly linked to the financing of municipalities, their economic power and stability. The Republic of Slovenia highlights the welfare of each individual as the central objective of social development, whereby changes in economy and society are focused on raising the welfare of current and future generations (the Spatial Development Strategy of Slovenia 2014-2020 (draft), the Ministry of Economy, 2013 and the RS Development Report, the Institute of Macroeconomic Analysis and Development, 2015). Special attention has been given to the projection of demographic trends.

In this paper, we discuss migration flows between municipalities in the Republic of Slovenia. Permanent migration (hereinafter: migration) is a spatial phenomenon, whereby individuals or groups of people change residence (Bole, 2004) between the analysed spatial units (added by authors). Migrations have long-term consequences on the transport policy, infrastructure and other spatial structures. Migrations are strongly linked with the real estate market. Migrations are an important and complex phenomenon and have a significant impact on demographic, economic and wider social development (Bevc, 2000). By applying theoretical and empirical studies of migrations flows, we can explain important consequences of migration flows. Empirical research significantly contributes to a better understanding of these demographic dynamics serving to improve political decision-making connected to activities which affect the physical environment and the management of facilities within this environment. Furthermore, they facilitate discussions about the taxation policy parameters as a potential regulator of city growth. Using various mechanisms of development policies, municipalities or regions can influence the development of their territory and consequently the future demographic dynamics. The term "urban development" refers to changes in settlement conditions and the changing structure of cities in response to economic and social conditions (Drozg, 2008). Spatial development stems from the implementation of several public policies; their impact can be direct (e.g. the construction of transport infrastructure) and indirect (e.g. tax policy measures) (Miklavčič et al., 2016). Municipalities are obligated to manage their revenues in such a way as to offer public services and take care of spatial development (Pichler Milanović et al., 2008). Municipalities should create conditions that will ensure a high-quality living environment and establish an attractive business environment (Nared et al., 2016).

Migrations can be analysed using gravity models (GM) or spatial interaction models (SIM). The first mathematical model of migrations, which was based on the physical law of gravitation, was published by Young (1924). Wilson (1971, 1974) extended the gravity model into a spatial interaction model, which was then generalized by Cesario (1973, 1974). Lowry (1964) was one of the first to present the possibilities of a dynamic treatment of this type of gravitation, whereby employment and construction of residential buildings were core issues. These types of models are used to analyse the impact of variables in the origin of migration flows where stickiness is examined, and on migration flows in the destination, where we examine attractiveness and the impact of distances between the origins and the destinations on migration flows (Haynes in Fotheringham, 1984; Fotheringham and O'Kelly, 1989; Sen and Smith, 1995).

Chun (1996) argues that migrations are a means of achieving both economic efficiency and equity. Anjomani (2002) notes that local authorities are becoming increasingly aware of the importance of migrations for achieving the development of urban areas and social prosperity. Using the gravitation model, municipalities can make better political decisions and create new possibilities for growth by implementing more suitable local policies, and therefore increasing the prosperity of its inhabitants and users of their services. One of the better political decisions that can be made by municipalities is implementing a more appropriate taxation strategy, which is reflected in the social and economic effectiveness of municipalities. This raises the question of whether a different real estate taxation policy would affect immigration and/or emigration and consequently the technical increase of population in municipalities.

The purpose and aim of our research is to present a spatial interaction model for studying the stickiness of the municipality of origin and the attractiveness of the municipality of destination with regard to the migration between municipalities in Slovenia. Using this model, we can analyse the impact of changed municipality revenues and changed prices of real estate (arising from the change in real estate taxation) on the attractiveness of the municipality of destination. In the following, we first define the problem by expounding on internal migrations and their treatment in SIM, which was developed by Drobne and Bogataj (2005, 2009, 2011, 2013) as well as Bogataj et al. (2004) and Bogataj and Bogataj (2007, 2011). They wrote about the impact of the spatial policies and investments in better transport infrastructure on migration flows. The next part deals with defining municipal revenues and the price of real estate in terms of changed taxation. In the third section, we present the methodology of research, i.e. databases and the working method. The results of assessing the parameters of migration flows between municipalities and the changes in municipal revenue brought on by the introduction of the new real estate tax are presented in the fourth section. In the final section of the paper, a case study is presented about the impact of the changed tax rate on real estate in the Municipality of Ljubljana (MOL) and on its attractiveness for migrants. The paper concludes with a discussion and offers suggestions on future work.

2 PRESENTATION OF THE PROBLEM

2.1 Migration and the spatial interaction model

Greenwood and Hunt (2003) prepared an overview of empirical studies from Ravenstein (1885, 1889) onwards. The authors concluded that many migrations in the past were directed towards larger urban centres, which resulted in the growth of towns and urbanization during the industrialization period. Shuai (2012) notes that commuting in particular has a positive and significant impact on migration flows. An increase in the cost of commuting or a reduction in the cost of migration tends to increase the likelihood of a commuter deciding to move. Whereas lower costs of migration may attract city residents to nearby locations outside of the city, lower costs of commuting and less expensive real estate typically encourage people to commute. Similar conclusions were drawn by Lundholm (2010), who argues that the willingness for longer commuting creates the conditions for deciding whether or not to migrate. It can therefore be concluded that better conditions for commuting can both impede and facilitate migrations (Drobne, Rajar in Lisec, 2013): an example of speeding up migration flows would be the migration from urban to rural areas (suburbanization) and commuting to work on a daily basis, as already evident in the municipalities located in the suburbs of Ljubljana (Ravbar, 2005).

Bevc and Uršič (2013) looked at national statistics and found that the number of migrations within Slovenia increased absolutely and relatively during the 1995-2007 period. Despite methodological and substantive changes in the migration data capture in 2008 (Slovenian Statistical Office – SURS, 2009), statistics show steadily increasing inter-municipal migrations in Slovenia from 2009 onwards as well. The authors found that the average age of migrants has risen from 28 years in the 1990s to 30 years in the 2001-2007 period. During the 2008-2011 period, it had already risen to 34 years (Bevc in Uršič, 2013). This points to the fact that the changes in the retirement policy and an aging population are also changing the intensity of commuting flows and migration flows.

Bogataj, Drobne and Bogataj (1993), Bogataj (2000), Bogataj and Drobne (2005), Drobne and Bogataj (2005, 2009, 2011), Drobne, Bogataj and Bogataj (2008), Drobne and Bogataj (2013), Drobne, Rajar and Lisec (2013) and Drobne (2014) studied migration and commuting (with the use of SIM) as a substitute and a complement to migrations over different spatial structures in Slovenia and Europe. Spatial interactions are mutual influences between locations representing movement or communication over a geographical space. Spatial sciences are mostly concerned with interactions resulting from human activity, namely migration, daily and weekly commuting, daily and weekly migration and commuting flows of high school and college students, flows of information or goods and the like (Fotheringham and O'Kelly, 1989; Nijkamp and Reggiani, 1992). The study of migration between municipalities and regions therefore only constitutes a segment within a broader framework of examination. The SIM differ according to mathematical formulation, restrictions, data source, calibration, convergence criteria and other parameters. The selection of and change in the type of SIM must be fit for purpose (Horak, Ivan and Tesla, 2014; Drobne, 2016).

According to Wilson (1971), spatial interaction models are of long-term importance for studies in social sciences, not only in geography, but also in economics and sociology and many other sciences dealing with geographical space. By using SIM, we can analyse the impact of many explanatory variables on migration flows and daily or weekly commuting and the interrelations between them. Prashker et al. recognized the following groups of factors, which influence the choice of residence (Prashker, Shiftan in Hershkovitch-Sarusi, 2008): (a) residential unit characteristics (size and type of housing, possibility of parking, sound and heat insulation, view, building age, maintenance and other special characteristics; (b) location characteristics (characteristics relating to the quality of living in a given environment; the surrounding area affects the quality of residence and the way of life in the household; examples of such attributes are the socio-economic status of the area, education structure, the degree of security, opportunity for shopping and vacation, traffic, noise, air pollution and others); (c) accessibility characteristics (accessibility to various urban/rural/intermediate functions and activities that are interesting for individuals, such as work, shopping and vacation; commuting is one of the most frequently examined activities in professional literature; therefore, work accessibility is supposedly (ibid.) the most important aspect when choosing the location of residence; (d) individual characteristics (age, children, marital status, education, income, owning a means of transport and other characteristics).

Using the SIM model, we analysed the factors which affect internal migrations in Slovenia. We paid special attention to the impact on intensity of migration flows arising from changed municipal revenues and the impact of taxes on real estate prices because of the changed taxation of real estate in Slovenia.

2.2 Municipal revenue

In spatial economics, one of the main issues – from the pioneering work of Tiebout (1956) onwards – has been the distribution of households on the urban real estate market (Ferreira, 2010). Tiebout (1956, 1961) examined the impact of commuting of individuals on the design of fiscal policy in local communities (municipalities). In his model, individuals are moving between areas freely and without cost until they can find an area with the optimal combination of attainable public goods (Hill, 2006). However, attainability also depends on the amount of real estate taxation. Tullock (1971) expanded Tiebout's theory by analysing different locations and taxation in each local community. He found that the differentiated local taxation systems, all other things being equal, influence migration flows. Cebula (1974, 1990, 2002, 2009) in his empirical studies and also with Curran (1978) tested the Tiebout-Tullock hypothesis regarding the impact of local fiscal policy on migration flows. He confirmed the affects of the real estate tax on migration (ibid.). Cebula found that an increase of the real estate tax in state *j* by *p* % decreases migration flows in *j* within the whole analysed economic area (USA) by $(1 + p)^{-0,00008}$. Therefore, an increase of 10 % would mean just under 8 migrations less per 1 million migrants, which is an insignificant amount. Unfortunately, Cebula only studied change points, and not changes in the migration from origin to destination; therefore, the determination coefficient in his analysis is low. The proposed SIM in our analysis eliminates that weakness.

Municipal revenues are comprised of various sources (article 6 and 7 of the Financing of Municipalities Act (the Official Gazette of the Republic of Slovenia no. 123/2006, 57/2008, 36/2011 and 14/2015 - ZUUJFO)): "The sources of financing for municipalities are the revenues of the municipal budget from real estate taxes, water vessel tax, real property transaction tax, inheritance and gift tax, gaming tax and other taxes, in accordance with the law governing a particular tax. Financial resources for the municipalities also include revenues from voluntary contributions, levies, fines, concession fees, payment for local services and others in accordance with the legislation that governs individual levies or in accordance with regulations adopted pursuant to law. Municipal revenue also includes the material and financial assets of the municipality, received donations and transfer revenues from the state budget and resources from the European Union funds. Financial resources also include revenue from income tax and other taxes, which are part of the state budget revenue in accordance with law for each financial year in the amount of the total municipal expenditure. One of the tax revenues is tax on property, which is a real property tax comprising of tax on real estate (property tax and the building land use charge) and other taxes for the use of goods and services, including fees for the maintenance of forest roads; see also data of the Ministry of Finance (2016). Our research focuses only on the revenues from property tax, the building land use charge and fees for maintaining forest roads, which will be replaced by the revenue from the new real estate tax. This new estate tax according to the annulled Real Property Tax Act (Official Gazette of the Republic of Slovenia no. 101/2013 and 22/2014 – judgment of the Supreme Court) would replace the current property tax, the building land use charge and fees for the maintenance of forest roads. Due to the current inconsistencies in real estate taxation, the Slovenian government is preparing a new system of real estate tax, which will replace the current levies and overcome the weaknesses existing under the current taxation system. Weaknesses of the current taxation system are: disparities in the taxable objects, disparities in the taxpayer criteria, non-market methods of determining the tax base, different ways of determining the

tax base and the tax amount and differences in identifying tax exemptions and relief. The property tax and the building land use charge are often the subject of complaints; the municipal ordinances are often subjected to constitutional complaints and consequently annulments. Some of the real estate is not even subject to taxation because the municipal databases are incomplete and not up to date. It follows from the above that the current system does not provide sufficient tax revenues to municipalities and does not provide taxation which would have an added affect on the efficiency and stability of municipalities. Filippakopoulou and Potsiou (2014) in their study of real estate taxation in Greece came to the same conclusion as the authors of the new real estate tax in Slovenia, namely that the real estate tax will only be equitable if and when the tax base is equal to the market value and/or the value based on mass appraisal and all real estate becomes subject to taxation. Režek (2004) argues that the introduction of a new real estate tax requires a clear-cut understanding of reasons, objectives and the manner of introduction as well as prior knowledge, estimation and initial guidance of their effects and methods of their subsequent regulation. He emphasises that this is important in order to achieve the necessary degree of the political and social justification and efficiency of the new tax. In fact, one of the basic rights of taxpayers is their prerogative to demand clarity of governmental objectives and to monitor the implementation and fulfilment of those objectives. It is necessary to know how the new legislation will influence the lives of ordinary citizens, which includes examining their level of satisfaction within their community and their willingness to continue living in that same community. New tax legislation will influence the municipal revenue as well as the prices of real estate. Therefore, the paper focuses on the impact of simultaneous changes in the municipal revenue and prices of real estate on the stickiness in the origin for migration flows and on the attractiveness in the destination for migration flows.

We specifically address migration flows to the Slovene capital, which is mentioned in various projects regarding the international role of Slovenian cities (ESPON 1.1.1., 2005). Ljubljana is considered a metropolitan urban area and a globally relevant centre despite its relatively small size. In our case study, we analysed the impact of changes in the revenue of the Municipality of Ljubljana (MOL) on migration flows to MOL if MOL replaced the current revenue from property tax, the building land use charge and fees for maintaining forest roads with the expected revenue coming from the new real estate tax according to the annulled Real Property Tax Act (the Official Gazette of the Republic of Slovenia no. 101/2013 and 22/2014 – judgment of the Supreme Court) and established a tax rate that would differ from the other municipalities in Slovenia. We tested the following hypothesis:

Hypothesis 1: An increase/decrease in the revenue of the Municipality of Ljubljana (MOL) arising from the changed taxation of residential real estate would (with the revenues of all other municipalities remaining unchanged) cause an increase or a decrease in the migration flows to MOL.

2.3 Prices of residential real estate

The value of urban land is derived from the availability of public utilities and other town and city infrastructure as well as investments in the local community, which is based on the theory of urban rent, presented in detail by Marx in his work Capital, Volume III/ Section VI *(Das Kapital, Kritik der politischen Ökonomie, Engels, F. (Ed), 1894)*, which was later expanded by Isard (1956), Alonso (1964) and other spatial economists. Their opinion regarding the impact of infrastructure and investment on

rent and value of land in a local community was shared by political economist Henry George (1948) in his work Progress and Poverty. According to Wang et al. (2015), the increased value of land on account of investments should be reinvested in the local community through land taxation. This argument was proved by Bogataj (1982) in her dissertation titled "Rent as a Growth Regulator of Urban Agglomerations" by developing a model and numerical examples regarding the correlation between investments in public utilities and capturing the rent differentials. For example, public investments in transportation infrastructure add important value to neighbouring private lots by improving their accessibility. This type of public investment with its positive externalities tends to increase the value of land (Drobne, Bogataj and Lisec, 2008; Lisec and Drobne, 2008); real estate taxation by the government is therefore justifiable.

Tiebout's model of the impact that fiscal policy has on individuals in a local community (Tiebout, 1956) was expanded by Oates (1969), Hamilton (1975, 1983), Fischel (1975) and Blake (1979). These authors stressed the advantages of real estate tax, which is returned back to the inhabitants through investments in the local public services and is reflected in the capitalized value of real estate. The capitalization of tax in the value of real estate was also empirically proven by Palmona and Smith (1998) as well as de Bartolomé and Rosenthal (1999). Another important study is that of Haughwouta et al. (2004), where Tiebout-Oatesa's concept (Edel and Sclar, 1974) was transformed into the Haughwout-Inman model, which examines the correlations between municipality revenue, tax revenue, tax rate, non-tax revenue and the price index of local public services. Their model was expanded by Skidmore, Reese and Kang (2012) by including tax competition between different areas. Among newer studies, it is worth mentioning the study of Banzhaf and Oates (2013), which confirms that the capitalization value consists of not only paid real estate tax but also the public debt for financing municipalities. They analysed previous studies regarding the capitalization of real estate tax into the value of real estate and found that Leed in his study from 1985 was the only one who did not find any evidence of the mentioned capitalization of real estate tax into the value of real estate. England (2016) reviewed the literature dealing with the taxpayers who actually bear the economic burden of a real estate tax levied on a rental property. He concluded that owners (landlords) can shift property tax onto renters (tenants), but only when renters are willing to pay for the goods and services offered by their local communities and financed by real estate tax (ibid).

Market value of real estate reflects the expected benefits of real estate use. Glaeser (1996) showed that real estate tax also motivates short-term oriented decision makers in providing better local services. Real estate tax therefore encourages local governments to make larger investments in more favourable future use of real estate, thereby providing financial benefits or better living conditions for taxpayers (and hence voters). Due to the differences in local services that benefit real estate use, real estate reaches different values wherein real estate tax is also capitalized. Accordingly, different taxes in local communities can change migration flows. In this paper, we developed a model, which enables us to study and evaluate the impact of the tax rate on the capitalization rate, which together with residential real estate rent influences the price of real estate. We tested the following hypothesis:

Hypothesis 2: A decrease/increase in the tax rate of residential real estate in MOL would cause (through the effects of real estate prices) an increase/decrease in the immigration to MOL, assuming that the tax rate in other municipalities remained the same.

3 METHODOLOGY

3.1 Data bases

The data about migration between Slovene municipalities was acquired from the Statistical Office of the Republic Slovenia (SURS). They also provided the data about the inhabitants in the municipality, employment in the municipality, gross personal income in the municipality and usable residential area in square metres. The data on municipal revenue was acquired from the Ministry of Finance of the Republic of Slovenia (MFRS) and the data on the average price per square meter of residential units in the municipality was acquired from the Database of the Surveying and Mapping Authority of the Republic of Slovenia (GURS). The data on a time-spending distance as the fastest travel time by car between the municipality centres of Slovenia was summarized from Drobne and Bogataj (2011). The analysis was performed for the data from 2011. Outdated data present the main limitation of our research, whereby the main contribution is a spatial interaction model, which is presented later.

3.2 Spatial interaction model

We analysed the impact of factors in the origin (stickiness) and destination (attractiveness) on migration flows between municipalities of Slovenia using the Spatial Interaction Model – SIM (Drobne and Bogataj, 2011):

$$S_{ij} = k\, K(c_{ij})^{\beta} \prod_r K(g)_i^{\gamma(g)}\, K(g)_j^{\alpha(g)} \tag{1}$$

where S_{ij} signifies the estimated intensity of the migration flow (estimate number of migrants per year) from municipality i to municipality j; k is the proportionality constant of the model; $K(c_{ij})$ is the coefficient of the travel time by car between the municipality of origin i and municipality of destination j; $K(g)_i$ and $K(g)_j$ is the coefficient of the analysed independent variable g in the origin i or in the destination j; coefficient of variables is the ratio between the level of variables in the analysed spatial unit (in our case in a municipality) and the average of variables in the analysed spatial area (in our case in Slovenia); the coefficients of analysed variables are explained in Table 1.

The model calibration (1) was performed using the SPSS 23.0 computer software and the OLS method (Ordinary Least Squares Regression). The effects on internal migrations between Slovenian municipalities were estimated through a regression analysis using regression coefficients; regression coefficients β were used to measure the impact of the distance between origin and destination, regression coefficients $\gamma(g)$ were used to measure the stickiness of coefficients of the analysed variable in the origin, $K(g)_i$, regression coefficients $\alpha(g)$ were used to measure the attractiveness of coefficients of the analysed variable in the destination, $K(g)_j$. In the case of a positive estimated regression coefficient, i.e. an exponent in the potency model (1), the impact of variables on migration flows is said to be positive. In the case of a negative exponent in the potency model (1), the impact of variables on migration flows is said to be negative.

The spatial interaction model (1) can be written as:

$$\begin{aligned} S_{ij} = k\, K(c_{ij})^{\beta}\, & K(POP)_i^{\gamma(POP)}\, K(POP)_j^{\alpha(POP)}\, K(ZAP)_i^{\gamma(ZAP)}\, K(ZAP)_j^{\alpha(ZAP)} \cdot \\ & \cdot K(BOD)_i^{\gamma(BOD)}\, K(BOD)_j^{\alpha(BOD)}\, K(V)_i^{\gamma(V)}\, K(V)_j^{\alpha(V)} \cdot \\ & \cdot K(POB)_i^{\gamma(POB)}\, K(POB)_j^{\alpha(POB)}\, K(STP)_i^{\gamma(STP)}\, K(STP)_j^{\alpha(STP)} \cdot \end{aligned} \tag{2}$$

Table 1: The variables analysed in the spatial interaction model (1)

Sign	Variable	Definition*	Source
S^*_{ij}	Number of migrants from the municipality of origin *i* to the municipality of destination *j*	Number of migrants from the municipality of origin *i* to the municipality of destination *j*	SURS
S_{ij}	Estimated intensity of migration flow from municipality *i* to the municipality of destination *j*	Estimated number of migrants from the municipality of origin *i* to the municipality of destination *j* based on the calibrated model (1)	Own calculation
$K(c_{ij})$	The coefficient of the time-spending distance as the fastest travel time by car between the centre of the municipality of origin *i* and the centre of the municipality of destination *j*	The quotient of time-spending distance as the fastest travel time by car between the centre of municipality of origin *i* and centre of the municipality of destination *j* and the average time-distance of all interactions in Slovenia	(Drobne and Bogataj, 2011)
$K(POP_o)$	The population coefficient in the municipality	The quotient between the population in the municipality and the average population of a municipality in Slovenia	SURS
$K(ZAP_o)$	The coefficient of employment in the municipality	The quotient: ((the number of employed people in the municipality/active population in the municipality) / (the number of employed people in Slovenia/active population in Slovenia))	SURS
$K(BOD_o)$	The coefficient of average gross personal income per capita in the municipality	The quotient between the average gross personal income per capita in the municipality and the average gross personal income per capita in Slovenia	SURS
$K(V_o)$	The coefficient of the current average net market price per square metre of residential area in the municipality	The quotient between the current average net market price per square metre of residential area in the municipality and the current average net market price per square metre of residential area in Slovenia	GURS
$K(POB_o)$	The coefficient of the municipal revenue per capita in the municipality	The quotient: ((municipality revenue/number of inhabitants) / (revenue of all the municipalities in Slovenia/number of all inhabitants in Slovenia))	MFRS
$K(STP_o)$	The coefficient of the usable residential area expressed in square metres per capita in the municipality	The quotient: ((usable residential area in square metres per capita in the municipality/number of inhabitants in the municipality) / (usable residential area in square metres per capita in all the municipalities in Slovenia/number of all inhabitants in Slovenia))	SURS

Note: All the data is taken from 2011.

3.3 The impact of municipality revenue on migrations

One of the present sources of the municipal revenue are the current real estate levies. If all municipalities increase taxation by the same percentage, i.e. by v %, the coefficient of municipal revenue per capita remains the same, which corresponds to the definition of this coefficient. If only one municipality changes real estate taxation, e.g. municipality j by v %, the coefficient in municipality j changes; consequently, the coefficient in other municipalities changes as well due to the changed average, but the effects here are minor. In the case study (section 5), we analyse the impact of changed real estate taxation on incoming migration flows in the Municipality of Ljubljana (MOL).

The coefficient of municipal revenue per capita in the municipality of destination j is the quotient between the revenue of municipality j per capita and the average revenue of all municipalities in Slovenia: $K\left(POB\right)_j = \frac{\left(POB\right)_j}{\overline{POB}}$. In our calculations, the revenue of the municipality where p percent of inhabitants live, is increased by v % to $POB_j^* = \left(POB\right)_j . \left(1 + \frac{v_j\left(POB\right)}{100}\right)$; while assuming that there are $(100 - p)$ percent of inhabitants living in other municipalities. We also assume that in other municipalities this variable does not change and the average in other municipalities remains the same as before. If the revenue in the municipality of origin does not change, relative changes in the municipality are calculated using a new coefficient (the coefficient during and after the changed revenue) divided by the old coefficient (coefficient before the changed revenue).

3.4 Market value of real estate as capitalization of rent

Taxation of real estate influences the actual market value of real estate. The market value of a residential real estate V is determined by the present discounted value of the stream of rents including the real estate tax. For the sake of simplicity, let us presume that this is a ground rent (perpetual annuity), but similarly, we could also consider the time limitation in the real estate use. If R stands for the annual amount of ground rent, r is the profitability rate and the annual real estate tax is expressed as the percentage u of market value V, and where the usability of a residential unit goes to infinity, the relationship between the market value and the rent can be written as:

$$V = \frac{\left(R - u.V\right)}{r} \rightarrow V.r = R - u.V \rightarrow V = \frac{R}{r+u}, \tag{3}$$

where $r + u$ is the capitalization rate. A more detailed explanation of this assumption is explained by McDonald and McMillen (2011).

3.5 Integration of the taxation model with the model of municipal immigration

Changed proportions in the real estate tax rate between municipalities simultaneously affect the changed coefficient of revenue in the municipality of destination j and the changed coefficient of the current net market price per square metre of residential area in the municipality of destination. The total flows in the municipality of destination j, with the other variables remaining the same, are:

$$S_j\left(\tau_j \geq 0; POB, V\right) = \frac{S_j\left(\tau_j < 0; POB, V\right).\left(100 + v_j\left(POB\right)\right)^{\alpha(POB)}.100^{\gamma(POB)}}{\left(p_j.K\left(POB\right)_j.\frac{v_j\left(POB\right)}{100} + 100\right)^{\alpha(POB)+\gamma(POB)}} \cdot \frac{\left(100 + v_j\left(V\right)\right)^{\alpha(V)}.100^{\gamma(V)}}{\left\{p_j.K\left(V\right)_j.\left(\frac{v_j\left(V\right)}{100}\right) + 100\right\}^{\alpha(V)+\gamma(V)}} \cdot \tag{4}$$

where $v_j(POB)$ is the percentage of the changed value of variable *POB* in *j*, $v_j(V)$ is the percentage of the changed value of variable *V* in *j*. τ is time, $\tau_j < 0$ is time before change, $\tau_j \geq 0$ is time during change and after change.

It is possible to develop an analogous model for forecasting migration from the municipality of origin *i*.

4 PARAMETERS OF THE MIGRATION MODEL BETWEEN MUNICIPALITIES IN SLOVENIA

4.1 The impact of analysed variables on migration flows between municipalities in Slovenia

Table 1 shows the results of the regression analysis of migration flows between municipalities in 2011 in a spatial interaction model (2). The adjusted percentage of the explained variance is 41.1 %, which means that other parameters most likely influence migration flows. Although these parameters are not included in this analysis, it might be useful to explore them in the future. The estimations for most of the regression coefficients in table 2 are statistically significant at $p < 0.0001$, except when it comes to the effects of the gross personal income in the destination and the useful floor space in square metres per capita in the origin. Similarly, the whole model is statistically significant (statistic F is high, $p \cong 0$). All analysed explanatory variables are independent (VIF < 2.5), the model residuals are uncorrelated (Durbin-Watson statistic ≅ 1.8). We checked the normality of residuals (the model is accurate on average) and homoscedasticity.

The comparison of the regression coefficients (RC) in table 2 shows that the time spent on travelling by car from municipalities of origin to municipalities of destination is the most important analysed factor affecting migration (compare the standardized RC). Increasing the commuting time has a negative impact on migration flows ($\beta = -2.388$) or in other words, increasing commuting time decreases migration flows: more migration flows happen on shorter distances than on longer distances.

Other important explanatory variables also include municipal revenue *K*(*POB*) and the number of inhabitants *K*(*POP*). The number of inhabitants in a municipality is directly proportional to the logarithm of the migration flow values in the municipality of origin as well as in the municipality of destination. For instance, the regression coefficient $\gamma(POP) = 1.297$ means that if the correlation between the number of inhabitants in the municipality of origin and the average number of inhabitants in all Slovenian municipalities changes by *p* percent, the migration flow from the municipality of origin will change by a factor of $\left(1 + \frac{p}{100}\right)^{1.297}$. Similarly, the regression coefficient $\alpha(POP) = 1.257$ means that if the correlation between the number of inhabitants of the municipality of destination and the average

number of inhabitants in all Slovenian municipalities changes by p percent, the migration flow into the municipality of destination will change by a factor of $\left(1+\frac{p}{100}\right)^{1.257}$. The impact of the number of inhabitants in the municipality of destination on migration flows ($\alpha(POP) = 1.257$) is very similar to the one in the municipality of origin ($\gamma(POP) = 1.297$). The difference in the regression coefficients of immigrations and emigrations in the linearized model are on the limit of two standard errors of the estimate ($SE = 0.019$).

The impact of municipal revenue per capita, $K(POB)$, is proportional to the logarithm of the migration flow value in the municipality of origin ($\gamma(POB) = 1.420$) as well as in the municipality of destination ($\alpha(POB) = 1.375$). Increasing municipal revenue per capita therefore increases emigrations (decreases stickiness) from the municipality of origin while increasing immigrations (increases attractiveness) to the municipality of destination. The difference in the regression coefficients in the linearized model actually falls within one standard error of estimate ($SE = 0.066$).

Table 2: Results of the regression analysis of migrations between municipalities in Slovenia in 2011 in model (2)

R	0.641		Observation	43,890	
R^2	0.411		ANOVA stat. F	2,354.13	
Adjusted R^2	0.411		ANOVA sig. P	0	
Standard Error	2.636				
Variable (RC)	**Estimate (RC)**	**Std. Error RC**	**Standardized RC**	**t**	**Sig. p**
Intercept	2.12E-21	1.379		-34.519	0
$K(c_{ij})$	-2.388	0.023	-0.405	-105.620	0
$K(POP_i)$	1.297	0.019	0.374	67.555	0
$K(POP_j)$	1.257	0.019	0.363	65.452	0
$K(ZAP_i)$	-0.356	0.061	-0.027	-5.856	<0.0001
$K(ZAP_j)$	-0.345	0.061	-0.026	-5.674	<0.0001
$K(BOD_i)$	-0.501	0.122	-0.017	4.106	<0.0001
$K(BOD_j)$	0.400	0.122	0.014	3.272	0.001
$K(V_i)$	0.875	0.125	0.033	6.980	<0.0001
$K(V_j)$	0.787	0.125	0.030	6.276	<0.0001
$K(POB_i)$	1.420	0.066	0.095	21.596	0
$K(POB_j)$	1.375	0.066	0.092	20.903	0
$K(STP_i)$	0.094	0.040	0.010	2.335	0.02
$K(STP_j)$	0.233	0.040	0.025	5.791	<0.0001

The impact of the current average net market price per square metre of residential area in a municipality, $K(V)$, is proportional to the logarithm of number of migration flows in the municipality of origin, $\gamma(V) = 0.875$, as well as in the municipality of destination, $\alpha(V) = 0.787$. Increasing the current market price per square metre of residential area in a municipality increases emigrations (decreases stickiness) and increases immigrations (increases attractiveness). Here, the differences in the regression coefficients also fall within one standard error of estimate ($SE = 0.125$).

4.2 The change in Slovenian municipal revenues brought on by the introduction of the new real estate tax

The real estate tax is an important source of municipal revenue in most European countries; the same is predicted for Slovenia. We calculated the proportion of current levies for real estate in the current system in relation to all the revenues of municipalities, the proportion of the new real estate tax in new revenues and changes in revenues brought on by changed taxation of real estate. The results are presented in Annex 1 (arranged in order from the municipality with the biggest change to the municipality with the smallest change). The spatial analysis of changes in municipal revenue brought on by the changes in real estate taxation in the analysed areas for migrants is analysed using analytic mapping (see Figure 1).

The results in Annex 1 reveal that only 9 out of 211 municipalities would reduce their proportion of revenue; these municipalities are (arranged in order from the highest to the lowest reduction in the proportion of revenue): Trbovlje, Rogatec, Gorišnica, Hrastnik, Podvelka, Velenje, Šoštanj, Starše, Hajdina (see also Figure 1). As evident from Figure 1, if the tax rate of 0.15 % remained unchanged, the revenues of municipalities in the Western Slovenia region under the NUTS 2 level would generally increase more than the revenues of municipalities in Eastern Slovenia under the NUTS 2 level. Table 3 presents the results of calculations for the Municipality of Ljubljana and the average for all the Slovenian municipalities. The results point to the fact that changes in real estate taxation would cause an overall increase in the revenues of Slovenian municipalities on account of real estate tax per capita by approximately 140 % (from the present €52.75/inhab. to €128.87/inhab.). The changed real estate taxation would cause a 90 % increase in MOL revenue (from the present €174.51/inhab. to €333.33/inhab). An increase in real estate taxation would increase the revenues of all Slovenian municipalities by an average of 14.3 %; specifically, the revenues in MOL would increase by 15 %.

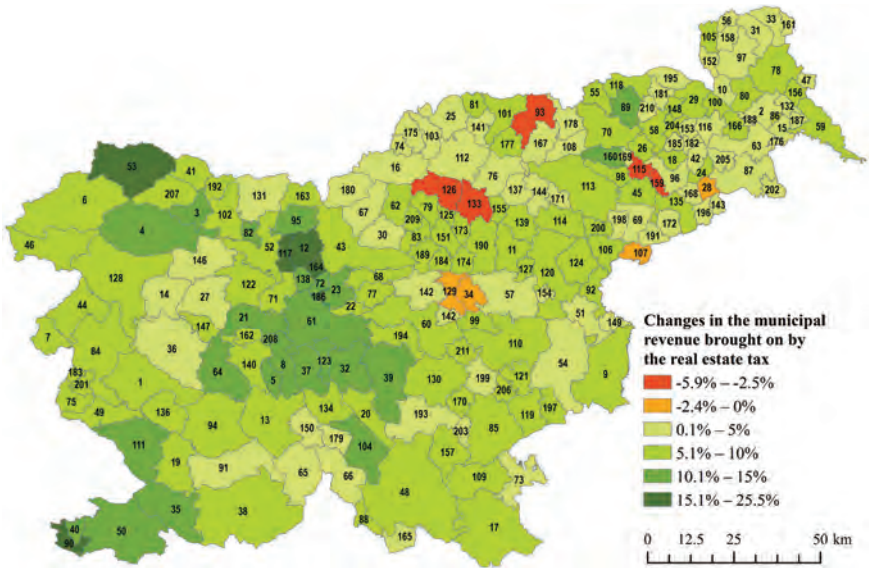


Figure 1: Changes in the municipal revenue on account of the real estate tax, expressed in percentage (the proportion of the municipal revenue from new real estate tax - the proportion of the municipal revenue from the current levies on real estate (proportion of the current municipal revenue from the building land use charge + the proportion of the current municipal revenue from the property tax + proportion of the current municipal revenue from the fees for the maintenance of forest roads); the code list for municipalities is given in Annex 1).

Table 3: Calculation for the Municipality of Ljubljana and the average figures for all Slovenian municipalities

	The Municipality of Ljubljana	**The average for Slovenian municipalities**
Number of inhabitants (the first half of year)	280,140	9,729
Number of emigrants	14,109	414.69
Number of immigrants	13,414	414.69
Current revenue from the building land use charge, property tax and fees for the maintenance of forest roads per capita	174.51 €/inhab.	52.75 €/inhab.
Revenue from real estate tax per capita	333.33 €/inhab.	128.87 €/inhab.
Current municipality revenue per capita	1,039.60 €/inhab.	1,078.10 €/inhab.
New municipal revenue per capita	1,198.42 €/inhab.	1,154.21 €/inhab.

Note: €/inhab. means €/inhabitants

In order to determine the factor of change in the flows into the municipality of destination *j* arising from the changed revenue in the municipality of destination *j*, the coefficient following the change of revenue in municipality *j* must be divided by the coefficient prior to the change of revenue in municipality *j*: $K(POB^*_j)/K(POB_j)$.

5 THE CASE STUDY FOR THE MUNICIPALITY OF LJUBLJANA

5.1 Impact of the change in municipal revenue

Let us assume that MOL decides on a tax rate of 0.15 % (it is currently around 0.09 %), based on the annulled Real Property Tax Act whereas other municipalities decide to adjust the tax rate in such a way as to allow future levies and municipal revenues to stay on the same average level as the current levies and other charges and revenues. The annulled Real Property Tax Act provides a certain amount of leeway with the provision that allows each municipality to decrease or increase the tax rate by no more than 50 %, pursuant to law. By setting the tax rate in MOL at 0.15 %, with the revenues in other municipalities remaining at the same level, the revenue of the Municipality of Ljubljana would be 1.98 (POB^*_j = 1,198.42 €/inhab.), as evident in Table 3. For the MOL analysis, we reproduced the following data: the percentage of inhabitants in MOL: $p_j/100 = 0.14$ and the data from Table 3: POB_j = 1,039.60 €/inhab.; $\overline{POB}$ = 1,078.10 €/ inhab.; POB^*_j = 1,198.42 €/inhab. The ratio between the new and old coefficient of revenue in MOL is 1.13. We are taking into account:

$$\alpha(POB) = 1.375 \Rightarrow \left[\frac{K(POB)^*_j}{K(POB)_j}\right]^{\gamma(POB)} = 1.1297^{1.375} = 1.1825.$$

Assuming that the revenues of other municipalities do not change, we can calculate their average *x* without MOL 0.14 * 1,039.60 + 0.86 * *x* = 1,078.10. This leads us to the average for other municipalities: $\overline{POB}_{\neq j}$ = 1,084.37 € / inhab. or $\overline{POB}^*$ = 1,100.34 € / inhab. This takes into consideration the ratio between the new and the old average income per capita in other municipalities, which influences the changes in the coefficient of other municipalities (all equally) i.e. 0.979788. We are taking into account:

$$\gamma(POB) = 1.420 \Rightarrow \left[\frac{K(POB)_i^*}{K(POB)_i}\right]^{\alpha(POB)} = 0.9798^{1.420} = 0.9714;$$

This leads us to the change in migration flows due to the changed MOL revenue:

$S_j(\tau_j \geq 0; POB) = S_j(\tau_j < 0; POB) * 1.1825 * 0.9714 = 1.1487.$

Therefore, the migration flow in MOL would increase by 14.9 % on account of the increased revenue in the Municipality of Ljubljana.

5.2 Impact of the change in the market value of real estate

When calculating the attractiveness of MOL for migration flows, it is necessary to consider the impact of the changed market value of real estate *V*. Based on the MOL data from Annex 1 and the assumed tax rate of 0.15 %, we calculated the average tax rate for other municipalities as u = 0.09, from the equation: $\left(\frac{27.81}{16.79}\right)u = 0.15 \Rightarrow 1.656u = 0.15$. It means a change in the value of real estate from $V = \frac{R}{r+u}$ to $V^* = \frac{R}{r+1.656u}$. Assuming that the same *r* is considered for all municipalities and we know the average rent in Slovenia $\overline{R}$, whereby the one in MOL is *a*-times the size of the average in other municipalities in Slovenia, then $\overline{R}$ can be written as:

$$\overline{R} = \frac{0.86R_j}{a} + 0.14R_j.$$

Let us assume that the interest rate is 4 % (the Bank of Slovenia, 2015) and $a = 2$. The ratio between the new and the old coefficient of the current net market price per square metre of residential area in MOL is:

$\frac{K(V)_j^*}{K(V)_j} = \frac{4.09}{1.756*(0.57r+0.712u)} = \frac{4.09}{4.139} = 0.988$. We are taking into account:

$$\alpha(V) = 0.787 \Rightarrow \left[\frac{K(V)_j^*}{K(V)_j}\right]^{\alpha(V)} = 0.988^{0.787} = 0.9905.$$

Taking into account $\alpha(V) = 0.787$, the predicted ratio between the new and the old coefficient of current net market price per square metre of residential area in other municipalities is:

$$\gamma(V) = 0.875 \Rightarrow \left[\frac{K(V)_i^*}{K(V)_i}\right]^{\gamma(V)} = \left[\frac{100}{0.14*1*0.656+100}\right]^{0.875} = 0.9992.$$

This leads us to the change of migration flows because of the changed current market price per square metre of residential area in MOL:

$S_j(\tau_j \geq 0; V) = S_j(\tau_j < 0; V) * 0.9905 * 0.9992 = 0.9826.$

Therefore, the migrations flow in MOL would increase by 1.74 % because of a decrease in the current market price per square metre of residential area in MOL.

5.3 Impact of the change in municipal revenue and market value of real estate

Increasing the real estate tax in MOL would cause an increase in MOL revenue and a decrease in the current market price per square metre of residential area in MOL. Therefore, the total change in migration flows in MOL is as follows:

$$S_j(\tau_j \geq 0) = S_j(\tau_j < 0) * 1.1487 * 0.9897(\tau_j < 0) = 1.1369 * S_j(\tau_j < 0).$$

The migration flow to MOL would increase by 13.7 %, despite the higher real estate tax, which decreases the attractiveness of MOL.

6 DISCUSSION

The main contribution of this study is a spatial interaction model for studying the impact of real estate taxation and municipal revenue on the dynamics of internal migration. Table 2 shows the results of the regression analysis of migration flows between municipalities in 2011 in a spatial interaction model (2). The adjusted percentage of the explained variance is 41.1 %, which means that other parameters most likely influence migration flows. Although these parameters are not included in this analysis, it might be useful to explore them in the future. The estimations for most of the regression coefficients in table 2 are statistically significant at $p < 0.0001$, except when it comes to the effects of the gross personal income in the destination and the useful floor space in square metres per capita in the origin. Similarly, the whole model is statistically significant (statistic F is high, $p \cong 0$). All analysed explanatory variables are independent (VIF < 2.5), the model residuals are uncorrelated (Durbin-Watson statistic ≅ 1.8). We checked the normality of residuals (the model is accurate on average) and homoscedasticity.

Despite the limitation in the results relating to 2011, we explain them later in the article. The comparison of the regression coefficients (model exponents) shows that changing all the analysed explanatory variables has a significant impact on migration flows, on the attractiveness of the municipality of destination for migration flows and the stickiness of the municipality of origin. The municipal revenue and the average net market price per square metre of residential area have a significant impact on migration flows in the origin as well as in the destination. In addition to developing a general model (2), we focused on the issue of attractiveness of municipalities as destinations for migration flows. An increase in the municipal revenue and the average net market price per square metre of residential area would cause an increase in migration flows at given parameters because municipal revenue that is invested in public goods typically attracts migration flows more than the actual taxes discourage migration flows. This is particularly true for the Municipality of Ljubljana (see Section 5).

We found that the changes in real estate taxation would cause higher municipal revenue per capita in all Slovenian municipalities by an average of 7 % (from the present €1,078.10/inhab. to €1,154.21/inhab.). The proportion of revenue would increase in most municipalities, more specifically in 202 municipalities, and decrease in 9 municipalities. The municipalities with a reduced proportion of revenue would be Trbovlje, Rogatec, Gorišnica, Hrastnik, Podvleka, Velenje, Šoštanj, Starše, Hajdina (see also Figure 1). As evident from Figure 1, if the tax rate of 0.15 % remained unchanged, the revenues of municipalities in the Western Slovenia region under the NUTS 2 level would generally increase more than the revenues of the municipalities in the East Slovenia region under the NUTS 2 level.

In our case study, real estate taxation was only changed in MOL while assuming that other municipalities would keep the same average level of taxation as the current levies. Increasing the real estate tax in MOL would cause an increase in MOL revenue and a decrease in the current market price per square metre of residential area in MOL, which would cause an overall increase in migration flow to MOL by 15.4 %. Changes in real estate taxation generally have quite an impact on the increase of municipal revenue and a smaller impact on the change in price of residential real estate (individual effects and the impact of municipal revenue and price are explained in more detail when addressing the hypotheses later). Therefore, by increasing revenue gained through real estate taxation, municipalities can increase their economic stability.

In the case study, we confirmed *Hypothesis 1*: an increase/decrease in the revenue of the Municipality of Ljubljana (MOL) arising from the changed taxation of residential real estate would (with the revenues of all other municipalities remaining unchanged) cause an increase or a decrease in the migration flows to MOL. If the tax rate increased by 0.15 % (see also Table 3), MOL would become more attractive for migration flows due to increased municipal revenue. The calculation shows that if MOL increased the municipal revenue from the present €1,039.60/inhab. to €1,198.42/inhab. and municipal revenues in other municipalities remained the same, migration flows in MOL would increase by 14.78 % because of differentiated municipal revenues.

We also confirmed *Hypothesis 2*: a decrease/increase in the tax rate of residential real estate in MOL would cause (through the effects of real estate prices) an increase/decrease in the immigration to MOL, assuming that the tax rate in other municipalities remained the same and that the interest rate of 4 % and the rent in MOL was twice as high as the average in other municipalities in Slovenia. A decrease in the tax rate of 0.15 % and the simultaneous termination of current levies would decrease migration flow to MOL by 1.74 %; however, the combined effect of municipal revenues and real estate prices would actually be positive.

7 CONCLUSION

In this paper, we analyse internal migration flows between municipalities in Slovenia in 2011. The result of our analysis is the SIM, which could be used by municipalities for designing their development planning policy. The originality of this approach comes from integrating the tax model into the previously developed SIM (Drobne and Bogataj, 2005, 2009, 2011, 2013).

In addition to travel time, the dynamics of migration flows are significantly affected by the changes in municipal revenue per capita. More affluent municipalities (with larger per capita income) are more attractive for migrants. Therefore, it might be useful to highlight the importance of fiscal policy. Taxation significantly affects the volume of municipal revenue while providing municipalities with the resources needed to invest in infrastructure and other spatial structures. After all, a successful fiscal policy that leads regions and local communities along the path of balanced and environmentally friendly long-term growth is also important for their harmonious transport and environment-related development (Bogataj, 1982).

Our research shows that migrants respond to changes in the average net market price per square metre of residential area. Based on the fact that migrations are greatly affected by municipal revenue and the average net market price of residential real estate, analysing the taxation of real estate is necessary in order for Slovenian municipalities to achieve sustainable development. The impact of the real estate tax will be visible in the average gross market price per square metre of residential area, which will influence the supply

and demand of real estate and consequently migration flows. In Slovenia, the real estate tax will affect the municipal revenue and, much like the current levies, it will be an integral part of municipal revenue. The amount of municipal revenue influences the supply of public services and goods, the current market price per square metre of residential area, city growth as well as permanent and temporary migration flows and commuting flows. These flows are a measurable indicator of attractiveness and stickiness of municipalities.

In future, it might be useful to eliminate the main limitation of this study and analyse the impact of real estate taxation and municipal revenue on internal migration with more recent data. Furthermore, it might be useful to increase the extent of the analysed explanatory variables affecting the dynamics of migrations. In Slovenia, commuting flows have substituted migration flows in recent years (Apohal Vučkovič et al., 2009; Drobne, Rajar and Lisec, 2013); therefore, it would be useful to study commuting together with migrations in individual municipalities and through different periods. In this paper, we present an in-depth analysis on the impact of fiscal policy on the attractiveness of municipalities. In future, it might also be worth studying the stickiness of municipalities and net technical increase of inhabitants relating to net migrations.

Literature and references:

Alonso,W. (1964). Location and land use. Cambridge, Ma: Harvard University press.

Apohal Vučkovič, L., Kajzer, A., Čelebič, T., Ferk, B., Kersnik, M., Kovačič, S., Kmet Zupančič, R., Kraigher, T., Lavrač, I., Murn, A., Pečar, J., Primožič, S., Zver., E. (2009). Socialni razgledi 2008. Ljubljana, Urad Republike Slovenije za makroekonomske analize in razvoj. http://www.umar.gov.si/fileadmin/user_upload/publikacije/socrazgledi/2009/socialni_razgledi_2009.pdf, accessed 25. 2. 2016.

Anjomani, A. (2002). Regional growth and interstate migration. Social–Economic Planning Science, 36, 239–265.

Banka Slovenije (Bank of Slovenia) (2015). Obrestne mere. http://www.bsi.si/financni-podatki.asp?MapaId=1001#12354, accessed 18. 12. 2015.

Banzhaf, H. S., Oates, W. E. (2013). On fiscal illusion in local public finance: Re-examining Ricardian Equivalence and the Renter Effect. National Tax Journal, 66 (3), 511–540. DOI: https://doi.org/10.17310/ntj.2013.3.01

de Bartolomé, C., Rosenthal, S. (1999). Property tax capitalization in a model with tax deferred assets and standard deductions. Review of Economics and Statistics, 81, 85–95. DOI: https://doi.org/10.1162/003465399767923845

Bevc, M. (2000). Notranje in zunanje selitve v Sloveniji v devetdesetih letih po regijah. Teorija in praksa, 37 (6), 1095–1116.

Bevc, M., Uršič, S. (2013). Selitve kot razvojni dejavnik Slovenije in njenih regij. Ljubljana: Inštitut za ekonomska raziskovanja.

Blake, D. R. (1979). Property tax incidence: An alternative view. Land Economics, 55 (4), 521–531. DOI: https://doi.org/10.2307/3145773

Bogataj, D., Bogataj, M. (2007). Free zones on the EU borders as the response on reduction of daily commuting through the southern EU border. Europa XXI, 16, 109–129.

Bogataj, D., Bogataj, M. (2011). The role of free economic zones in global supply chains - a case of reverse logistics. International journal of production economics, 131 (1), 365–371. DOI: https://doi.org/10.1016/j.ijpe.2010.09.028

Bogataj, L., Bogataj, M., Drobne, S., Vodopivec, R. (2004). The influence of investments in roads and border crossing capacities on regional development after accession. Suvremeni promet, 24 (5/6), 379–387.

Bogataj, M. (1982). Renta kot regulator rasti urbanih aglomeracij. Doktorska disertacija (Doctoral dissertation). Ljubljana: Univerza v Ljubljani, Fakulteta za gradbeništvo in geodezijo.

Bogataj, M. (2000). Mobilistika in prostor. Portorož: Fakulteta za pomorstvo in promet.

Bogataj, M., Drobne, S. (2005). Does the improvement of roads increase the daily commuting? Numerical analysis of Slovenian interregional flows. In L. Zadnik Stirn (Ed.), M. Indihar Štemberger (Ed.), L. Ferbar (Ed.), S. Drobne (Ed.), Selected decision support models for production and public policy problems (str. 185–206). Ljubljana: Slovenian society informatika, Section of operational research.

Bogataj, M., Drobne, S., Bogataj, L., (1993). Market oriented real estate policy as a challenge to sustainable development. In Z. Hajdú (Ed.), Horváth, G. (Ed.), European challenges and hungarian responses in regional policy (str. 436-483). Pécs: Centre for regional studies, Hungarian academy of sciences.

Bole, D. (2004). Daily mobility of workers in Slovenia. Acta geographica Slovenica, 44 (1), 25–45. DOI: https://doi.org/10.3986/ags44102

Cebula, R. J. (1974). Interstate migration and the Tiebout hypothesis: An analysis according to race, sex and age. Journal of American Statistical Association, 69, 876–879. DOI: https://doi.org/10.1080/01621459.1974.10480221

Cebula, R. J. (1990). A brief empirical note on the Tiebout hypothesis and state income tax policies. Public Choice, 67 (1), 87–90. DOI: https://doi.org/10.1007/bf01890159

Cebula, R. J. (2002). Net interstate population growth rates and the Tiebout-Tullock hypothesis: New empirical evidence, 1990-2000. Atlantic Economic Journal, 30 (4), 414–421. DOI: https://doi.org/10.1007/bf02298784

Cebula, R. J. (2009). Migration and the Tiebout-Tullock hypothesis revisited. American Journal of Economics and Sociology, 68 (2), 541–551. DOI: https://doi.org/10.1111/j.1536-7150.2009.00638.x

Cebula, R. J., Curran, C. (1978). Property taxation and human migration. American Journal of Economics and Sociology, 37 (1), 43–49. DOI: https://doi.org/10.1111/j.1536-7150.1978.tb02793.x

Cesario, F. J. (1973). A generalized trip distribution model. Journal of Regional Science, 13, 233–247. DOI: https://doi.org/10.1111/j.1467-9787.1973.tb00398.x

Cesario, F. J. (1974). More on the generalized trip distribution model. Journal of Regional Science, 14 (3), 389–397. DOI: https://doi.org/10.1111/j.1467-9787.1974.tb00461.x

Chun. J. (1996). Interregional migration and regional development. Avebury: Bruton Center for Development Studies Series. Avebury.

Drobne, S. (2014). Impact of the recession on the attractiveness of urban and rural areas of Slovenia = Vpliv recesije na privlačnost mestnih in podeželskih območij Slovenije. Geodetski vestnik 58 (1), 103–139. DOI: https://doi.org/10.15292/geodetski-vestnik.2014.01.103-139

Drobne S. (2016). Model vrednotenja števila in območij funkcionalnih regij. Doktorska disertacija (Doctoral dissertation). Ljubljana: Univerza v Ljubljani, Fakulteta za gradbeništvo in geodezijo.

Drobne, S., Bogataj M. (2005). Intermunicipal gravity model of Slovenia. In L. Zadnik Stirn (Ed.), S. Drobne (Ed.), SOR '05 Proceedings, Proceedings of the 8th International Symposium on Operational Research in Slovenia (str. 207–212). Ljubljana: Slovenian Society Informatika.

Drobne, S., Bogataj, M. (2009). Razvojna ogroženost regij in stalne selitve. In J. Nared (Ed.) in D. Perko (Ed.). Razvojni izzivi Slovenije, (Regionalni razvoj, 2) (str. 285-294). Ljubljana: Založba ZRC.

Drobne, S., Bogataj, M. (2011). Accessibility and flow of human resources between Slovenian regions. In L. B. Ros Mcdonnell (Ed.), R. Vodopivec (Ed.), Mathematical economics, operational research and logistics, serial no. 11. Ljubljana: Faculty of Civil and Geodetic Engineering, & Šempeter pri Gorici, Mediterranean Institute for Advanced Studies (MEDIFAS).

Drobne, S., Bogataj, M. (2013). Vpliv recesije na parametre kakovosti regionalnih središč in njihovo privlačnost. Revija za univerzalno odličnost, 2 (2), A25–A42.

Drobne, S., Bogataj, M., Bogataj, L. (2008). Spatial interactions influenced by European corridors and the shift of the Schengen border regime. In KOI 2006 Proceedings, The 11th International Conference on Operational Research (str. 185–198). Zagreb: Croatian Operational Research Society.

Drobne, S., Bogataj, M., Lisec, A. (2008). The Influence of Accessibility to Inter-Regional Commuting Flows in Slovenia. In L. Bernard (Ed.), Taking Geoinformation Science one step further (str. 1–12). Girona, 2008.

Drobne, S., Rajar, T., Lisec, A. (2013). Dinamika selitev in delovne mobilnosti v urbana središča Slovenije, 2000–2011 = Dynamics of migration and commuting to the urban centres of Slovenia, 2000–2011. Geodetski vestnik, 58 (2), 313–353. DOI: https://doi.org/10.15292/geodetski-vestnik.2013.02.333-353

Drozg, V. (2008). Scenarij urbanega razvoja Slovenije. In M. Sitar (Ed.), Urbane prihodnosti (str. 41-54). Maribor: Fakulteta za gradbeništvo.

Edel, M., Sclar, E. (1974). Taxes, spending and property values: Supply adjustment in a Tiebout-Oates model. Journal of Political Economy, 2, 941–954. DOI: https://doi.org/10.1086/260248

England, R. W. (2016). Tax incidence and rental housing: A survey and critique of research. National Tax Journal, 69 (2), 435–460. DOI: http://dx.doi.org/10.17310/ntj.2016.2.07

ESPON 1.1.1. Potentials for polycentric development in Europe Final project report (2005). https://www.espon.eu/export/sites/default/Documents/Projects/ESPON2006Projects/ThematicProjects/Polycentricity/fr-1.1.1_revised-full.pdf, accessed 13. 10. 2016.

Ferreira, F. (2010). You can take it with you: Proposition 13 tax benefits, residential mobility, and willingness to pay for housing amenities. Journal of Public Economics, 94 (9/10), 661–673. DOI: https://doi.org/10.1016/j.jpubeco.2010.04.003

Filippakopoulou, M., Potsiou, C. (2014). Research on residential property taxation and its impact on the real estate market in Greece. The Survey Review, 46 (338), 333–341. DOI: http://dx.doi.org/10.1179/1752270614Y.0000000113

Fischel, W. A. (1975). Fiscal and environmental considerations in the location of firms in suburban communities. In E. S. Mills (Ed.), E. E. Oates (Ed.), Fiscal zoning and land use controls (str. 119–174). Lexington, Massachusetts: Lexington Books.

Fotheringham, A. S., O'Kelly, M. E. (1989). Spatial interaction models: Formulations and applications. Dordrecht: Kluwer Academic Publishers.

George, H. (1948). Progress and poverty: An inquiry into the cause of industrial depressions and of increase of want with increase of wealth. New York: Robert Schalkenbach foundation.

Glaeser, E. (1996). The incentive effects of property taxes on local governments. Public Choice, 89, 93–111. DOI: https://doi.org/10.1007/bf00114281

Greenwood, M. J., Hunt, G. L. (2003). The early history of migration research. International Regional Science Review, 26 (1), 3–37. DOI: https://doi.org/10.1177/0160017602238983

Hamilton, B. W. (1975). Zoning and property taxation in a system of local governments. Urban Studies, 12 (2), 205–211. DOI: https://doi.org/10.1080/00420987520080301

Hamilton, B. W. (1983). The flypaper effect and other anomalies. Journal of public economics, 22 (3), 347–361. DOI: https://doi.org/10.1016/0047-2727(83)90040-3

Haughwout, A. F., Inman, R. P., Craig, S., Luce, T. (2004). Local revenue hills: Evidence from four U.S. cities. The Review of Economics and Statistics, 86 (2), 570–585. DOI: https://doi.org/10.1162/003465304323031120

Haynes, K. E., Fotheringham, A. S. (1984). Gravity and spatial interaction models. London: Sage Publications.

Hill, B. C. (2006). Essays on tax competition. Dokctoral dissertation. Knoxville: The University of Tennessee.

Horak, J., Ivan, I., Tesla, J. (2014). Improved gravity models of commuting conditions: A Czech case study. In ICTTE 2014 Proceeding of the International Conference on Traffic and Transport Engineering (str. 171–179). Beograd: City Net Scientific Research Center & Faculty of Transport and Traffic Engineering, University of Belgrade.

Isard, W. (1956). Location and space-economy: A general theory relating to industrial location, market areas, land use, trade, and urban structure. Cambridge: Published jointly by the Technology Press of Massachusetts Institute of Technology and Wiley, New York.

Lisec, A., Drobne, S. (2008). Vrednost kmetijskih zemljišč v odvisnosti od lokacije zemljišč na lokalni ravni - primer občine Krško. In A. Lisec (Ed.), Zbornik referatov, II. posvet Logistika v kmetijstvu 2008, Sevnica, Krško: Fakulteta za logistiko.

Lundholm, E. (2010). Interregional migration propensity and labour market size in Sweden, 1970–2001. Regional Studies, 44 (4), 455–464. DOI: https://doi.org/10.1080/00343400802662674

Lowry, I. S. (1964). A model of metropolis, Rand Corporation, Pittsburg.

Marx, K., Ed: Engels, F.(1894) Das Kapital, Kritik der politischen Ökonomie. Hamburg: Verlag Otto Meissner.

McDonald, J. F., McMillen, D. P. (2011). Urban Economics and Real Estate: Theory and Practice. Danvers MA: George Hoffman Publisher.

Ministrstvo za finance RS, MFRS (Ministry of Finance of Republic Slovenia) (2016). Vzorec odloka o proračunu. http://www.mf.gov.si/si/delovna_podrocja/lokalne_skupnosti/priprava_proracunov_in_zakljucnih_racunov_obcinskih_proracunov/proracunski_prirocnik/proracunski_prirocnik_za_pripravo_proracunov_obcin_za_leto_2015, accessed 19. 3. 2016.

Ministrstvo za gospodarstvo RS (Ministry of Economy) (2013). Strategija razvoja Slovenije 2014-2020 (osnutek). http://www.mgrt.gov.si/fileadmin/mgrt.gov.si/pageuploads/EKP/Drugi_dokumenti/SRS_09_08_2013.pdf, accessed 10. 5. 2016.

Miklavčič, T., Fonda, M., Zavodnik Lamovšek, A., Pogačnik, A., Foški, M., Drobne, S., Golobič, M., Marot, N., Hudoklin, J., Hočevar, I., Acer Novo mesto d.o.o. (2016). Strategija prostorskega razvoja Slovenije – Poročilo o prostorskem razvoju. Ljubljana: Ministrstvo za okolje in prostor, Direktorat za prostor, graditev in stanovanja.

Nared, J., Bole, D., Breg Valjavec, M., Ciglič, R., Černič Istenič, M., Goluža, M., Kozina, J., Lapuh, L., Razpotnik Visković, N., Repolusk, P., Rus, P., Tiran, J. (2016). Policentrično omrežje središč in dostopnost prebivalstva do storitev splošnega in splošnega gospodarskega pomena – Končno poročilo. Ljubljana: Znanstvenoraziskovalni center Slovenske akademije znanosti in umetnosti.

Nijkamp, P., Reggiani, A. (1992). Interaction, evolution and chaos in space. Berlin: Springer Verlag. DOI: https://doi.org/10.1007/978-3-642-77509-3

Oates, W. E. (1969). The effects of property taxes and local public spending on property values: empirical study of tax capitalization and the Tiebout hypothesis. Journal of Political Economy, 77 (6), 957–971. DOI: https://doi.org/10.1086/259584

Palmon, O., Smith, B. (1998). New evidence on property tax capitalization. Journal of Political Economy, 106, 1099–1111. DOI: https://doi.org/10.1086/250041

Pichler Milanović, N., Cigale, D., Krevs, M., Gostinčar, P., Černe, A., Zavodnik Lamovšek, A., Žaucer, T., Sitar, M., Drozg V., Pečar, J. (2008). Strategy for a Regional Polycentric Urban System in Central-Eastern Europe Economic Integrating Zone. RePUS project, Final report. Ljubljana: University of Ljubljana, Faculty of Arts.

Prashker, J., Shiftan, J., Hershkovitch-Sarusi, P. (2008). Residential choice location, gender and the commute trip to work in Tel Aviv. Journal of Transport Geography, 16 (5), 332–341. DOI: https://doi.org/10.1016/j.jtrangeo.2008.02.001

Ravbar, M. (2005). »Urban sprawl«: Popačena slika (sub)urbanizacije v Sloveniji? Geografski vestnik 77 (1), 27–36.

Ravenstein, E. (1885). The Laws of Migration. Journal of the Statistical Society of London, 48 (2), 167–235. DOI: https://doi.org/10.2307/2979181

Ravenstein, E. (1889). The Laws of Migration: Second Paper. Journal of the Royal Statistical Society, 52 (2), 241–305. DOI: https://doi.org/10.2307/2979333

Režek, J. (2004). Značilnosti davka na nepremičnine in ocena njegove družbene sprejetosti. Geodetski vestnik, 48 (1), 18–31.

Sen, A., Smith, T. (1995). Gravity Models of Spatial Interaction Behavior. First edition. Springer, Berlin. DOI: https://doi.org/10.1007/978-3-642-79880-1

Shuai, X. (2012). Does commuting lead to migration? The Journal of Regional Analysis & Policy, 42 (3), 237–250.

Skidmore, M., Reese L., Kang, S. H. (2012). Regional analysis of property taxation, education finance reform, and property value growth. Regional Science & Urban Economics, 42 (1), 351–363. DOI: https://doi.org/10.1016/j.regsciurbeco.2011.10.008

Statistični urad RS, SURS (Statistical Office of the Republic Slovenia) (2009). Uvedba nove statistične metodologije na področju statistike selitev. SI-STAT, Podatkovna baza Statističnega urada Republike Slovenije. Ljubljana, SURS, Oddelek za demografske statistike. http://www.stat.si/doc/sosvet/Sosvet_22/Sos22_s1132-2009.doc, accessed 3. 7. 2016.

Tiebout, C. (1956). A pure theory of local expenditures. Journal of Political Economy, 64, 416–424. DOI: https://doi.org/10.1086/257839

Tiebout, C. (1961). An economic theory of fiscal decentralization. NBER, Public Finances, Needs, Sources and Utilization. Princeton: Univ. Press.

Tullock, G. (1971) Public decisions as public goods. Journal of Political Economy, 79. DOI: https://doi.org/10.1086/259799

Urad Republike Slovenije za makroekonomske analize in razvoj (Institute of Macroeconomic Analysis and Development) (2016). Poročilo o razvoju 2016. http://www.umar.gov.si/fileadmin/user_upload/publikacije/pr/2016/PoR_2016_s.pdf, accessed 8. 7. 2016.

Young, E. C. (1924). The movement of farm population. Doktorska disertacija (Doctoral dissertation). New York: Cornell University, Agricultural Experimental Station.

Wang, Y., Portoglou, D., Orford, S., Gong, Y. (2015). Bus stop, property price and land value tax: A multilevel hedonic analysis with quantile calibration. Land Use Policy, 42, 381–391. DOI: https://doi.org/10.1016/j.landusepol.2014.07.017

Wilson, A. G. (1971). A family of spatial interaction models, and associated developments. Environment and Planning, A3 (1), 1–32. DOI: https://doi.org/10.1068/a030001

Wilson, A. G. (1974). Urban and regional models in geography and planning. London: John Wiley.

Zakon o davku na nepremičnine, ZDavNepr (Real Property Tax Act). Official Gazette of the Republic of Slovenia no. 101/2013 and 22/2014 – decision US).

Zakon o financiranju občin, ZFU-1 (Financing of Municipalities Act). Official Gazette of the Republic of Slovenia no. 123/2006, 57/2008, 36/2011 in 14/2015 - ZUUJFO.

Annex 1: The proportion of current levies for real estate in municipal revenues (A), the proportion of new real estate tax in municipal revenues (B), and changes in municipal revenues arising from changed taxation of real estate (C)

Šifra	Občina	A	B	C	Šifra	Občina	A	B	C	Šifra	Občina	A	B	C
53	Kranjska Gora	12.50	37.99	25.48	13	Cerknica	6.45	13.63	7.18	179	Sodražica	1.37	5.85	4.48
12	Cerklje na Gorenjskem	6.17	25.05	18.88	201	Renče-Vogrsko	5.39	12.52	7.14	193	Žužemberk	2.25	6.71	4.46
186	Trzin	16.97	35.70	18.74	127	Štore	4.11	11.25	7.13	178	Selnica ob Dravi	5.22	9.64	4.42
90	Piran	11.69	28.31	16.62	120	Šentjur	2.19	9.32	7.13	74	Mežica	2.95	7.32	4.37
164	Komenda	6.17	22.33	16.16	192	Žirovnica	6.53	13.57	7.03	154	Dobje	2.12	6.48	4.37
212	Mirna	6.02	21.17	15.15	174	Prebold	4.86	11.88	7.02	91	Pivka	5.09	9.41	4.31
117	Šenčur	5.21	20.22	15.01	79	Mozirje	2.12	9.11	6.99	108	Ruše	10.35	14.65	4.30
89	Pesnica	-5.63	9.17	14.80	7	Brda	3.47	10.41	6.94	10	Tišina	1.74	6.04	4.30
72	Mengeš	9.21	23.72	14.50	44	Kanal	7.51	14.39	6.89	210	Sveti Jurij v Slo. goricah	2.10	6.38	4.28
160	Hoče-Slivnica	4.38	18.54	14.16	110	Sevnica	2.28	9.15	6.87	169	Miklavž na Drav. polju	6.41	10.68	4.28
8	Brezovica	3.95	17.82	13.87	70	Maribor	12.88	19.62	6.74	153	Cerkvenjak	1.54	5.73	4.18
40	Izola	8.30	22.14	13.84	6	Bovec	3.07	9.81	6.73	181	Sveta Ana	1.52	5.64	4.12
208	Log-Dragomer	4.25	17.86	13.61	157	Dolenjske Toplice	3.97	10.60	6.63	137	Vitanje	2.69	6.81	4.12
3	Bled	10.69	24.29	13.60	184	Tabor	2.45	9.07	6.62	14	Cerkno	2.81	6.92	4.11
50	Koper	17.23	29.73	12.50	109	Semič	3.22	9.81	6.59	146	Železniki	4.09	8.19	4.10
4	Bohinj	6.18	18.62	12.44	134	Velike Lašče	2.86	9.41	6.55	152	Cankova	3.27	7.35	4.08
82	Naklo	14.65	26.74	12.08	22	Dol pri Ljubljani	7.60	14.14	6.54	202	Središče ob Dravi	5.51	9.49	3.98
35	Hrpelje-Kozina	4.73	16.53	11.79	81	Muta	2.61	9.15	6.54	31	Gornji Petrovci	3.32	7.23	3.91
39	Ivančna Gorica	1.18	12.88	11.70	122	Škofja Loka	11.12	17.65	6.53	198	Makole	0.69	4.60	3.91
123	Škofljica	5.01	16.56	11.54	38	Ilirska Bistrica	3.45	9.89	6.44	172	Podlehnik	1.83	5.69	3.86
5	Borovnica	3.57	15.10	11.54	183	Šempeter-Vrtojba	14.68	21.11	6.43	116	Sveti Jurij ob Ščavnici	1.50	5.32	3.82
95	Preddvor	4.30	15.81	11.51	99	Radeče	2.82	9.21	6.38	30	Gornji Grad	2.50	6.30	3.81
104	Ribnica	4.30	15.64	11.34	48	Kočevje	3.32	9.67	6.35	67	Luče	1.00	4.78	3.78
61	Ljubljana	16.79	27.81	11.03	60	Litija	5.32	11.64	6.31	175	Prevalje	6.08	9.79	3.71
23	Domžale	9.69	20.41	10.72	46	Kobarid	2.53	8.74	6.21	165	Kostel	1.23	4.94	3.70
138	Vodice	3.58	14.24	10.66	92	Podčetrtek	3.85	9.97	6.12	2	Beltinci	4.37	8.00	3.63
37	Ig	4.67	15.23	10.56	55	Kungota	1.53	7.60	6.07	182	Sveti Andraž v Slo. gor.	2.61	6.19	3.57
111	Sežana	7.36	17.83	10.47	128	Tolmin	3.31	9.35	6.04	176	Razkrižje	1.65	5.15	3.50
32	Grosuplje	6.03	16.34	10.31	166	Križevci	2.25	8.27	6.01	132	Turnišče	2.33	5.81	3.48
64	Logatec	6.53	16.77	10.24	26	Duplek	3.03	9.04	6.01	51	Kozje	2.10	5.56	3.46
21	Dobrova-Polhov Gradec	2.64	12.81	10.17	84	Nova Gorica	10.77	16.71	5.94	66	Loški Potok	2.64	6.00	3.36
151	Braslovče	3.09	12.86	9.77	62	Ljubno	2.28	8.21	5.92	69	Majšperk	1.15	4.49	3.34
113	Slovenska Bistrica	3.07	12.83	9.76	147	Žiri	5.00	10.92	5.92	185	Trnovska vas	2.64	5.84	3.20
58	Lenart	3.12	12.81	9.69	200	Poljčane	4.67	10.51	5.84	167	Lovrenc na Pohorju	3.56	6.67	3.12
77	Moravče	4.49	14.06	9.57	177	Ribnica na Pohorju	2.81	8.62	5.81	142	Zagorje ob Savi	4.85	7.94	3.09
43	Kamnik	6.33	15.82	9.49	105	Rogašovci	0.10	5.89	5.79	36	Idrija	6.72	9.66	2.94
71	Medvode	9.60	18.99	9.40	125	Šmartno ob Paki	6.20	11.96	5.76	47	Kobilje	1.30	4.19	2.89
59	Lendava	4.99	14.33	9.34	194	Šmartno pri Litiji	3.93	9.60	5.67	187	Velika Polana	1.00	3.82	2.82
80	Murska Sobota	10.61	19.93	9.32	100	Radenci	7.73	13.40	5.67	205	Sveti Tomaž	2.74	5.54	2.81

Šifra	Občina	A	B	C
170	Mirna Peč	1.77	10.68	8.91
102	Radovljica	8.96	17.84	8.88
139	Vojnik	1.79	10.59	8.80
190	Žalec	4.54	13.31	8.77
119	Šentjernej	3.36	12.08	8.72
140	Vrhnika	6.80	15.31	8.51
207	Gorje	4.21	12.72	8.50
52	Kranj	12.01	20.46	8.46
173	Polzela	4.90	13.31	8.41
211	Šentrupert	4.31	12.70	8.39
130	Trebnje	5.09	13.44	8.35
98	Rače-Fram	7.24	15.58	8.34
156	Dobrovnik	3.97	12.30	8.33
155	Dobrna	2.28	10.57	8.29
78	Moravske Toplice	4.96	13.22	8.26
85	Novo mesto	11.52	19.68	8.16
206	Šmarješke Toplice	3.49	11.59	8.10
68	Lukovica	7.66	15.74	8.09
75	Miren-Kostanjevica	2.52	10.60	8.08
9	Brežice	3.39	11.40	8.01
49	Komen	2.53	10.49	7.96
162	Horjul	3.61	11.56	7.95
136	Vipava	5.05	12.94	7.89
17	Črnomelj	2.79	10.60	7.81
19	Divača	2.22	10.01	7.78
106	Rogaška Slatina	7.21	14.90	7.69
121	Škocjan	2.78	10.43	7.65
118	Šentilj	2.47	10.01	7.54
114	Slovenske Konjice	4.48	11.88	7.40
86	Odranci	2.48	9.70	7.21
148	Benedikt	1.96	9.16	7.20
1	Ajdovščina	6.23	13.42	7.19
18	Destrnik	2.09	7.72	5.63
88	Osilnica	1.31	6.92	5.61
94	Postojna	9.29	14.89	5.59
24	Dornava	2.26	7.84	5.58
101	Radlje ob Dravi	5.09	10.63	5.53
209	Rečica ob Savinji	1.82	7.34	5.52
135	Videm	1.76	7.27	5.51
204	Sveta Trojica v Slo. g.	2.41	7.89	5.48
11	Celje	14.08	19.41	5.34
45	Kidričevo	9.81	15.03	5.22
20	Dobrepolje	4.57	9.76	5.19
29	Gornja Radgona	8.11	13.29	5.18
83	Nazarje	7.26	12.41	5.15
197	Kostanjevica na Krki	3.73	8.86	5.14
41	Jesenice	8.28	13.38	5.10
124	Šmarje pri Jelšah	4.28	9.37	5.10
163	Jezersko	4.42	9.48	5.06
189	Vransko	3.96	8.97	5.01
144	Zreče	4.26	9.25	5.00
73	Metlika	1.93	6.86	4.93
96	Ptuj	5.62	10.54	4.92
42	Juršinci	2.38	7.29	4.90
76	Mislinja	3.19	7.99	4.80
195	Apače	1.84	6.62	4.79
27	Gorenja vas-Poljane	3.25	7.99	4.74
171	Oplotnica	2.93	7.64	4.71
15	Črenšovci	2.00	6.70	4.71
131	Tržič	4.65	9.35	4.69
180	Solčava	0.63	5.30	4.67
150	Bloke	3.83	8.39	4.56
63	Ljutomer	7.08	11.62	4.54
188	Veržej	5.67	10.18	4.51
57	Laško	6.96	9.72	2.76
149	Bistrica ob Sotli	2.32	5.00	2.68
97	Puconci	4.20	6.85	2.65
112	Slovenj Gradec	6.67	9.31	2.64
199	Mokronog-Trebelno	1.43	3.94	2.51
56	Kuzma	3.60	6.07	2.47
161	Hodoš	1.37	3.72	2.35
25	Dravograd	8.05	10.30	2.25
196	Cirkulane	3.03	5.14	2.11
87	Ormož	7.42	9.31	1.89
191	Žetale	0.99	2.85	1.86
54	Krško	6.48	8.29	1.81
203	Straža	11.08	12.84	1.76
65	Loška dolina	5.64	7.39	1.75
143	Zavrč	1.98	3.66	1.68
33	Šalovci	3.94	5.32	1.38
158	Grad	3.04	4.27	1.23
141	Vuzenica	5.82	7.04	1.22
168	Markovci	6.02	6.79	0.77
16	Črna na Koroškem	4.51	5.08	0.57
103	Ravne na Koroškem	11.54	11.78	0.24
129	Trbovlje	9.73	9.06	-0.67
107	Rogatec	6.94	6.22	-0.72
28	Gorišnica	9.64	8.54	-1.11
34	Hrastnik	7.72	6.44	-1.28
93	Podvelka	6.96	4.37	-2.59
133	Velenje	16.11	12.97	-3.14
126	Šoštanj	13.43	9.62	-3.81
115	Starše	12.61	8.76	-3.85
159	Hajdina	16.74	10.82	-5.91

Note: A – current revenues from building land use charge, property tax and fees for the maintenance of forest roads as % of municipal revenue; B – the real estate tax as % of municipal revenue; C – change in %.

Janež P., Bogataj M., Drobne S. (2016). Impact of the real estate taxation and municipal revenue on dynamics of internal migration: Case study for City Municipal of Ljubljana. Geodetski vestnik, 60 (4): 644-684. DOI: 10.15292/geodetski-vestnik.2016.04.644-684

VPLIV DAVČNE NEPREMIČNINSKE POLITIKE IN PRIHODKOV OBČIN NA NOTRANJE SELITVE: ŠTUDIJA PRIMERA ZA MESTNO OBČINO LJUBLJANA

OSNOVNE INFORMACIJE O ČLANKU:

GLEJ STRAN 644

1 UVOD

V prostorski ekonomiki je pomembno vprašanje, kako pritegniti ljudi v obravnavano lokalno skupnost, na primer v občino, ter kako jih v njej zadržati; glej npr. Tiebout (1956, 1961), Tullock (1971), Chun (1996). V Sloveniji ni institucionalizirane vmesne stopnje samouprave med državo in občinami, zato so občine osnovna celica za uresničevanje regionalnega razvoja z določenimi razvojnimi cilji na nacionalni ravni. Uresničevanje teh ciljev je močno povezano s financiranjem občin, njihovo ekonomsko močjo in stabilnostjo. Republika Slovenija (RS) izpostavlja blaginjo prebivalstva kot osrednji cilj družbenega razvoja, pri čemer bodo spremembe v gospodarstvu in družbi usmerjene k večanju blaginje sedanje in prihodnjih generacij (Strategija razvoja Slovenije 2014–2020 (osnutek), Ministrstvo za gospodarstvo, 2013, in Poročilo o razvoju Slovenije, Urad RS za makroekonomske analize in razvoj, 2016). Pri tem je treba posebno pozornost posvetiti projekcijam demografskih gibanj.

V članku obravnavamo stalne selitve med slovenskimi občinami. Stalna selitev (v nadaljevanju: selitev) je pojav v prostoru, kjer se spremeni bivališče posameznika ali skupine ljudi (Bole, 2004) med obravnavanimi prostorskimi enotami (dopolnilo avtorjev). Selitve dolgoročno vplivajo na politiko prometa, infrastrukturo in druge strukture v prostoru. So tudi tesno povezane s trgom nepremičnin. So pomemben in zapleten pojav ter pomembno vplivajo na demografski, gospodarski in širši družbeni razvoj (Bevc, 2000). S teoretičnimi in empiričnimi raziskavami tokov selitev lahko pojasnimo njihove pomembne posledice. Rezultati empiričnih raziskav o selitvenih tokovih pomembno prispevajo k boljšemu razumevanju tovrstnih demografskih gibanj, hkrati pa so lahko podlaga za boljše politično odločanje o posegih v prostor ter upravljanje objektov in naprav v njih, ne nazadnje podpirajo razprave o parametrih davčne politike kot potencialnega regulatorja rasti mest. Tako lahko občine oziroma regije z različnimi mehanizmi razvojnih politik vplivajo na razvoj svojega območja, s tem pa tudi na nadaljnja demografska gibanja. Pod pojmom urbani razvoj razumemo spreminjanje poselitvenih razmer ter spreminjanje strukture mest, ki je posledica gospodarskih in socialnih razmer (Drozg, 2008). Prostorski razvoj je posledica izvajanja več javnih politik, njihovi vplivi so lahko neposredni (na primer gradnja prometne infrastrukture) ali posredni (na primer ukrepi davčne politike) (Miklavčič et al., 2016). Občine so dolžne upravljati svoje prihodke tako, da zagotavljajo storitve javnega pomena in skrbijo za prostorski razvoj (Pichler Milanović et al., 2008). Občine naj bi vzpostavile razmere, ki bodo zagotovile kakovostno življenjsko okolje in ustvarile privlačno poslovno okolje (Nared et al., 2016).

Selitve lahko analiziramo v gravitacijskih modelih (GM) oziroma prostorskih interakcijskih modelih (PIM). Prvi matematični model selitev, ki je temeljil na fizikalnem zakonu gravitacije, je objavil Young (1924). Wilson (1971, 1974) je gravitacijski model razširil v prostorski interakcijski model, tega je posplošil Cesario (1973, 1974). Že Lowry (1964) je predstavil možnosti za dinamično obravnavo tovrstnih gravitacij, kjer sta bila v jedru obravnave zaposlovanje in gradnja stanovanj. V takšnih modelih analiziramo vpliv spremenljivk na tokove v izvoru, kjer proučujemo lepljivost, in na tokove v ponoru, kjer proučujemo privlačnost ter vpliv razdalje med izvorom in ponorom na tokove selitev (Haynes in Fotheringham, 1984; Fotheringham in O'Kelly, 1989; Sen in Smith, 1995).

Chun (1996) trdi, da so lahko selitve sredstvo za doseganje gospodarske učinkovitosti in pravičnosti. Anjomani (2002) ugotavlja, da se lokalne oblasti vse bolj zavedajo pomembnosti selitev za zagotavljanje razvoja območja in družbene blaginje. Tako lahko občine na podlagi gravitacijskih modelov sprejmejo boljše politične odločitve ter s primerno lokalno politiko ustvarijo možnosti za rast. S tem povečajo blaginjo svojih prebivalcev in uporabnikov njihovih storitev. Med boljše politične odločitve občin spada tudi primernejša obdavčitev, ki se odraža v družbeni in gospodarski učinkovitosti občin. Ob tem se zastavlja vprašanje, ali bo diferencirana nepremičninska davčna politika vplivala na priseljevanje, odseljevanje in posledično na tehnični prirast prebivalstva v občinah.

Namen in cilj te raziskave sta predstaviti prostorski interakcijski model za preučitev lepljivosti občine izvora in privlačnosti občine ponora za selitve med občinami Slovenije, s katerim posebej analiziramo vpliv spremenjenih prihodkov občine ter vpliv spremenjenih cen nepremičnin, iz naslova spremenjene obdavčitve nepremičnin, na privlačnost občine za selivce. V nadaljevanju članka najprej opredelimo problem, kjer opredelimo notranje selitve in njihovo obravnavo v PIM, ki sta ga razvila Drobne in Bogataj (2005, 2009, 2011, 2013), v obravnavi vpliva prostorske politike in investicij v prometno infrastrukturo na tokove pa tudi Bogataj et al. (2004) ter Bogataj in Bogataj (2007, 2011), sledi opredelitev prihodkov občine in cen nepremičnin z vidika spremembe obdavčitve. V tretjem delu predstavimo metodologijo raziskave, tj. podatkovne osnove in metodo dela. Rezultate izvedbe modela z izračunom parametrov selitvenih tokov med občinami in spreminjanje prihodka občin zaradi uvedbe davka na nepremičnine predstavimo v četrtem poglavju. Na koncu sledi študija primera, vpliv spremembe stopnje davka na nepremičnine v Mestni občini Ljubljana (MOL) na njeno privlačnost za selivce. V šestem in sedmem poglavju članka sledita razprava in sklep s predlogi za nadaljnje delo.

2 PREDSTAVITEV PROBLEMA

2.1 Selitve in prostorski interakcijski modeli

Greenwood in Hunt (2003) sta izdelala pregled empiričnih študij selitev od Ravensteina (1885, 1889) naprej. Avtorja ugotavljata, da je večina selitev v preteklosti potekala v večja mestna središča, kar je v obdobju industrializacije povzročilo rast mest in urbanizacijo. Shuai (2012) ugotavlja, da predvsem delovna mobilnost pozitivno in izrazito vpliva na selitvene tokove. Če se povečajo stroški delovne mobilnosti ali zmanjšajo stroški selitve, se delavec vozač lažje odloči za selitev: medtem ko nižji stroški selitev pritegnejo prebivalce mest na bližnje lokacije zunaj mesta, tamkajšnje prebivalstvo spodbujajo k dnevni delovni mobilnosti v mesto predvsem nižji stroški prevoza na delo in cenejše nepremičnine. Podobno ugotavlja

Lundholm (2010), da ravno pripravljenost na daljšo vožnjo na delo ustvarja pogoje za odločanje glede morebitne preselitve. Iz tega lahko sklenemo, da boljše razmere za vožnjo na delo tako zavirajo kot tudi pospešujejo selitve (Drobne, Rajar in Lisec, 2013): primer pospeševanja selitev so selitve iz mestnih območij na podeželje (suburbanizacija) in vožnja nazaj v mesto na delo, kar je razvidno v občinah na obrobju Ljubljane (Ravbar, 2005).

Bevc in Uršič (2013) sta po državni statistiki povzeli dejstvo, da je v Sloveniji v obdobju 1995–2007 absolutno in relativno število selitev naraščalo. Kljub metodološko-vsebinskim spremembam pri zajemu podatkov o selitvah v letu 2008 (SURS, 2009) statistika kaže na naraščanje selitev med slovenskimi občinami tudi po letu 2009. Avtorici sta še ugotovili, da narašča povprečna starost selivcev, in sicer z 28 let v 1990. letih, na 30 let v obdobju 2001–2007, v obdobju 2008–2011 pa je znašala že 34 let (Bevc in Uršič, 2013). Te ugotovitve še posebej opozarjajo, da se s politiko upokojevanja in staranjem prebivalstva spreminja tudi jakost tokov delovne mobilnosti in selitev.

Bogataj, Drobne in Bogataj (1993), Bogataj (2000), Bogataj in Drobne (2005), Drobne in Bogataj (2005, 2009, 2011), Drobne, Bogataj in Bogataj (2008), Drobne in Bogataj (2013), Drobne, Rajar in Lisec (2013) ter Drobne (2014) so v PIM študirali selitve in delovno mobilnost, kot nadomestek in dopolnilo selitev prebivalstva, po različnih prostorskih strukturah Slovenije in Evrope. Prostorske interakcije so medsebojni vplivi med lokacijami, ki pomenijo gibanje ali komunikacijo v prostoru. V prostorskih znanostih nas najpogosteje zanimajo interakcije, ki so rezultat človekovega delovanja in vključujejo selitve, dnevno ali tedensko delovno mobilnost, dnevne ali tedenske tokove dijakov in študentov, tokove informacij ali blaga in podobno (Fotheringham in O'Kelly, 1989; Nijkamp in Reggiani, 1992). Proučevanje selitev med občinami oziroma regijami je torej del širšega proučevanja prostorskih interakcij. PIM se razlikujejo glede na matematično formulacijo, omejitve, vire podatkov, umerjanje, konvergenčna merila in ostale parametre. Izbira in sprememba vrste PIM mora ustrezati zahtevanemu namenu (Horak, Ivan in Tesla, 2014; Drobne, 2016).

Po Wilsonu (1971) so prostorski interakcijski modeli dolgoročno pomembni za proučevanje v družbenih vedah, ne le v geografiji, temveč tudi v ekonomiji in sociologiji – torej v številnih znanostih, ki se ukvarjajo s prostorom. V PIM (lahko) proučujemo vpliv (številnih) pojasnjevalnih spremenljivk na tokove selitev in dnevne oziroma tedenske mobilnosti ter povezanost med njimi. Prashker in sodelavci prepoznavajo naslednje skupine dejavnikov, ki vplivajo na izbiro lokacije prebivališča (Prashker, Shiftan in Hershkovitch-Sarusi, 2008): (a) značilnosti stanovanjskih enot (velikost in vrsta stanovanjske enote, možnost parkiranja, zvočna in toplotna izoliranost, razgled, starost zgradbe in vzdrževanje ter druge posebne značilnosti); (b) lokacijske značilnosti (značilnosti, ki se nanašajo na kakovost bivalnih enot samih in okolja, ki mu pripadajo; okolje vpliva na kakovost prebivališča in načina življenja v gospodinjstvu; primeri takšnih dejavnikov so družbenogospodarski status območja, izobrazbena struktura, stopnja varnosti, priložnosti za nakupe in oddih, promet, hrup, onesnaženost zraka in drugi); (c) značilnosti dostopnosti (dostopnost do različnih mestnih/podeželskih/vmesnih funkcij in dejavnosti, zanimivih za posameznika, kot so delo, nakupovanje in oddih; vožnja na delo se v literaturi proučuje najpogosteje, zato je dostopnost do dela domnevno (ibid.) najpomembnejša pri izbiri lokacije prebivališča); (d) posameznikove značilnosti (kot so starost, zakonski stan, otroci, izobrazba, prihodek, lastništvo prevoznega sredstva in druge značilnosti).

V raziskavi smo v PIM analizirali dejavnike, ki vplivajo na notranje selitve v Sloveniji. Pri tem smo posebno pozornost namenili analizi vplivov spremembe prihodkov občin in vplivov davkov na cene nepremičnin iz naslova spremembe obdavčitve nepremičnin v Sloveniji na jakost tokov selivcev.

2.2 Prihodki občine

V prostorski ekonomiki je – od pionirskega dela Tiebouta (1956) naprej – eno od osrednjih vprašanj razmeščanje gospodinjstev na urbanem trgu stanovanjskih nepremičnin (Ferreira, 2010). Tiebout (1956, 1961) je preučil vpliv posameznikove mobilnosti na oblikovanje fiskalne politike v lokalnih skupnostih (občinah). V njegovem modelu se posamezniki selijo med območji brez stroškov in svobodno, dokler ne najdejo območja z optimalno kombinacijo dosegljivih javnih dobrin (Hill, 2006). Dosegljivost pa je odvisna tudi od višine davkov na nepremičnine. Tullock (1971) je nadgradil Tieboutovo teorijo z obravnavo razlik med območji in obdavčitvijo v posameznih lokalnih skupnostih. Ugotovil je, da – ob nespremenjenih ostalih pogojih – na tokove selivcev vplivajo diferencialni lokalni davčni sistemi. Cebula (1974, 1990, 2002, 2009) je v svojih empiričnih raziskavah in s Curran (1978) preizkusil Tiebout-Tullockovo domnevo o vplivu lokalne fiskalne politike na tokove selitev. Potrdil je vpliv davka na nepremičnine na selitve (ibid). Tako je Cebula (2009) ugotovil, da se z dvigom davka na nepremičnine v državi *j* za p % znižajo tokovi selitev v *j* iz celotnega obravnavanega gospodarskega prostora (ZDA) za $(1 + p)^{-0,00008}$. Pri dvigu davkov za 10 % bi to pomenilo slabih osem selitev manj na milijon selivcev, kar je sicer zanemarljivo malo. Žal pa je Cebula študiral le točkovne spremembe, ne pa sprememb na tokovih iz izvora v ponor, zato je tudi determinacijski koeficient v njegovi analizi nizek. To pomanjkljivost odpravlja v tej študiji predlagani PIM.

Prihodki občin so sestavljeni iz različnih virov (6. in 7. člen Zakona o financiranju občin (Uradni list RS, št. 123/2006, 57/2008, 36/2011 in 14/2015 – ZUUJFO)): »Viri financiranja občine so prihodki občinskega proračuna od davka na nepremičnine, davka na vodna plovila, davka na promet nepremičnin, davka na dediščine in darila, davka na dobitke od klasičnih iger na srečo in drugega davka, če je tako določeno z zakonom, ki davek ureja. […] Vir financiranja občine so tudi prihodki od samoprispevka, takse, globe, koncesijske dajatve, plačila za storitve lokalnih javnih služb in drugi, če je tako določeno z zakonom, ki ureja posamezno dajatev, ali s predpisom, izdanim na podlagi zakona. […] Prihodki občine so tudi prihodki od stvarnega in finančnega premoženja občine, prejete donacije in transferni prihodki iz državnega proračuna in sredstev skladov Evropske unije. Vir financiranja občin so tudi prihodki iz dohodnine in drugih davkov, ki so v skladu z zakonom prihodek državnega proračuna, in sicer za posamezno proračunsko leto v višini skupne primerne porabe občin.« Med davčne prihodke spada tudi davek na premoženje, ki je pravi premoženjski davek, kamor uvrščamo davek na nepremičnine (davek od premoženja in nadomestilo za uporabo stavbnega zemljišča), in drugi davki za uporabo blaga in storitev, kamor uvrščamo tudi pristojbine za vzdrževanje gozdnih cest; glej tudi podatke Ministrstva za finance (2016).

V raziskavi se osredotočamo le na prihodke od davka od premoženja, nadomestila za uporabo stavbnega zemljišča, pristojbine za vzdrževanje gozdnih cest, ki bodo nadomeščeni s prihodki od novega davka na nepremičnine. Z razveljavljenim Zakonom o davku na nepremičnine (ZDavNepr, Uradni list RS, št. 101/2013 in 22/2014 – odl. US) bi davek na nepremičnine nadomestil davek od premoženja, nadomestilo za uporabo stavbnega zemljišča in pristojbino za vzdrževanje gozdnih cest. Zaradi neenotne obstoječe obdavčitve nepre-

mičnin se v Sloveniji že vrsto let pripravlja sistem davka na nepremičnine, ki bi nadomestil sedanje dajatve in odpravil slabosti obstoječe obdavčitve.

Slabosti sedanje obdavčitve nepremičnin so: neenotno določanje predmeta obdavčitve, neenotna merila za določanje davčnih zavezancev, netržne metode določanja davčne osnove, različen način določanja davčne osnove in višine dajatve ter različno opredeljevanje oprostitev in olajšav. Davek od premoženja in nadomestilo za uporabo stavbnih zemljišč sta velikokrat predmet pritožb, občinski odloki pa ustavnih pritožb in posledično razveljavitev. Nekatere nepremičnine v sistem obdavčitve sploh niso zajete, saj so občinske baze nepopolne in neažurne. Iz navedenega sledi, da dosedanji sistem občinam ne zagotavlja zadostnih davčnih prihodkov, prav tako ne obdavčitve, s katero bi lahko še dodatno vplivali na gospodarsko učinkovitost in stabilnost občin.

Filippakopoulou in Potsiou (2014) sta v študiji o obdavčitvi nepremičnin v Grčiji prišla do enake ugotovitve kot snovalci novega davka na nepremičnine v Sloveniji, in sicer da bo obdavčitev nepremičnin pravično le, ko bo davčna osnova tržna vrednost, oziroma vrednost na podlagi množičnega vrednotenja, in ko bodo v obdavčitev zajete vse nepremičnine. Režek (2004) navaja, da uvedba novega davka zahteva vnaprejšnjo jasnost razlogov zanj, njegovih ciljev in namenov ter tudi vnaprejšnje poznavanje, predvidevanje in izhodiščno usmerjanje njegovih učinkov in načinov za njihovo naknadno uravnavanje. Poudarja, da je navedeno pomembno zaradi doseganja ustrezne stopnje politične in družbene ocene glede njegove upravičenosti in učinkovitosti – saj je ena od osnovnih pravic davkoplačevalcev ravno zahteva po jasnosti ciljev oblasti ter preverjanju njihovega uresničevanja in doseganja. Treba je vedeti, kako bo nova davčna zakonodaja vplivala na življenje državljanov, kamor spada tudi ugotavljanje njihovega zadovoljstva v okolju, kjer živijo, in njihove pripravljenosti, da še naprej živijo v istem okolju. Nova davčna zakonodaja bo vplivala tako na prihodke občin kot na cene nepremičnin. Zato v članku analiziramo vpliv simultanih sprememb prihodkov občin in cen nepremičnin v občinah na lepljivost v izvoru oziroma na privlačnost za tokove selivcev v ponoru.

Pri tem posebej obravnavamo selitve v prestolnico Slovenije, ki je kljub manjši velikosti v različnih projektih o mednarodni vlogi slovenskih mest (ESPON 1.1.1., 2005) omenjena kot slovensko metropolitansko urbano območje in globalno pomembno središče. V študiji primera analiziramo vpliv spremembe prihodkov Mestne občine Ljubljana (MOL) na tokove selivcev v občino, če bi MOL nadomestila sedanje prihodke od nadomestila za uporabo stavbnega zemljišča, davka od premoženja in pristojbine za vzdrževanje gozdnih cest s pričakovanimi prihodki od davka na nepremičnine po razveljavljenem Zakonu o davku na nepremičnine (Uradni list RS, št. 101/2013 in 22/2014 – odl. US) in pri tem določila drugačno davčno stopnjo od drugih občin v Sloveniji. Pri tem smo preizkusili naslednjo domnevo:

> *Domneva 1*: S povečanjem/zmanjšanjem prihodkov Mestne občine Ljubljana (MOL) iz naslova spremembe obdavčitve rezidenčnih stanovanjskih nepremičnin se bo, ob nespremenjenih prihodkih v drugih občinah, povečalo/zmanjšalo priseljevanje v MOL.

2.3 Cene rezidenčnih nepremičnin

Vrednost mestnega zemljišča izhaja iz komunalne opremljenosti in druge infrastrukture mest ter investicij v lokalno skupnost, kar izhaja iz teorije o mestni renti, ki jo je podrobneje že izpostavil Marx v Kapitalu III/ Del VI *(Das Kapital, Kritik der politischen Ökonomie, Engels, F. (ur.), 1894),* nadgradili pa Isard (1956), Alonso (1964) in drugi prostorski ekonomisti. Enakega mnenja o vplivu infrastrukture

in investicij na rento in vrednost zemljišča v lokalni skupnosti je bil tudi politični ekonomist George Henry (1948) v svojem delu *Progress and Poverty*. Wang s sodelavci (2015) meni, da bi zato morali zviševanje vrednosti zemljišča zaradi investicij spet zajeti v lokalno skupnost prek obdavčitve zemljišča. To trditev je z razvojem modela in numeričnimi primeri povezanosti med investicijami v komunalno infrastrukturo in zajemanjem rentnih diferencialov izpostavila in dokazala Bogataj (1982) v disertaciji z naslovom *Renta kot regulator rasti urbanih aglomeracij*. Tako se na primer z javno investicijo v prometno infrastrukturo, s katero se izboljša dostopnost, doda pomembna vrednost sosednjim zasebnim zemljiščem. Takšna vrsta javnih investicij s pozitivnimi zunanjimi učinki zviša vrednost zemljišča (Drobne, Bogataj in Lisec, 2008; Lisec in Drobne, 2008), zato je državna intervencija z davkom na zemljišče upravičljiva.

Tieboutov model vpliva fiskalne politike na posameznika v lokalni skupnosti (Tiebout, 1956) so nadgradili Oates (1969), Hamilton (1975, 1983), Fischel (1975), Blake (1979). Ti avtorji so dodatno poudarili prednost davka na nepremičnine, ki se prek investicij v javne lokalne storitve vrača prebivalcem oziroma se odrazi v kapitalizirani vrednosti nepremičnin. Kapitalizacijo davka v vrednosti nepremičnine so empirično dokazali tudi Palmona in Smith (1998) ter de Bartolomé in Rosenthal (1999). Pomembna je tudi študija Haughwouta et al. (2004), v kateri so koncept Tiebout-Oatesa (Edel in Sclar, 1974) preoblikovali v Haughwout-Inmanov model, ki obravnava odnos med prihodki občin, davčnimi prihodki, davčnimi stopnjami, nedavčnimi prihodki in indeksom cen lokalnih javnih storitev. Njihov model so nadgradili Skidmore, Reese in Kang (2012) z vključitvijo davčne konkurence med različnimi območji. Med novejšimi deli bi omenili študijo Banzhaf in Oates (2013), v kateri sta avtorja potrdila, da v kapitalizirani vrednosti nepremičnin ni vključen le plačan davek na nepremičnine, temveč tudi javni dolg za financiranje občin. Proučila sta predhodne študije o kapitalizaciji davka na nepremičnine v vrednost nepremičnine in ugotovila, da le Leed v svoji študiji iz leta 1985 ni našel dokazov o navedeni kapitalizaciji davka v vrednosti nepremičnine. England (2016) je proučil literaturo glede nosilcev davčnega bremena davka na nepremičnine, ki se oddajajo v najem. Prišel je do spoznanja, da lastniki nepremičnin lahko prevalijo davek na nepremičnine na najemnike, le ko so slednji pripravljeni plačati dobrine in storitve, ki jih ponujajo lokalne skupnosti in so financirane z davkom na nepremičnine (ibid).

Tržna vrednost nepremičnine odraža pričakovanje o prihodnjih koristih zaradi rabe te nepremičnine. Glaeser (1996) je pokazal, da davek na nepremičnine tudi kratkoročno usmerjene odločevalce motivira za zagotavljanje boljših lokalnih storitev. Davek na nepremičnine tako spodbuja lokalne oblasti k večjim investicijam v prihodnjo ugodnejšo rabo nepremičnin, s čimer se zagotavljajo finančne koristi ali povečuje udobje bivanja lokalnim davkoplačevalcem (in s tem volivcem). Zaradi različnih storitev v korist rabe nepremičnine dosegajo nepremičnine v lokalni skupnosti različne vrednosti, v katerih je kapitaliziran tudi davek na nepremičnine. Tako se lahko zaradi različnih davkov po lokalnih skupnostih spreminjajo tokovi selitev. V članku razvijemo model, ki omogoči študij in vrednotenje vpliva davčne stopnje na kapitalizacijsko stopnjo, ta pa skupaj z rento rezidenčnih stanovanjskih nepremičnin vpliva na njihovo ceno. Pri tem bomo preskusili naslednjo domnevo:

> *Domneva 2*: Z znižanjem/zvišanjem stopnje obdavčitve rezidenčnih stanovanjskih nepremičnin v MOL se bo prek vpliva cen nepremičnin, ob predpostavki nespremenjenih davčnih stopnjah v drugih občinah, povečalo/zmanjšalo priseljevanje v MOL.

3 METODOLOGIJA

3.1 Podatkovni temelji

Podatke o selitvah med občinami Slovenije smo pridobili na Statističnem uradu Republike Slovenije (SURS). Na SURS smo pridobili tudi podatke o številu prebivalcev v občini, zaposlenosti, povprečnem bruto osebnem dohodku (BOD) in uporabnih stanovanjskih površinah v občini. Podatke o prihodkih občin smo pridobili na Ministrstvu za finance Republike Slovenije (MFRS). Podatke o povprečni ceni stanovanj v občini smo pridobili na Geodetski upravi Republike Slovenije (GURS). Podatke o času potovanja po najhitrejši poti z osebnim vozilom med občinskimi središči smo povzeli po Drobne in Bogataj (2011). Analizo smo izvedli za podatke iz leta 2011. Zastarelost uporabljenih podatkov je poglavitna omejitev raziskave, katere glavni prispevek je prostorski interakcijski model, ki ga predstavimo v nadaljevanju.

3.2 Prostorski interakcijski model

Vpliv faktorjev v izvoru (lepljivost, angl. *stickiness*) in ponoru (privlačnost, angl. *attractiveness*) na tokove selitev med občinami Slovenije smo analizirali v prostorskem interakcijskem modelu (Drobne in Bogataj, 2011):

$$S_{ij} = k\, K(c_{ij})^{\beta}\, \Pi_r K(g)_i^{\gamma(g)}\, K(g)_j^{\alpha(g)}, \tag{1}$$

kjer je S_{ij} ocenjena jakost toka selitev (število selivcev na leto) iz izvora i v ponor j, k je sorazmernostna konstanta, $K(c_{ij})$ je koeficient časa potovanja z osebnim vozilom iz izvora i v ponor j, $K(g)_i$ in $K(g)_j$ pa sta koeficienta obravnavane neodvisne spremenljivke g v izvoru i oziroma v ponoru j; koeficient spremenljivke je razmerje med ravnjo spremenljivke v obravnavani prostorski enoti (v našem primeru v občini) glede na povprečje na obravnavanem območju (v našem primeru v Sloveniji); koeficienti analiziranih spremenljivk so razloženi v preglednici 1.

Umerjanje modela (1) smo izvajali v programskem okolju SPSS 23.0 po metodi OLS (ang. *Ordinary Least Squares Regression*). Z regresijskimi koeficienti smo ocenjevali vplive na notranje selitve med občinami Slovenije; z regresijskim koeficientom β smo ocenjevali vpliv časa potovanja med izvorom in ponorom, z regresijskim koeficientom $\gamma(g)$ smo ocenjevali vpliv koeficienta analizirane spremenljivke v izvoru, $K(g)_i$, z regresijskim koeficientom $\alpha(g)$ pa vpliv privlačnosti koeficienta analizirane spremenljivke v ponoru, $K(g)_j$. Ko je ocenjen regresijski koeficient, tj. eksponent v potenčnem modelu (1), pozitiven, pravimo, da je vpliv spremenljivke na stalne selitve pozitiven, ko je eksponent v modelu (1) negativen, pa pravimo, da je vpliv spremenljivke negativen.

Prostorski interakcijski model (1) lahko zapišemo tudi:

$$\begin{aligned} S_{ij} = k\, K(c_{ij})^{\beta}\, & K(POP)_i^{\gamma(POP)}\, K(POP)_j^{\alpha(POP)}\, K(ZAP)_i^{\gamma(ZAP)}\, K(ZAP)_j^{\alpha(ZAP)} \cdot \\ & \cdot K(BOD)_i^{\gamma(BOD)}\, K(BOD)_j^{\alpha(BOD)}\, K(V)_i^{\gamma(V)}\, K(V)_j^{\alpha(V)} \cdot \\ & \cdot K(POB)_i^{\gamma(POB)}\, K(POB)_j^{\alpha(POB)}\, K(STP)_i^{\gamma(STP)}\, K(STP)_j^{\alpha(STP)} \cdot \end{aligned} \tag{2}$$

Preglednica 1: Analizirane spremenljivke v prostorskem interakcijskem modelu (1)

Oznaka	Spremenljivka	Definicija*	Vir
S^*_{ij}	Število selivcev iz občine izvora *i* v občino ponora *j*	Število selivcev iz občine izvora *i* v občino ponora *j*	SURS
S_{ij}	Ocenjena jakost toka selivcev iz občine izvora *i* v občino ponora *j*	Ocena števila selivcev iz občine izvora *i* v občino ponora *j* po umerjenem modelu (1)	Lastni izračun
$K(c_{ij})$	Koeficient časa potovanja z osebnim vozilom med središčem občine izvora *i* in središčem občine ponora *j*	Količnik med časom potovanja z osebnim vozilom med središčem občine izvora *i* in središčem občine ponora *j* in povprečno časovno razdaljo vseh interakcij v Sloveniji	(Drobne in Bogataj, 2011)
$K(POP_o)$	Koeficient števila prebivalcev v občini	Količnik med številom prebivalcev v občini in povprečnim številom prebivalcev v občini v Sloveniji	SURS
$K(ZAP_o)$	Koeficient stopnje zaposlenosti v občini	Količnik: ((število zaposlenih v občini / število delovno aktivnih v občini) / (število zaposlenih v Sloveniji / število delovno aktivnih v Sloveniji))	SURS
$K(BOD_o)$	Koeficient bruto osebnega dohodka na prebivalca v občini	Količnik med bruto osebnim dohodkom na prebivalca v občini in povprečnim bruto osebnim dohodkom v Sloveniji	SURS
$K(V_o)$	Koeficient povprečne neto sedanje tržne cene za kvadratni meter stanovanja v občini	Količnik med povprečno neto sedanjo tržno ceno stanovanj za kvadratni meter v občini in povprečno neto sedanjo tržno ceno stanovanj za kvadratni meter v Sloveniji	GURS
$K(POB_o)$	Koeficient prihodka občine na prebivalca v občini	Količnik: ((prihodki občine / število prebivalcev v občini) / (prihodki vseh občin v Sloveniji / število prebivalcev v Sloveniji))	MFRS
$K(STP_o)$	Koeficient uporabne stanovanjske površine v kvadratnih metrih na prebivalca v občini	Količnik: ((uporabna stanovanjska površina v kvadratnih metrih v občini / število prebivalcev v občini) / (uporabna stanovanjska površina v kvadratnih metrih v Sloveniji / število prebivalcev v Sloveniji))	SURS

Opomba: Vsi podatki so za leto 2011.

3.3 Vpliv prihodka občine na tokove selitev

Eden izmed obstoječih prihodkov občin so tudi sedanje dajatve na nepremičnine. Če vse občine povečajo vse obdavčitve v enakih odstotkih, to je za *v* %, se koeficient prihodka občine na prebivalca ne spremeni, kar sledi iz definicije tega koeficienta. Če obdavčitev nepremičnin spremeni le ena občina, na

primer občina *j* za *v* %, se spremeni koeficient občine *j*, hkrati se zaradi spremembe povprečja spremeni koeficient preostalim občinam, vendar je vpliv šibek. V študiji primera (poglavje 5) analiziramo vpliv spremembe obdavčitve nepremičnin oziroma prihodka občine na tokove priseljenih v Mestno občino Ljubljana (MOL).

Koeficient prihodka občine na prebivalca v občini ponora *j* je količnik prihodkov občine *j* na prebivalca in povprečja prihodkov vseh občin v Sloveniji: $K\left(POB\right)_j = \frac{\left(POB\right)_j}{\overline{POB}}$. Računamo tako, da se prihodki občine, kjer živi *p* odstotkov prebivalcev, povečajo za *v* % na $POB_j^* = \left(POB\right)_j . \left(1 + \frac{v_j\left(POB\right)}{100}\right)$, in predpostavljamo, da v drugih občinah živi (100 − *p*) odstotkov prebivalcev. Predpostavljamo tudi, da se v drugih občinah ta spremenljivka ne spremeni in ostane povprečje enako kot prej. Če se prihodki v izvoru ne spremenijo, za izračun faktorja oziroma relativne spremembe prihodkov v občini delimo nov koeficient (koeficient ob spremembi in po spremembi prihodkov) s starim koeficientom (koeficientom pred spremembo prihodkov).

3.4 Tržna vrednost nepremičnine kot kapitalizacija rente

Obdavčitev nepremičnin vpliva tudi na samo tržno vrednost nepremičnin. Vrednost rezidenčne stanovanjske nepremičnine *V* določajo diskontirane rente nepremičnin, ki vključujejo davek na nepremičnine. Zaradi poenostavitve predpostavimo, da gre za večno rento, podobno pa bi lahko upoštevali omejen čas uporabe nepremičnine. Kadar je *R* višina večne rente na leto, *r* stopnja donosnosti in je letni davek na nepremičnine izražen kot odstotek *u* vrednosti nepremičnine *V*, ko gre uporabnost rezidenčnih stanovanjskih enot v neskončnost, zapišemo odnos med vrednostjo nepremičnine in rentami:

$$V = \frac{\left(R - u.V\right)}{r} \rightarrow V.r = R - u.V \rightarrow V = \frac{R}{r+u}\,, \tag{3}$$

kjer je *r* + *u* kapitalizacijska stopnja. Podrobnejšo obravnavo te predpostavke sta pojasnila McDonald in McMillen (2011).

3.5 Vključitev davčnega modela v model priselitev v občino

Spremenjena razmerja v davčni stopnji pri obdavčitvi nepremičnin med občinami hkrati vplivajo na spremembo koeficienta prihodkov v občino ponora *j* in s tem na spremembo koeficienta neto sedanje tržne cene stanovanja na kvadratni meter v *j*. Sledi, da so skupni tokovi v *j*, pri nespremenjenih ostalih indikatorjih:

$$S_j\left(\tau_j \geq 0; POB, V\right) = \frac{S_j\left(\tau_j < 0; POB, V\right).\left(100 + v_j\left(POB\right)\right)^{\alpha(POB)}.100^{\gamma(POB)}}{\left(p_j.K\left(POB\right)_j.\frac{v_j\left(POB\right)}{100} + 100\right)^{\alpha(POB)+\gamma(POB)}} \cdot \frac{\left(100 + v_j\left(V\right)\right)^{\alpha(V)}.100^{\gamma(V)}}{\left\{p_j.K\left(V\right)_j.\left(\frac{v_j\left(V\right)}{100}\right) + 100\right\}^{\alpha(V)+\gamma(V)}} \cdot \tag{4}$$

kjer je $v_j(POB)$ odstotek spremembe vrednosti indikatorja POB v j, $v_j(V)$ odstotek spremembe vrednosti indikatorja V v j. τ je čas, $\tau_j < 0$ je čas pred spremembo, $\tau_j \geq 0$ je čas spremembe in po spremembi.

Analogno lahko razvijemo model za napovedovanje izvornih tokove iz občine i.

4 PARAMETRI MODELA SELITEV MED OBČINAMI SLOVENIJE

4.1 Vpliv obravnavanih spremenljivk na tokove selitev med občinami Slovenije

V preglednici 2 so rezultati regresijske analize selitev med občinami Slovenije leta 2011 v prostorskem interakcijskem modelu (2). Prilagojen delež pojasnjene variance modela je 41,1 %, kar pomeni, da na selitve najverjetneje vplivajo še drugi parametri, ki jih nismo vključili v analizo in bi jih bilo smiselno raziskati v prihodnje. Ocene večine regresijskih koeficientov v preglednici 2 so statistično značilne pri $p < 0{,}0001$, razen pri vplivih BOD v ponoru in uporabni stanovanjski površini v kvadratnih metrih na prebivalca v izvoru. Prav tako je celoten model statistično značilen (statistika F je visoka, $p \cong 0$). Vse obravnavane pojasnjevalne spremenljivke so neodvisne (VIF < 2,5), ostanki modela niso povezani (Durbin-Watsova statistika ≅ 1,8). Z izrisi smo preverili normalnost ostankov (model je v povprečju točen) in homoskedastičnost.

S primerjavo regresijskih koeficientov (RK) v preglednici 2 se pokaže, da je najpomembnejši obravnavani dejavnik, ki vpliva na selitve, čas, porabljen za potovanje iz izvora v ponor (primerjaj standardizirane RK). Povečanje časa, porabljenega za potovanje na delo, negativno vplivala na tokove selivcev (β = –2,388) oziroma jih zmanjšuje: več selitev se torej izvede na krajše kot na daljše razdalje.

Pomembni pojasnjevalni spremenljivki sta tudi prihodek občin $K(POB)$ in število prebivalcev $K(POP)$. Število prebivalcev v občini vpliva premo sorazmerno na logaritem vrednosti toka selitev – tako v občini izvora kot tudi v občini ponora. Na primer: regresijski koeficient $\gamma(POP) = 1{,}297$ pomeni, da se pri spremembi razmerja med številom prebivalcev občine izvora in povprečnim številom prebivalcev v slovenskih občinah za p odstotkov spremeni tok selitev iz občine izvora s faktorjem $\left(1+\frac{p}{100}\right)^{1{,}297}$. Podobno pomeni regresijski koeficient $\alpha(POP) = 1{,}257$, da se pri spremembi razmerja med številom prebivalcev občine ponora in povprečnim številom prebivalcev v slovenskih občinah za p odstotkov spremeni tok selitev v občino ponora s faktorjem $\left(1+\frac{p}{100}\right)^{1{,}257}$. Vpliv števila prebivalcev v občini na selitev je podoben v ponoru ($\alpha(POP) = 1{,}257$) in izvoru ($\gamma(POP) = 1{,}297$). Razlike v regresijskih koeficientih prilivov in odlivov prebivalstva linearizirane modela so na robu dveh standardnih napak ocene ($SE = 0{,}019$).

Vpliv prihodka občine na prebivalca, $K(POB)$, je premo sorazmeren z logaritmom vrednosti toka selitev – tako v občini izvora ($\gamma(POB) = 1{,}420$) kot v občini ponora ($\alpha(POB) = 1{,}375$). S povečanjem prihodka občine na prebivalca se torej poveča obseg odseljevanja (zmanjša lepljivost) v občini izvora in poveča obseg priseljevanja (zveča privlačnost) v občini ponora. Tu so razlike v regresijskih koeficientih linearizirane modela celo znotraj ene standardne napake ocene ($SE = 0{,}066$).

Preglednica 2: Rezultati regresijske analize selitev med občinami Slovenije leta 2011 v modelu (2)

R	0,641	Meritev	43.890
R^2	0,411	ANOVA statistika F	2.354,13
Prilagojen R^2	0,411	ANOVA značilnost P	0
Standardna napaka	2,636		

Spremenljivka (RK)	Vrednost (RK)	Standardna napaka RK	Standardiziran RK	t	p
Konstanta	2,12E-21	1,379		–34,519	0
$K(c_{ij})$	–2,388	0,023	–0,405	–105,620	0
$K(POP_i)$	1,297	0,019	0,374	67,555	0
$K(POP_j)$	1,257	0,019	0,363	65,452	0
$K(ZAP_i)$	–0,356	0,061	–0,027	–5,856	<0,0001
$K(ZAP_j)$	–0,345	0,061	–0,026	–5,674	<0,0001
$K(BOD_i)$	–0,501	0,122	–0,017	4,106	<0,0001
$K(BOD_j)$	0,400	0,122	0,014	3,272	0,001
$K(V_i)$	0,875	0,125	0,033	6,980	<0,0001
$K(V_j)$	0,787	0,125	0,030	6,276	<0,0001
$K(POB_i)$	1,420	0,066	0,095	21,596	0
$K(POB_j)$	1,375	0,066	0,092	20,903	0
$K(STP_i)$	0,094	0,040	0,010	2,335	0,02
$K(STP_j)$	0,233	0,040	0,025	5,791	<0,0001

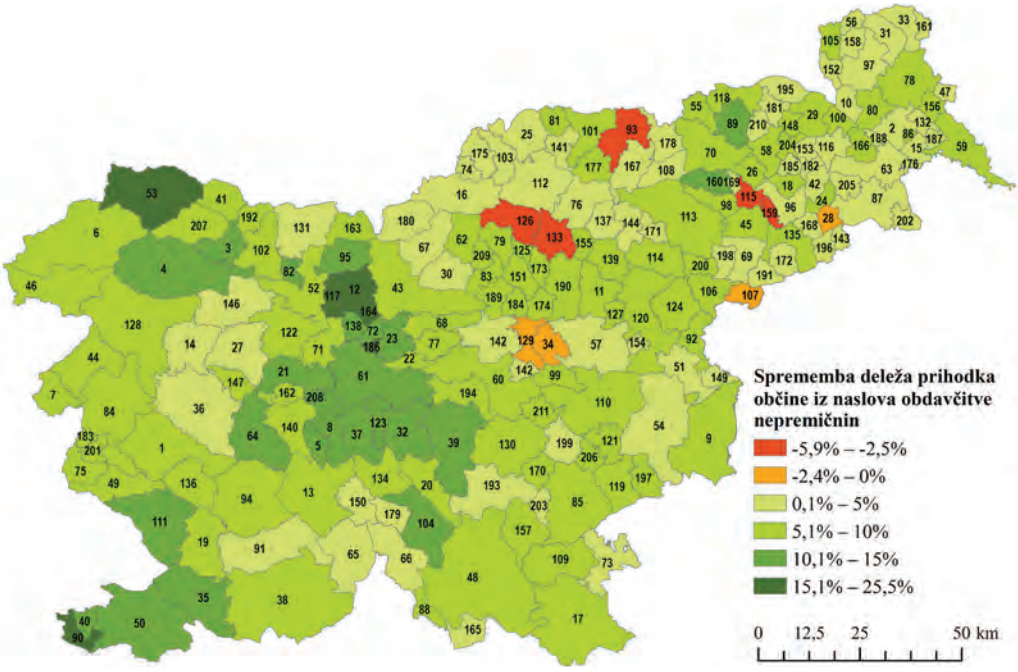
Vpliv povprečne neto sedanje tržne cene stanovanja za kvadratni meter v občini, $K(V)$, je premo sorazmeren z logaritmom toka selitev – tako v občini izvora ($\gamma(V) = 0{,}875$) kot v občini ponora ($\alpha(V) = 0{,}787$). S povečanjem povprečne neto sedanje tržne cene kvadratnega metra stanovanja v občini se poveča obseg odseljevanja (manjša lepljivost) in poveča obseg priseljevanja (večja privlačnost). Tudi tu so razlike v regresijskih koeficientih lineariziranega modela znotraj ene standardne napake ocene ($SE = 0{,}125$).

4.2 Sprememba prihodka slovenskih občin zaradi uvedbe davka na nepremičnine

V večini evropskih držav je davek na nepremičnine prihodek občin, enako se predvideva v Sloveniji. Izračunali smo delež prihodkov od obdavčitve nepremičnin v sedanjem sistemu glede na vse prihodke občin, delež prihodkov od davka na nepremičnine v novih prihodkih občin ter spremembo v prihodkih iz naslova obdavčitve nepremičnin; rezultati so v prilogi 1 (razvrščeno od občine z največjo do občine z najmanjšo spremembo). Prostorsko analizo spremembe v prihodkih občin iz naslova obdavčitve nepremičnin obravnavanih območij za selivce analiziramo z analitičnim kartografskim prikazom (slika 1).

Iz rezultatov v prilogi 1 je mogoče razbrati, da bi se delež prihodkov zmanjšal v samo od 9 od 211 občinah; te občine so (v vrstnem redu zmanjševanja deleža prihodkov): Trbovlje, Rogatec, Gorišnica, Hrastnik, Podvelka, Velenje, Šoštanj, Starše, Hajdina (glej tudi sliko 1). S slike 1 je tudi razvidno, da bi se prihodki občin zahodne slovenske regije na ravni NUTS 2 ob enaki davčni stopnji 0,15 % v splošnem bolj povečali kot prihodki občin vzhodne slovenske regije. Preglednica 3 prikazuje rezultate izračunov za Mestno občino

Ljubljana in povprečje za vse slovenske občine. Iz rezultatov je mogoče razbrati, da bi se zaradi spremembe obdavčitve nepremičnin v povprečju v slovenskih občinah povečali prihodki iz naslova obdavčitve nepremičnin na prebivalca; in sicer za približno 140 % (s sedanjih 52,75 EUR/preb. na 128,87 EUR/preb.). V MOL bi sprememba obdavčitve povzročila povečanje prihodkov od obdavčitve nepremičnin za 90 % (s sedanjih 174,51 EUR/preb. na 333,33 EUR/preb.). Z zvišanjem obdavčitve bi se povečali prihodki slovenskih občin v povprečju za 14,3 %, konkretno v MOL bi se prihodki povečali za 15 %.



Slika 1: Sprememba deleža prihodka občine iz naslova obdavčitve nepremičnin (delež prihodka občine od davka na nepremičnine – delež sedanjih dajatev na nepremičnine (delež sedanjega prihodka občine od nadomestila za uporabo stavbnega zemljišča + delež sedanjega prihodka občine od davka od premoženja + delež sedanjega prihodka občine od pristojbine za vzdrževanje gozdnih cest); šifrant občin je v prilogi 1).

Preglednica 3: Izračun za Mestno občino Ljubljano in povprečje vseh slovenskih občin

	Mestna občina Ljubljana	Povprečje slovenskih občin
Število prebivalcev (1. polletje)	280.140	9.729
Število odseljenih	14.109	414,69
Število priseljenih	13.414	414,69
Sedanji prihodki od nadomestila, davka od premoženja in pristojbine za		
vzdrževanje gozdnih cest na prebivalca	174,51 EUR/preb.	52,75 EUR/preb.
Prihodki od davka na nepremičnine na prebivalca	333,33 EUR/preb.	128,87 EUR/preb.
Sedanji prihodki občin na prebivalca	1.039,60 EUR/preb.	1.078,10 EUR/preb.
Novi prihodki občin na prebivalca	1.198,42 EUR/preb.	1.154,21 EUR/preb.

Za določitev faktorja spremembe tokov v občino ponora *j* zaradi spremenjenih prihodkov v občini ponora *j* je treba koeficient po spremembi prihodkov občine *j* deliti s koeficientom pred spremembo prihodkov občine *j*: $K(POB^*_j)/K(POB_j)$.

5 ŠTUDIJA PRIMERA ZA MESTNO OBČINO LJUBLJANA

5.1 Vpliv spremembe prihodka občine

Predpostavimo, da se v MOL odločijo za davčno stopnjo 0,15 %, določeno po razveljavljenem Zakonu o davku na nepremičnine (ZDavNepr; zdaj je približno 0,09 %), medtem ko se preostale občine odločijo, da bodo davčno stopnjo prilagodile tako, da se dajatve in prihodki ohranjajo na ravni povprečij sedanjih nadomestil in drugih dajatev ter prihodkov. Razveljavljeni ZdavNepr omogoča nekaj svobode pri izbiri višine dajatev z določbo, da vsaka občina lahko davčno stopnjo zniža ali zviša za največ 50 % določene v zakonu. Z določitvijo davčne stopnje 0,15 % v MOL bo POB^*_j = 1.198,42 EUR/preb., kot je razvidno iz preglednice 3, povprečni stari prihodki drugih občin pa ostanejo na isti ravni. Za analizo v MOL smo povzeli podatke: odstotek prebivalcev MOL: $p_j/100 = 0{,}14$ in podatke s preglednice 3: POB_j = 1.039,60 EUR/preb.; $\overline{POB}$ = 1.078,10 EUR/preb.; POB^*_j = 1.198,42 EUR/preb. Razmerje med novim in starim koeficientom prihodkov MOL je 1,13. Upoštevamo:

$$\alpha(POB) = 1{,}375 \Rightarrow \left[\frac{K(POB)^*_j}{K(POB)_j}\right]^{\gamma(POB)} = 1{,}1297^{1{,}375} = 1{,}1825.$$

Ob predpostavki, da se prihodki drugih občin ne spremenijo, pridobimo njihovo povprečje *x* brez MOL 0,14∗1.039,60+0,86∗*x* = 1.078,10, iz česar sledi povprečje drugih občin: $\overline{POB}_{\neq j}$ = 1.084,37 EUR/preb. oziroma $\overline{POB}^*$ = 1.100,34 EUR/preb.. Pri tem je predvideno razmerje med novimi in starimi povprečji prihodkov na prebivalca drugih občin, kar vpliva na spremembo koeficientov drugih občin (na vse enako), ki je 0,979788. Upoštevamo:

$$\gamma\left(POB\right) = 1{,}420 \Rightarrow \left[\frac{K\left(POB\right)^*_i}{K\left(POB\right)_i}\right]^{\alpha(POB)} = 0{,}9798^{1{,}420} = 0{,}9714$$

od tod sledi sprememba tokov zaradi spremembe prihodkov MOL:

$S_j(\tau_j \geq 0; POB) = S_j(\tau_j < 0; POB) * 1.1825 * 0.9714 = 1.1487.$

Torej bi se tok selivcev v MOL zaradi višjih prihodkov občine povečal za 14,9 %.

5.2 Vpliv spremembe tržne vrednosti nepremičnine

Pri izračunu privlačnosti MOL za tokove selivcev je treba upoštevati še vpliv spremembe tržne vrednosti nepremičnine *V*. Na podlagi podatkov MOL iz priloge 1 in predpostavke o novi davčni stopnji 0,15 % smo izračunali povprečno davčno stopnjo za druge občine u = 0,09 iz enačbe: $\left(\frac{27{,}81}{16{,}79}\right)\mathrm{u} = 0{,}15 \Rightarrow 1{,}656\mathrm{u} = 0{,}15$. To pomeni spremembo vrednosti nepremičnine iz $V = \frac{R}{r+u}$ v $V^* = \frac{R}{r+1{,}656u}$. Predpostavimo, da za vse občine velja enak *r* in da poznamo povprečno rento v Sloveniji $\overline{R}$, pri čemer je ta v MOL *a*-krat tolikšna

kot v povprečju v drugih občinah Slovenije, torej lahko pišemo:

$$\overline{R} = \frac{0{,}86R_j}{a} + 0{,}14R_j.$$

Predpostavimo, da je obrestna mera 4 % (Banka Slovenije, 2015) in $a = 2$. Razmerje med novim in starim koeficientom neto sedanje tržne cene stanovanja na kvadratni meter koeficientov MOL znaša: $\frac{K(V)_j^*}{K(V)_j} = \frac{4{,}09}{1{,}756 * (0{,}57r + 0{,}712u)} = \frac{4{,}09}{4{,}139} = 0{,}988$. Upoštevajoč:

$$\alpha(V) = 0{,}787 \Rightarrow \left[\frac{K(V)_j^*}{K(V)_j}\right]^{\alpha(V)} = 0{,}988^{0{,}787} = 0{,}9905.$$

Upoštevajoč $\alpha(V) = 0{,}787$, znaša predvideno razmerje med novim in starim koeficientom neto sedanje tržne cene stanovanja na kvadratni meter v drugih občinah:

$$\gamma(V) = 0{,}875 \Rightarrow \left[\frac{K(V)_i^*}{K(V)_i}\right]^{\gamma(V)} = \left[\frac{100}{0{,}14 * 1 * 0{,}656 + 100}\right]^{0{,}875} = 0{,}9992.$$

Od tod sledi sprememba tokov zaradi spremembe neto sedanje tržne cene stanovanja na kvadratni meter v MOL:

$$S_j(\tau_j \geq 0;\ V) = S_j(\tau_j < 0;\ V) * 0.9905 * 0.9992 = 0.9826.$$

Torej bi se tok selivcev v MOL zaradi nižje neto sedanje tržne cene stanovanja na kvadratni zmanjšal za 1,74 %.

5.3 Vpliv spremembe prihodkov in tržne vrednosti nepremičnin

Zvišanje davka na nepremičnine v MOL povzroči zvišanje prihodka MOL in znižanje neto sedanje tržne cene stanovanj v MOL, od tod sledi celotna sprememba tokov selivcev v MOL:

$$S_j(\tau_j \geq 0) = S_j(\tau_j < 0) * 1.1487 * 0.9897(\tau_j < 0) = 1.1369 * S_j(\tau_j < 0).$$

Tok priseljencev se bo kljub višjemu davku, ki znižuje privlačnost občine, povečal za 13,7 %.

6 RAZPRAVA

Poglavitni prispevek te raziskave je prostorski interakcijski model, s katerim vrednotimo vpliv davčne nepremičninske politike in vpliv prihodkov občine na notranje selitve. V preglednici 2 so rezultati regresijske analize selitev med občinami Slovenije leta 2011 v prostorskem interakcijskem modelu (2). Prilagojen delež pojasnjene variance modela je 41,1 %, kar pomeni, da na selitve najverjetneje vplivajo še drugi parametri, ki jih nismo vključili v analizo in bi jih bilo smiselno raziskati v prihodnje. Ocene večine regresijskih koeficientov v preglednici 2 so statistično značilne pri $p < 0{,}0001$, razen pri vplivih BOD v ponoru in uporabni stanovanjski površini v kvadratnih metrih na prebivalca v izvoru. Prav tako je celoten model statistično značilen (statistika F je visoka, $p \cong 0$). Vse obravnavane pojasnjevalne spremenljivke so neodvisne (VIF < 2,5), ostanki modela niso povezani (Durbin-Watsova statistika ≅ 1,8). Z izrisi smo preverili normalnost ostankov (model je v povprečju točen) in homoskedastičnost.

Rezultate kljub omejitvi, da se nanašajo na leto 2011, v nadaljevanju komentiramo. Primerjava regresijskih koeficientov (eksponentov modela) je pokazala, da spreminjanje vrednosti vseh pojasnjevalnih spremenljivk pomembno vpliva na tokove selitev; na privlačnost občin ponora za selivce in tudi na lepljivost občin izvora za selivce. Na tokove selitev pomembno vplivata prihodek občin in povprečna neto sedanja tržna cena kvadratnega metra stanovanj – to velja tako v izvoru kot v ponoru. Kljub razvitemu splošnemu modelu (2) smo se v članku osredotočili na vprašanje privlačnosti občin kot ponorov selitvenih tokov. Z višanjem prihodkov in sedanje tržne cene kvadratnega metra stanovanj se tokovi ob postavljenih parametrih kljub temu zvišujejo, saj prihodki občin, ki prispevajo v vlaganja v javne dobrine občine, pritegujejo močneje kot odbijajo sami davki. To še posebej velja za Mestno občino Ljubljana (glej poglavje 5).

Ugotovili smo tudi, da bi sprememba obdavčitve nepremičnin v povprečju v vseh slovenskih občinah povzročila za 7 % višje prihodke občin na prebivalca (s 1.078,10 EUR/preb. na 1.154,21 EUR/preb.). V večini občin, natančneje v 202 občinah, bi se delež prihodkov povečal, le v devetih občinah bi se zmanjšal. Občine, v katerih bi se delež prihodkov zmanjšal, so Trbovlje, Rogatec, Gorišnica, Hrastnik, Podvelka, Velenje, Šoštanj, Starše, Hajdina (glej tudi prilogo 1). S slike 1 je razvidna v splošnem višja rast prihodkov občin zahodne slovenske regije ob enaki davčni stopnji 0,15 % kot rast prihodkov občin vzhodne slovenske regije.

V študiji primera se je obdavčitev nepremičnin spremenila le v MOL, medtem ko smo za ostale občine predpostavili, da bo obdavčitev nepremičnin ostala na ravni sedanjih dajatev. V MOL bi se s spremembo obdavčitve nepremičnin povečali prihodki in znižale cene nepremičnin, kar bi skupaj povzročilo povečanje toka selivcev v Ljubljano za 15,4 %. Sprememba obdavčitve ima precejšen vpliv na povečanje prihodkov in manjši vpliv na spremembe cen stanovanjskih nepremičnin (posamezni vpliv, vpliv prihodkov in vpliv cen so podrobneje obrazloženi pri obravnavi domnev v nadaljevanju). Občina si tako z zvišanjem prihodkov iz naslova obdavčitve nepremičnin zviša gospodarsko stabilnost.

V študiji primera smo *domnevo 1*, da se bo s povečanjem/zmanjšanjem prihodkov MOL iz naslova spremembe obdavčitve rezidenčnih stanovanjskih nepremičnin, ob nespremenjenih prihodkih ostalih občin, povečalo/zmanjšalo priseljevanje v MOL, *potrdili*. Ob zvišanju davčne stopnje na 0,15 % (glej tudi preglednico 3) bi MOL postala privlačnejša za tokove selivcev iz naslova povečanih prihodkov občin. Izračuni kažejo, da se tok v MOL z naslova diferenciranih prihodkov občin, če MOL dvigne prihodke s 1.039,60 EUR/preb. na 1.198,42 EUR/preb., ob nespremenjenih prihodkih preostalih občin zviša za 14,78 %.

Domnevo 2, da bo znižanje/zvišanje stopnje obdavčitve rezidenčnih stanovanjskih nepremičnin v MOL prek vpliva cen nepremičnin, ob predpostavki nespremenjenih davčnih stopenj v drugih občinah, povečalo/zmanjšalo priseljevanje v MOL, smo – ob predpostavki, da je obrestna mera 4 % in renta v MOL dvakrat tolikšna, kot je v povprečju v drugih občinah – *potrdili*. Z zvišanjem davčne stopnje na 0,15 % in hkratno ukinitvijo obstoječih dajatev na nepremičnine (davka od premoženja, nadomestila za uporabo stavbnega zemljišča in pristojbine za vzdrževanje gozdnih cest) bi se zmanjšal tok priseljencev zaradi spremembe davčne stopnje v MOL za 1,74 %, vendar pa je skupen vpliv prihodkov občine in cen nepremičnin dejansko pozitiven.

7 ZAKLJUČEK

V članku smo v prostorskem interakcijskem modelu analizirali tokove selitev med občinami Slovenije leta 2011. Rezultat analize je PIM, ki bi ga lahko občine uporabljale pri oblikovanju politike načrtovanja razvoja. Izvirnost navedenega pristopa je vključitev davčnega modela v predhodno razvit PIM (Drobne in Bogataj, 2005, 2009, 2011, 2013).

Na dinamiko selitev poleg časa, namenjenega za potovanje, bistveno vpliva sprememba v prihodku občine na prebivalca. Bogatejše občine (z več prihodka na prebivalca) so za selivce privlačnejše. Zato bi bilo smiselno v prihodnosti osvetliti pomembnost fiskalne politike. Z davki namreč pomembno vplivamo na velikost prihodkov občine in hkrati financiramo infrastrukturo ter druge strukture v prostoru. Uspešna fiskalna politika, ki pelje regijo ali lokalno skupnost v dolgoročno uravnoteženo, okolju prijazno rast, je namreč pomembna tudi za usklajen prometno-okoljski razvoj te regije ali lokalne skupnosti (Bogataj, 1982).

Rezultati raziskave kažejo, da so selivci odzivni tudi na spremembe v povprečni neto sedanji tržni ceni kvadratnega metra stanovanj. Izhajajoč iz dejstva, da na selitve precej vplivajo prihodki občin in povprečna neto sedanja tržna cena kvadratnega metra stanovanj, je analiza obdavčitve nepremičnin nujna za doseganje trajnostnega razvoja slovenskih občin. Vpliv davka na nepremičnine bo viden tudi s spremenjeno povprečno bruto sedanjo tržno vrednostjo kvadratnega metra stanovanja, kar bo vplivalo na ponudbo in povpraševanje po nepremičninah in posledično na selitve. V Sloveniji davek na nepremičnine vpliva na spremembo prihodka občine, ker bo kot dosedanje dajatve sestavni del občinskih prihodkov. Občine z višino prihodkov vplivajo na ponudbo javnih storitev in dobrin, sedanjo tržno ceno kvadratnega metra stanovanj, rast mest ter končno na stalne in začasne selitve kot tudi na delovno mobilnost. Ti tokovi pa so merljiv kazalnik privlačnosti in lepljivosti občin.

V nadaljnjih raziskavah bi bilo smiselno najprej odpraviti poglavitno omejitev te raziskave ter analizirati vpliv davčne nepremičninske politike in prihodkov občine na notranje selitve z novejšimi podatki. Smiselno bi bilo tudi povečati obseg analiziranih pojasnjevalnih spremenljivk, ki vplivajo na dinamiko selitev. V zadnjih letih selitve v Sloveniji nadomešča delovna mobilnost (Apohal Vučkovič et al., 2009; Drobne, Rajar in Lisec, 2013), zato bi bilo pomembno proučevanje delovne mobilnosti hkrati s selitvami v posameznih občinah in v različnih časovnih obdobjih. V prispevku smo poglobili študijo o vplivu fiskalne politike na privlačnost občin. V prihodnje bi veljalo proučiti še vpliv na lepljivost občin in v nadaljevanju neto prirast prebivalstva zaradi neto selitev.

Literatura in viri:

Glej literaturo na strani 666.

Priloga 1: Delež sedanjih dajatev v prihodku občine, delež davka na nepremičnine v novih prihodkih občine ter sprememba prihodka občine iz naslova obdavčitve nepremičnin

Šifra	Občina	A	B	C	Šifra	Občina	A	B	C	Šifra	Občina	A	B	C
53	Kranjska Gora	12,50	37,99	25,48	13	Cerknica	6,45	13,63	7,18	179	Sodražica	1,37	5,85	4,48
12	Cerklje na Gorenjskem	6,17	25,05	18,88	201	Renče-Vogrsko	5,39	12,52	7,14	193	Žužemberk	2,25	6,71	4,46
186	Trzin	16,97	35,70	18,74	127	Štore	4,11	11,25	7,13	178	Selnica ob Dravi	5,22	9,64	4,42
90	Piran	11,69	28,31	16,62	120	Šentjur	2,19	9,32	7,13	74	Mežica	2,95	7,32	4,37
164	Komenda	6,17	22,33	16,16	192	Žirovnica	6,53	13,57	7,03	154	Dobje	2,12	6,48	4,37
212	Mirna	6,02	21,17	15,15	174	Prebold	4,86	11,88	7,02	91	Pivka	5,09	9,41	4,31
117	Šenčur	5,21	20,22	15,01	79	Mozirje	2,12	9,11	6,99	108	Ruše	10,35	14,65	4,30
89	Pesnica	-5,63	9,17	14,80	7	Brda	3,47	10,41	6,94	10	Tišina	1,74	6,04	4,30
72	Mengeš	9,21	23,72	14,50	44	Kanal	7,51	14,39	6,89	210	Sveti Jurij v Slo. goricah	2,10	6,38	4,28
160	Hoče-Slivnica	4,38	18,54	14,16	110	Sevnica	2,28	9,15	6,87	169	Miklavž na Drav. polju	6,41	10,68	4,28
8	Brezovica	3,95	17,82	13,87	70	Maribor	12,88	19,62	6,74	153	Cerkvenjak	1,54	5,73	4,18
40	Izola	8,30	22,14	13,84	6	Bovec	3,07	9,81	6,73	181	Sveta Ana	1,52	5,64	4,12
208	Log-Dragomer	4,25	17,86	13,61	157	Dolenjske Toplice	3,97	10,60	6,63	137	Vitanje	2,69	6,81	4,12
3	Bled	10,69	24,29	13,60	184	Tabor	2,45	9,07	6,62	14	Cerkno	2,81	6,92	4,11
50	Koper	17,23	29,73	12,50	109	Semič	3,22	9,81	6,59	146	Železniki	4,09	8,19	4,10
4	Bohinj	6,18	18,62	12,44	134	Velike Lašče	2,86	9,41	6,55	152	Cankova	3,27	7,35	4,08
82	Naklo	14,65	26,74	12,08	22	Dol pri Ljubljani	7,60	14,14	6,54	202	Središče ob Dravi	5,51	9,49	3,98
35	Hrpelje-Kozina	4,73	16,53	11,79	81	Muta	2,61	9,15	6,54	31	Gornji Petrovci	3,32	7,23	3,91
39	Ivančna Gorica	1,18	12,88	11,70	122	Škofja Loka	11,12	17,65	6,53	198	Makole	0,69	4,60	3,91
123	Škofljica	5,01	16,56	11,54	38	Ilirska Bistrica	3,45	9,89	6,44	172	Podlehnik	1,83	5,69	3,86
5	Borovnica	3,57	15,10	11,54	183	Šempeter-Vrtojba	14,68	21,11	6,43	116	Sveti Jurij ob Ščavnici	1,50	5,32	3,82
95	Preddvor	4,30	15,81	11,51	99	Radeče	2,82	9,21	6,38	30	Gornji Grad	2,50	6,30	3,81
104	Ribnica	4,30	15,64	11,34	48	Kočevje	3,32	9,67	6,35	67	Luče	1,00	4,78	3,78
61	Ljubljana	16,79	27,81	11,03	60	Litija	5,32	11,64	6,31	175	Prevalje	6,08	9,79	3,71
23	Domžale	9,69	20,41	10,72	46	Kobarid	2,53	8,74	6,21	165	Kostel	1,23	4,94	3,70
138	Vodice	3,58	14,24	10,66	92	Podčetrtek	3,85	9,97	6,12	2	Beltinci	4,37	8,00	3,63
37	Ig	4,67	15,23	10,56	55	Kungota	1,53	7,60	6,07	182	Sveti Andraž v Slo. gor.	2,61	6,19	3,57
111	Sežana	7,36	17,83	10,47	128	Tolmin	3,31	9,35	6,04	176	Razkrižje	1,65	5,15	3,50
32	Grosuplje	6,03	16,34	10,31	166	Križevci	2,25	8,27	6,01	132	Turnišče	2,33	5,81	3,48
64	Logatec	6,53	16,77	10,24	26	Duplek	3,03	9,04	6,01	51	Kozje	2,10	5,56	3,46
21	Dobrova-Polhov Gradec	2,64	12,81	10,17	84	Nova Gorica	10,77	16,71	5,94	66	Loški Potok	2,64	6,00	3,36
151	Braslovče	3,09	12,86	9,77	62	Ljubno	2,28	8,21	5,92	69	Majšperk	1,15	4,49	3,34
113	Slovenska Bistrica	3,07	12,83	9,76	147	Žiri	5,00	10,92	5,92	185	Trnovska vas	2,64	5,84	3,20

Šifra	Občina	A	B	C
58	Lenart	3,12	12,81	9,69
77	Moravče	4,49	14,06	9,57
43	Kamnik	6,33	15,82	9,49
71	Medvode	9,60	18,99	9,40
59	Lendava	4,99	14,33	9,34
80	Murska Sobota	10,61	19,93	9,32
170	Mirna Peč	1,77	10,68	8,91
102	Radovljica	8,96	17,84	8,88
139	Vojnik	1,79	10,59	8,80
190	Žalec	4,54	13,31	8,77
119	Šentjernej	3,36	12,08	8,72
140	Vrhnika	6,80	15,31	8,51
207	Gorje	4,21	12,72	8,50
52	Kranj	12,01	20,46	8,46
173	Polzela	4,90	13,31	8,41
211	Šentrupert	4,31	12,70	8,39
130	Trebnje	5,09	13,44	8,35
98	Rače-Fram	7,24	15,58	8,34
156	Dobrovnik	3,97	12,30	8,33
155	Dobrna	2,28	10,57	8,29
78	Moravske Toplice	4,96	13,22	8,26
85	Novo mesto	11,52	19,68	8,16
206	Šmarješke Toplice	3,49	11,59	8,10
68	Lukovica	7,66	15,74	8,09
75	Miren-Kostanjevica	2,52	10,60	8,08
9	Brežice	3,39	11,40	8,01
49	Komen	2,53	10,49	7,96
162	Horjul	3,61	11,56	7,95
136	Vipava	5,05	12,94	7,89
17	Črnomelj	2,79	10,60	7,81
19	Divača	2,22	10,01	7,78
200	Poljčane	4,67	10,51	5,84
177	Ribnica na Pohorju	2,81	8,62	5,81
105	Rogašovci	0,10	5,89	5,79
125	Šmartno ob Paki	6,20	11,96	5,76
194	Šmartno pri Litiji	3,93	9,60	5,67
100	Radenci	7,73	13,40	5,67
18	Destrnik	2,09	7,72	5,63
88	Osilnica	1,31	6,92	5,61
94	Postojna	9,29	14,89	5,59
24	Dornava	2,26	7,84	5,58
101	Radlje ob Dravi	5,09	10,63	5,53
209	Rečica ob Savinji	1,82	7,34	5,52
135	Videm	1,76	7,27	5,51
204	Sveta Trojica v Slo. g.	2,41	7,89	5,48
11	Celje	14,08	19,41	5,34
45	Kidričevo	9,81	15,03	5,22
20	Dobrepolje	4,57	9,76	5,19
29	Gornja Radgona	8,11	13,29	5,18
83	Nazarje	7,26	12,41	5,15
197	Kostanjevica na Krki	3,73	8,86	5,14
41	Jesenice	8,28	13,38	5,10
124	Šmarje pri Jelšah	4,28	9,37	5,10
163	Jezersko	4,42	9,48	5,06
189	Vransko	3,96	8,97	5,01
144	Zreče	4,26	9,25	5,00
73	Metlika	1,93	6,86	4,93
96	Ptuj	5,62	10,54	4,92
42	Juršinci	2,38	7,29	4,90
76	Mislinja	3,19	7,99	4,80
195	Apače	1,84	6,62	4,79
27	Gorenja vas-Poljane	3,25	7,99	4,74
167	Lovrenc na Pohorju	3,56	6,67	3,12
142	Zagorje ob Savi	4,85	7,94	3,09
36	Idrija	6,72	9,66	2,94
47	Kobilje	1,30	4,19	2,89
187	Velika Polana	1,00	3,82	2,82
205	Sveti Tomaž	2,74	5,54	2,81
57	Laško	6,96	9,72	2,76
149	Bistrica ob Sotli	2,32	5,00	2,68
97	Puconci	4,20	6,85	2,65
112	Slovenj Gradec	6,67	9,31	2,64
199	Mokronog-Trebelno	1,43	3,94	2,51
56	Kuzma	3,60	6,07	2,47
161	Hodoš	1,37	3,72	2,35
25	Dravograd	8,05	10,30	2,25
196	Cirkulane	3,03	5,14	2,11
87	Ormož	7,42	9,31	1,89
191	Žetale	0,99	2,85	1,86
54	Krško	6,48	8,29	1,81
203	Straža	11,08	12,84	1,76
65	Loška dolina	5,64	7,39	1,75
143	Zavrč	1,98	3,66	1,68
33	Šalovci	3,94	5,32	1,38
158	Grad	3,04	4,27	1,23
141	Vuzenica	5,82	7,04	1,22
168	Markovci	6,02	6,79	0,77
16	Črna na Koroškem	4,51	5,08	0,57
103	Ravne na Koroškem	11,54	11,78	0,24
129	Trbovlje	9,73	9,06	-0,67
107	Rogatec	6,94	6,22	-0,72
28	Gorišnica	9,64	8,54	-1,11
34	Hrastnik	7,72	6,44	-1,28

Šifra	Občina	A	B	C	Šifra	Občina	A	B	C	Šifra	Občina	A	B	C
106	Rogaška Slatina	7,21	14,90	7,69	171	Oplotnica	2,93	7,64	4,71	93	Podvelka	6,96	4,37	-2,59
121	Škocjan	2,78	10,43	7,65	15	Črenšovci	2,00	6,70	4,71	133	Velenje	16,11	12,97	-3,14
118	Šentilj	2,47	10,01	7,54	131	Tržič	4,65	9,35	4,69	126	Šoštanj	13,43	9,62	-3,81
114	Slovenske Konjice	4,48	11,88	7,40	180	Solčava	0,63	5,30	4,67	115	Starše	12,61	8,76	-3,85
86	Odranci	2,48	9,70	7,21	150	Bloke	3,83	8,39	4,56	159	Hajdina	16,74	10,82	-5,91
148	Benedikt	1,96	9,16	7,20	63	Ljutomer	7,08	11,62	4,54					
1	Ajdovščina	6,23	13,42	7,19	188	Veržej	5,67	10,18	4,51					

Opombe: A – sedanji prihodki od nadomestila, davka od premoženja in pristojbine za vzdrževanje gozdnih cest kot % prihodka občine; B – davek na nepremičnine kot % prihodka občine; C - sprememba v %.

Zahvala

Raziskovalno delo je bilo delno sofinancirano iz Raziskovalnih programov P2-0227 (Geoinformacijska infrastruktura in trajnostni prostorski razvoj Slovenije) in P5-0398 (Lokacija in raba mestnih zemljišč v starajočih se regijah: obnašanje zemljiške rente v postindustrijski družbi).

Acknowledgement

Research work was partly supported by the Research Programmes P2-0227 (Geoinformation infrastructure and sustainable spatial development of Slovenia) and P5-0398 (Location and urban land use in aging regions: toward a general theory of land rent in postindustrial age).

Janež P., Bogataj M., Drobne S. (2016). Vpliv davčne nepremičninske politike in prihodkov občin na notranje selitve: študija primera za Mestno občino Ljubljana. Geodetski vestnik, 60 (4): 644-684. DOI: 10.15292/geodetski-vestnik.2016.04.644-684

Mag. Petra Janež, univ. dipl. ek.
Fakulteta za organizacijske študije v Novem mestu
Ulica talcev 3, SI-8000 Novo mesto
e-naslov: petra.janez.1@gmail.com

Viš. pred. dr. Samo Drobne, univ. dipl. inž. geod.
Univerza v Ljubljani, Fakulteta za gradbeništvo in geodezijo
Jamova cesta 2, SI-1000 Ljubljana
e-naslov: samo.drobne@fgg.uni-lj.si

Prof. dr. Marija Bogataj, univ. dipl. mat.
MEDIFAS – Mediteranski inštitut za sodobne študije
Mednarodni prehod 6, SI-5290 Šempeter pri Gorici,
Fakulteta za organizacijske študije v Novem mestu,
Ulica talcev 3, SI-8000 Novo mesto
e-naslov: marija.bogataj@guest.arnes.si