

Original research paper

Calculation and justification of land tax and rent for the land used for the parking of vehicles on public lands

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Abstract: Activities related to parking of transport, today have become widespread. While parking taxes for vehicles are one of the most important sources of local budgets in countries with established traditions of local government. The tax for parking spaces for vehicles is a relatively new collection in the tax system of Ukraine, which is due to the recent reform in tax legislation. Therefore, the scientific coverage of this subject is currently insufficiently investigated. In the article typical permissive documents are considered when decorating parking lots, and dependence that contradicts the current land legislation affects local revenues to the budget is established. The discrepancy between the general approaches of payment for land is established. For comparison, the approach of parking taxation, for which there is no land management documentation, and the main reason is the permission from the public enterprise for the maintenance of green spaces is considered. The analysis of the current state of the transport scheme of the city shows that in conditions of growth of elaborate road schemes and with insufficient rates of increase in its capacity to contain traffic growth it is advisable to increase the carrying capacity of transport lines and the development of mass passenger transport in cities with a planned increase in average capacity of rolling stock. Also, using traffic management is necessary to ensure that special conditions for the passage of the public transport network.

Keywords: parking, normative monetary evaluation; taxation; public land

1. Introduction

In a system of sustainable development, public lands should ensure the proper functioning of human settlements (De Moor, 2015; Hartvigsen, 2014, 2015; Thomas, 2006, 2012; Vitikainen, 2004). The current Land Code of Ukraine (Verkhovna Rada of Ukraine, 2002) does not explicitly allocate land for common-use land. However, some of its regulations refer to “objects of common use” (Article 38) and the common-use land of settlements (squares, streets, driveways, roads, embankments, beaches, parks, squares, avenues, cemeteries, places of disposal and recycling of waste, etc.) (art. 83). A characteristic feature of common-use land is that it is unoccupied and free to meet the needs of the entire population. Exploitation of these lands is carried out by an unlimited number of subjects, which are not interrelated by mutual rights and obligations, in the established order. As a rule, they are only in the state or municipal property and can not be transferred to private ownership. On such lands, the construction of capital buildings and structures is permitted by the designated purpose of these lands, as well as temporary structures of light type without prejudice to the purpose of the land. The legislation of Ukraine provides for the possibility of restricting the right to use these lands (in particular, during construction or other works) by closing passageways, blocking streets, etc. However, this requires a decision of the authorised state body or local government.

Placement, use and taxation of objects, which are used for commercial purposes, are defined and regulated by many norms and rules of the current legislation of Ukraine, but there are many contradictions and inconveniences in their operation. This topic is most relevant for cities. The spontaneous placement of non-capital construction sites, the creation of spontaneous parking spaces, the placement of fences under the reconstruction of various objects add discomfort to passers-by, as the city streets are not designed for such a significant additional loading. Thus, it is important to consider the features of urban development in decision-making related to the street improvement of human settlements and safe movement of the population, and later – the possibility of profit.

In (Litman, 2012) the relationships between transportation, land use and taxation are explored. It investigates how current land tax and regulatory practices affect the amount of land devoted to roads and parking facilities, and how this affects transport patterns. It discusses ways to measure the amount of land devoted to transport facilities, examine how this varies under different circumstances, estimate the value of this resource, evaluate how tax policies and regulations policies treat this land, and analyze whether current practices are optimal in terms of various economic and social objectives.

Parking pricing refers to direct charges for using a parking space (Litman, 2016). Efficient parking pricing can provide numerous benefits including increased turnover and therefore improved user convenience, parking facility cost savings, reduced traffic problems, and increased revenues. In report the guidance on parking pricing implementation is provided. It describes parking pricing benefits and costs, ways to overcome common obstacles and objections, and examples of successful parking pricing programs. Parking pricing is best implemented as part of an integrated parking management program. Current trends are increasing the benefits of efficient parking pricing. Legitimate objections to parking pricing can be addressed with appropriate policies and strategies.

Activities related to parking of vehicles, today has become widespread. At the same time, parking taxes are one of the most important sources of filling local budgets in countries with established traditions of local government. In Ukraine in recent years, a slightly different situation has developed, the income from taxes for car parking accounted for only about 3% of the total local taxes and taxes. Improvement of the mechanism of its levying in the Tax code of Ukraine (Verkhovna Rada of Ukraine, 2011) will contribute to the growth rate of income of this tax.

According to paragraph 266.1 of the Tax Code of Ukraine, the payers of the parking charge for vehicles have been determined. On the one hand, they are legal entities, their branches (offices, representative offices) – organisations created and registered according to the established order. On the other hand, individuals-entrepreneurs – citizens who exercise their right to engage in entrepreneurial activity on condition of their state registration. These persons, according to the decision of the local government, organise and carry out the activities to provide parking for vehicles on paid parking lots or specially designated parking lots (Verkhovna Rada of Ukraine, 2011).

In subparagraph 14.1.104 of the Tax Code of Ukraine the concept of “area for paid parking” is interpreted as the area of the territory (land), owned by a territorial community or state (on the ownership basis), on which, according to the decision of the local government, paid parking of vehicles is carried out. However, a similar definition (given in subparagraph 14.1.229 of the Tax Code of Ukraine) also refers to specially allocated parking lots as the area of the territory (land) owned by the territorial community or the state, and is determined by local governments with the establishment of rules regarding liability for the preservation of the vehicle. At the same time, special parking lots are communal garages, parking lots (buildings, structures, parts thereof), which are built from the local budget to organize the parking of vehicles. However, garages, parking lots, owners or users of which are payers of land tax or rent for land plots of state and municipal property, as well as land plots belonging to adjacent areas are not belong to such parking lots.

Paragraph 266.2 defines the object and the base of taxation for parking taxes for vehicles, which, accordingly, have a specially allocated land plots and land plot area, communal garages, parking lots, which are built from the local budget. At the same time, in Article 79 of the Land Code of Ukraine (Verkhovna Rada of Ukraine, 2002) and subparagraph 14.1.74 of the Tax Code of Ukraine (Verkhovna Rada of Ukraine, 2011), the interpretation of the land plot is practically consonant and is considered as part of the earth’s surface with established boundaries, a defined location, target (economic) purpose and with certain rights.

Ukraine ranked sixty-ninth in the world for the provision of cars. The annual rating for the provision of cars by the population was led by the South-Asian state of Brunei – there are 873 cars per thousand citizens, that is, almost every citizen of the country owns the car. In second place is Puerto Rico (819 cars per 1,000 citizens), with a population of 3,700,000 people and a fleet of about 3 million cars. The third line of the rating table is occupied by the USA (801 cars). This is evidenced by the data “Autostat” (Autostat, 2017).

In Ukraine the wealthy index – is only 191 cars per thousand citizens, and in this rating the country occupies only 69-th line, yielding to Belarus (355 vehicles per thousand citizens), Russia (317 cars per thousand citizens) and Kazakhstan, where cars have 270 people from every thousand people.

The USA, and also the majority of the European countries have traditionally entered into the top twenty of the countries, which are most provided with motor transport. At the same time, China, where there is an intensive growth of the fleet of vehicles on the planet, took only ninety-seventh place: only 81 people out of a thousand can afford the car.

Parking world experience shows the quantity and quality of the parking system. Here is for example the amazing Parque de Celestins parking in Lyon, France (Figure 1). It is located under the historical square of France.



Fig. 1. Parque de Celestins parking in Lyon, France

The Miami – 1111 Lincoln Road parking lot has won numerous design awards as “the most radical work” (Figure 2).



Fig. 2. The Miami – 1111 Lincoln Road parking lot

High-tech CarTowers parking in the Autostadt theme park near the Volkswagen plant in Wolfsburg, Germany, which is a 48-meter house with fully robotic lifts that deliver an average of 600 cars per day (Figure 3).



Fig. 3. High-tech CarTowers parking

Unlike in Ukraine, the construction of parking lots in foreign countries is very developed and improved. As for car parking and charging for parking fees, in European countries this issue is settled by the fact that countries have concepts and understandings of zoning.

For example, London is divided into nine transport zones, which have been numbered according to the distance from the city center.

Thus, 1-st zone is the zone of the historical center where most of the sights are located, 2-nd zone is all the areas surrounding the first zone, 3-rd zone is the ring around the second zone, etc. The exception are only 7, 8 and 9 zones, which, unlike others, occupy a rather small space in the north of London (Figure 4).

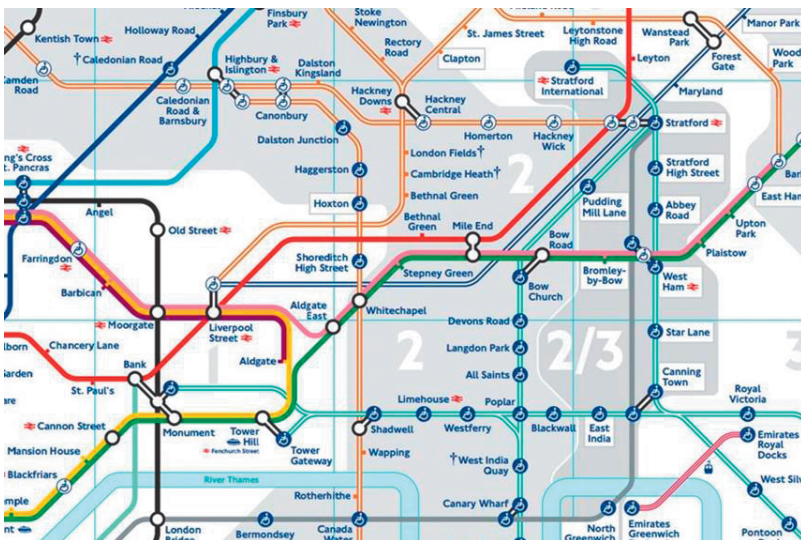


Fig. 4. The scheme of transport zones in London (<http://static.standard.co.uk/>)

The most important thing is that these issues do not contradict the current fiscal legislation, which helps to avoid conflicts of interest. Income to the budget funds from parking in European countries corresponds to actual indicators, in contrast to Ukraine.

2. Materials and methods

Abroad, despite the functioning of the parking machines, there is their mobile version. Such an alternative exists in the US, Canada and a number of other states and greatly facilitates the work of drivers who can pay for parking by phone. In Ukraine, such an innovation has been considered for a long time already. Now the project “Mobile parking” is still functioning in Kiev. However, the project from the very beginning required legal regulation. Due to the lack of legislation that would provide a guarantee of car owners, such a project once questioned as to its feasibility. However, according to experts, – mobile technology is the best option, which can bring order in this area. After analysing the parking lots in the city, let’s consider the following methods of parking (Figure 5 – Figure 7). To date, in the Ukrainian cities there is a negative trend of unlawful orders and the conclusions of the conciliation and permits when placing of parking lots.

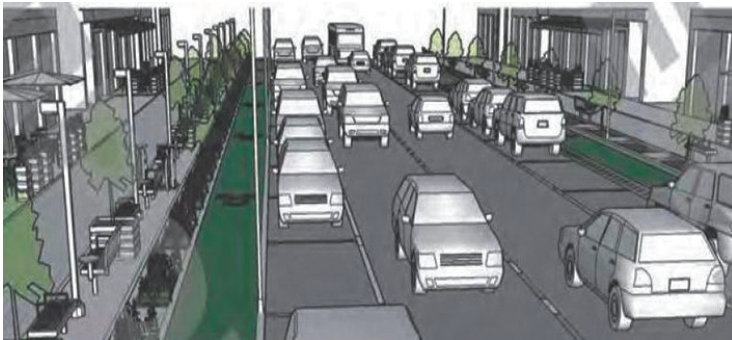


Fig. 5. Longitudinal parking of vehicles along the street

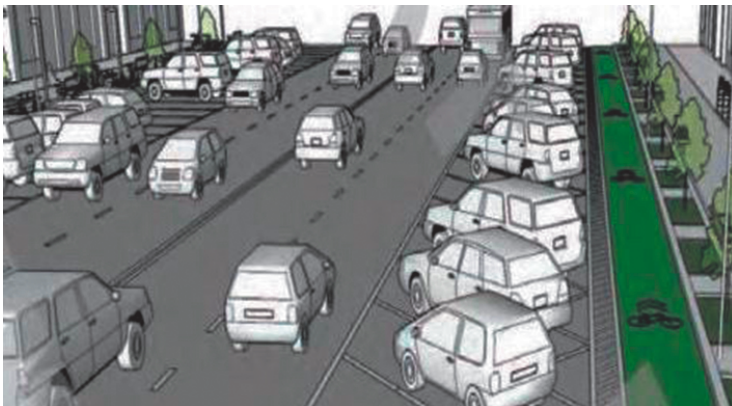


Fig. 6. Parking at an angle of 30, 45, and 60 degrees

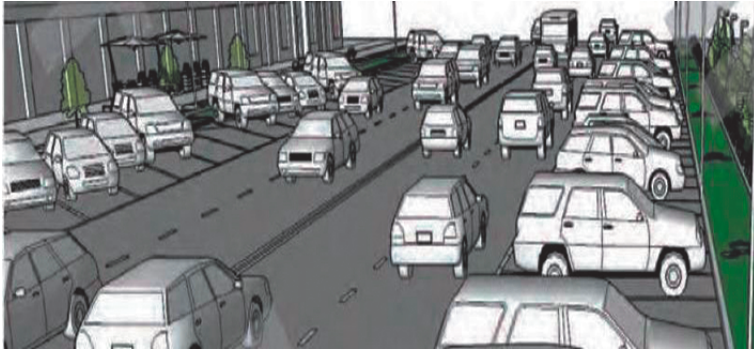


Fig. 7. Parking at an angle of 90 degrees

After examining typical permits for the registration of parking lots, the following dependence is established, which contradicts the current land legislation and affects local revenues to the budget. When concluding a contract for the provision of fixed parking places for operation, depending on the location of parking the permits are provided by the following enterprises:

- on the lawns, wastelands, bushes, etc. (permission from the communal enterprise for the maintenance of green plantations);
- on the highways of state importance (the permission of the state protection department);
- within the overpasses, sidewalks (permission of the State Agency of Highways of the city);
- the land user's permission for the development, in the case of registration of the right kind on a land plot, or when it is inventoried outside the state institutions;
- at reservoirs – the permission of the municipal enterprise on protection, maintenance and operation of water resource lands;
- under power lines – permission of the city energy company;
- in the local area – public hearings.

Let's consider mismatch of common approach of payment for land. For comparison, let's consider the approach of parking lots taxation, for which there is no land management documentation, and the main reason is the permission of the enterprises mentioned above. According to the provision on the tax for places for vehicles parking, the object of taxation is a land plot which, according to the decision of the Kyiv City Council, is specially reserved for parking of vehicles on public roads, sidewalks or other places, as well as communal garages, parking lots (buildings, structures, parts thereof), which are built from the local budget (Appendix 5 to the Kyiv City Council Resolution of 23.06.2011 No. 242/5629 "On the establishment of local taxes and taxes in Kyiv City" (in the version of the decision of the Kyiv City Council of 28.01.2015 No. 58/923) (Verkhovna Rada of Ukraine, 2011).

By paragraph 4.3 of this document, the amount of the tax payable for the tax (reporting) quarter and reflected in the tax return is calculated by the following formula:

$$P = (S - I - A) \cdot C \cdot M \cdot N \quad (1)$$

where P – is the amount of the tax payable for the reporting quarter; S – is the land plot area, which is allocated for parking of vehicles; I – is the land plot area, which is allocated for free parking of vehicles, stipulated by Article 30 of the Law of Ukraine “On the Basics of Social Protection of Persons with Disabilities in Ukraine”; A – is the land plot area, which is temporarily decommissioned by order of the executive body of the Kyiv City Council (Kyiv City State Administration); C – is the tax rate; M – is the minimum wage established by the Law on January 1 of the tax (accounting) year; N – is the number of days of activity.

Total revenues to the city budget from the land tax for the nine current months of the last two years are declared on Figure 8.

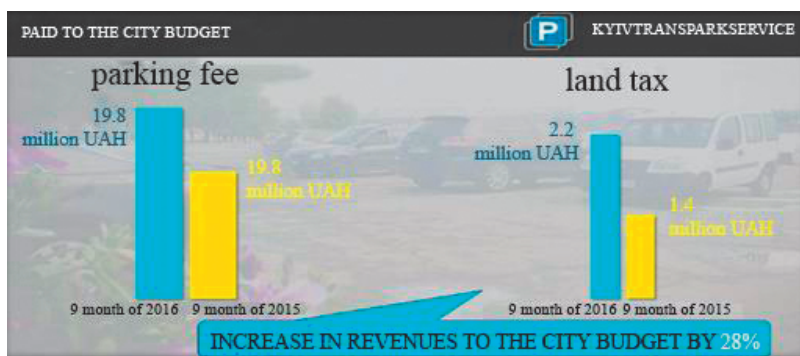


Fig. 8. Revenues to the local budget from parking of vehicles

3. Results

Now let's consider the approach, which is accepted by the current land legislation for calculating the land tax, used for paid parking. Using the approach proposed in (Malashevskiy, 2016) and the official data of KP “Kyivparkservice”, regarding the location and area of parking spaces three parking areas of the city were identified, after which the total parking area in each of the three zones was determined. The area was calculated without taking into account the parking places allocated for free parking of vehicles, stipulated by Article 30 of the Law of Ukraine “On the Basics of Social Protection of Persons with Disabilities in Ukraine”.

So the following areas are set:

- the first parking zone – 18,793.6 m²;
- the second parking zone – 63,853 m²;
- the third parking zone – 341,736.1 m².

Also, according to official data, the cost of parking is:

- the first parking zone – 10 UAH/h;
- the second parking zone – 7 UAH/h;
- the third parking zone – 5 UAH/h.

Let's calculate the total profit for the year, namely for working days, the number of which is 260 days and over the weekends, the number of which is 104 days, which comes to the budget of KP "Kyivparkservice":

0.9 – is the coefficient of filling parking spaces by vehicles on weekdays;

0.5 – is the coefficient of filling parking spaces by vehicles on weekends.

8 – is the number of parking hours per day.

The filling ratio takes into account, first of all, the possibility of continuous loading by vehicles during the year, taking into account the parking area. According to the proposed indicators, gross income will be:

the first parking zone – 429,997,568 UAH,

the second parking zone – 1,022,617,232 UAH,

the third parking zone – 3,909,460,984 UAH.

Let's take indirect mean values of the base value and local coefficients for calculating the normative monetary evaluation. According to the technical documentation on the normative monetary evaluation (Kyiv City Council, 2011) for land plots of commercial use (factor for functional use-2.5), the minimum base cost per square meter is 840.91 UAH in 232-nd economic-planning zone. The highest base cost per square meter is 10,725.94 UAH and is located in 62-th economic planning zone. The average indicator of the base cost of a commercial land plot of km²(limit values factors that take into account the values of urban development areas within settlements) is 5,783.42 UAH per square meter.

Since according to Appendix 5 to the decision of the Kyiv City Council of July 26, 2007, No 43/1877 "On Approval of Technical Documentation on the Normative Monetary Evaluation of the Land of the Kyiv City and the Procedure for its Determination" (Kyiv City Council, 2007), the value of the generalizing local coefficient should not be less than 0.5 and above 1.5. Let's accept the following coefficients of local factors:

the first parking zone – 1.5;

the second parking zone – 1.0;

the third parking zone – 0.5.

The indexation coefficient of the normative monetary evaluation of lands is applied cumulatively and depending on the date of its conduct is (Kyiv City Council, 2007):

year 2014 – 1.249;

year 2015 – 1.433.

Thus, the normative monetary evaluation will be:

the first parking zone – 291,806,256.7;

the second parking zone – 991,438,836.1;

the third parking zone – 5,306,100,594.

According to Article 274 of the Tax Code of Ukraine, the rate of tax for land plots, the normative monetary evaluation of which has been carried out, is set at 1 percent of their normative monetary value (The Tax Code of Ukraine, 2011).

So, the land tax of land plots, used for the parking of vehicles per year is:

the first parking zone – 2,918,062.56 UAH;

the second parking zone – 9,914,388.36 UAH;

the third parking zone – 53,061,005.94 UAH.

4. Discussion

Thus, the total rent for land plots, which are used for parking will be 63,267,200.86 UAH, which, in terms of one month, will be 5,272,266.74 UAH. For a comparative calculation, KP “Kyivparkservice” has declared 2,200,000 UAH of land tax payment for the nine months of 2016. Based on our research the amount of land tax is 47,450,400.65 UAH for the same period.

The most relevant topic is development of unified parking information space. We are talking about all kinds of online services, maps, navigation tools, combining everything in a single system. In addition, it is necessary to use the private parking lots. For this, it is necessary to install the electronic displays along large roads: on which it is necessary to show where the parking is located, the number of free parking spaces, and design the on-line services with the same information.

5. Conclusions

The studies conducted have proved the groundlessness of approaches for the calculation of land tax for land plots, which are used for parking of vehicles. Such a trend is observed in many Ukrainian cities. Our recommendations to local governments are that when making appropriate decisions, it is necessary to be guided by the laws of the first instance of the relevant direction, namely the Tax Code and the Procedure for the Normative Monetary Evaluation of Land in Settlements, since the proposed calculation approach has proven that the sum to be paid to the city budget more than 20 times higher than declared. Especially it should be noted chaotic interpretation of land laws and the abuse of power of local councils.

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References

- AUTOSTAT, (2017). Analytical agency. Retrieved May 25, 2017, from <https://www.autostat.ru>.
- De Moor, A., (2015). Urban land reallocation in Geodesign Summit Europe, 27–28 January 2015, Salzburg, Austria, Retrieved February 2, 2015, from http://proceedings.esri.com/library/userconf/geodesign-euro15/papers/geoeuro_10.pdf.
- Hartvigsen, M., (2014). Land mobility in a Central and Eastern European land consolidation context. *Nordic Journal of Surveying and Real Estate Research*, 10 (1), 23–46.
- Hartvigsen, M., (2015). *Experiences with land consolidation and land banking in Central and Eastern Europe after 1989*. FAO Land Tenure Working Paper 26 [online], Retrieved February 02, 2015 from <http://www.fao.org/3/a-i4352e.pdf>.

- Kyiv City Council. (2007). On approval of technical documentation on the normative monetary valuation of land in Kyiv and the procedure for its determination. Decision of 26 July 2007 No 43/1877, Retrieved July, 11 2014 from http://search.ligazakon.ua/l_doc2.nsf/link1/MR071188.html.
- Kyiv City Council. (2011). On the establishment of local taxes and taxes in Kyiv: Decision of the Kyiv City Council dated June 23, 2011, No. 242/5629. Retrieved June 23, 2011, from http://kmr.ligazakon.ua/SITE2/l_docki2.nsf/alldocWWW/FF63C3407BA93D32C22578BF00686E5A?Ope.
- Litman, T. (2012). Evaluating Policies and Practices that Affect the Amount of Land Devoted to Transportation Facilities. *Victoria Transport Policy Institute*, 1–32. Retrieved January 16, 2012, from <https://www.vtpi.org/land.pdf>
- Litman, T. (2016). Parking Pricing Implementation Guidelines. How More Efficient Parking Pricing Can Help Solve Parking and Traffic Problems, Increase Revenue, and Achieve Other Planning Objectives. *Victoria Transport Policy Institute*, 1–35. Retrieved November 25, 2016, from <http://www.vtpi.org/parkpricing.pdf>.
- Malashevskiy, M.A. (2016). Doslidzhennya vykorystannya zemel zahalnoho korystuvannya dlya parkuvannya transportnykh zasobiv [Research on the use of public lands for parking vehicles]. *Urban planning and territorial planning*, 60, 220–228.
- Verkhovna Rada of Ukraine. (2011). The Tax Code of Ukraine [Podatkovyy kodeks Ukrainy] Code of Ukraine dated 2.12.2010, No. 2755-VI. Ukraine: Bulletin of the Verkhovna Rada of Ukraine, No. 13–14, No. 1–16, No. 17. – Art. 112.
- Verkhovna Rada of Ukraine. (2002). *Land Code of Ukraine* [Zemel'nyy kodeks Ukrainy]: Code of Ukraine dated 25.10.2001, No. 2768-III. Ukraine: Bulletin of the Verkhovna Rada of Ukraine, No. 3–4, Art. 27.