IMPLEMENTATION OF THE BENEFIT PRINCIPLE IN TRANSPORT TAX IN RUSSIA

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Abstract

The article considers two main principles (the principle of ability to pay and the principle of benefit taxation) and draws upon them to substantiate the equity of tax systems. The purpose of this paper is the need to prove that a promising prospective measure of equity for a group of transport taxes is their compliance with the benefit principle. Transport tax is treated as the tax price paid for the use of a motor vehicle and road network. Negative externalities of the use of motor vehicles are characterized. The authors establish the relationship between the types of negative externalities and types of transport fees to be paid to compensate for these negative effects. Fixed and variable externalities are identified. The conclusion is made that the majority of external negative effects varies depending on several factors. The most important factors are defined, including the number of users of road infrastructure. The requirements are formulated that ought to be met by transport taxes and fees built on the benefit principle. Thus, the fiscal value of transport taxes should be significant and have a significant impact on investment decisions of taxpayers in respect of the ownership of vehicles.

Key words: the principle of benefit taxation, transport taxes, negative external effects.

JEL Code:H23, R40.

Introduction

At present, taxation is based on the ability-to-pay principle. The benefit principle is an alternative to the ability-to-pay principle, but the former is practically never used. It is critically important to launch debate on using the benefit approach to certain taxes because its wider application (that is, tying the amount of tax that a person pays to the amount of public goods that she gets in return) will make it possible, first, to dramatically boost the taxpayer's motivation to voluntarily and fully meet her tax liability because she will see an apparent tangible link between the public goods she enjoys and her tax payments, which will undoubtedly diminish tax evasion impulses. Second, it will substantially increase the responsibility and accountability of state-funded entities for spending public funds and reduce corruption in spending public funds because the approach changes the entire logic of taxpayers' attitude to these processes (their indifference to misspending of public, that is,

nobody's money is transformed into zero tolerance to theft of our money. It will facilitate the formation of civil society that will have a better understanding of the goods and their quality that society needs and their cost.

1 Theory of the benefit principle in taxation

The traditional ability-to-pay principle means the provision of certain conventional collective goods, or, more precisely, this prevailing approach matches the essence of tax as a non- quid pro quo payment. On the contrary, the benefit principle implies that individuals pay taxes on the basis of the benefit each of them receives from consuming certain public goods that are paid for with taxes. Those who benefit more from government expenditures should pay more taxes. A balance between the amount of taxes paid and the benefit from consuming a public good means a personal quid pro quo in taxation. At the same time, the taxpayer exercising his free choice should somehow indicate his willingness to fund this public good.

In line with the approach, an equitable tax system is one in which the taxes paid by each individual should be in proportion to the benefits they receive from government services provided while government uses the collected taxes as targeted funding for these particular services.

The following theoretical framework guides the implementation of the principle: individuals have means to buy the public goods they need. The money they pay for a certain good can be perceived not even as a compulsory, but as a voluntarily paid tax price reflecting their independent choice. This fact makes it possible to explain the nature of some of the taxes in a tax system that rests on the benefit principle (Musgrave, 1959).

A wider use of the benefit principle in taxation is constrained by rather complex requirements that have to be fulfilled for the impeccable functioning of the principle. Among them are the following:

1. Taxpayers should have the opportunity to freely express their will and should clearly indicate (not hide) what public goods they prefer and what their quality and provided amount should be.
2. When deciding on the amount and quality of specific public goods, government should not be guided by its own interests, but express the independent choice of taxpayers residing in a particular territory.

3. The public goods should be personalized, that is, they should deliver a personalized benefit to each taxpayer. Consequently, the amount of the tax to be paid should differ for each taxpayer depending on the benefit that the public good brings him.
4. Taxes should be purpose-specific, that is, there should be a separate tax to fund every public good. The size of the tax is the tax price of the corresponding government service, while government should spend revenues from the tax specifically on producing this particular service.

It is extremely difficult to fully meet these requirements using the currently available taxation mechanisms. What we are talking about is a possibility to incorporate the benefit principle into individual taxes and excises rather than building the entire tax system around it. Despite the seeming attractiveness of the benefit principle, its range of application is now limited to duties and user fees. It might be productive, though, to introduce the benefit principle into some locally collected taxes. It is at the regional or community level that the connection between the paid tax and the received benefit takes shape. Transport and property taxes appear to have the biggest potential for providing personalized benefits.

2 Potential of utilizing the benefit principle in transport taxation

The use of transport entails the consumption of two key types of public goods: the road network and the environment. There are, therefore, two things that are critical for identifying private benefits from paying transport taxes.Transport taxation based on the benefit principle requires that taxes are perceived as a tax price for using the road network. The tax rate should represent the tax cost of road construction and maintenance. Transport taxes should also be considered as a way of internalizing negative externalities of car use (Pigou, 1920;Coase, 1960). In this case, the size of transport tax payments should also reflect the tax cost of negative externalities so that the car owner rather than the whole community pays for mitigating them, which is in line with the "user pays" principle (Newbery, 1999; Hysing, 2015).

For each car owner, transport tax payments should, therefore, be equal to a sum of two components: the tax price of using the road network and the tax cost of negative externalities of using the car. It is much easier to translate the first component of the tax price into practice than the second one. The component reflecting the tax cost of road construction and maintenance for a specific motorist is most accurately represented by excise taxes imposed on the sale of petrol (natural gas) that are transferred to a motorway fund that is dissociated from

the treasury. In this case, tax payments are directly linked to the amount of fuel purchased, with its consumption being indicative of the intensity of road use. Consequently, fuel tax is an approximate measure of benefits, and by means of the tax motorists modify their financial contribution to road construction and maintenance (Kallbekken, 2013).

The measure is approximate because of certain assumptions that are inevitable in the application of fuel tax. Most importantly, it has to be assumed that fuel tax is not entirely targeted and personalized. For example, government can spend tax receipts from a motorist using motorway A on repairing motorway B that is used by another motorist. The assumption produces the problem of equitably splitting tax receipts among road funds (the federal, regional and local ones) that finance interstate, regional and local roads correspondingly. Besides, the tax does not reveal motorists' preferences as regards new road construction.

The second component of the tax price is much harder to employ in practice because the negative externalities are numerous (Litman, 1996; Gallo, 2011). Specifically, among the negative costs of growing car ownership is recurring traffic congestion, higher road accident rates, growing neglect of parking regulations, the shrinking of pedestrian and recreational spaces to allow for bigger roads and parking lots, increasing air pollution, deterioration of people's health and mental disorders in motorists (Verhoef, 1994; Botlikova, 2013; De Borger, 2011). These effects are differentiated as per size and territories.

At the same time, it is quite difficult to link all types of negative externalities to a certain fiscal charge. The easiest option would be identify the key negative externalities and associate each of them with a corresponding fiscal charge. It is desirable to make sure that the size of payments charged reflects the specific contribution that each car owner makes to generating negative externalities in a particular territory, which by itself is hard enough.

3 Analysis of compliance of the present transport taxation system with the benefit principle

Each country has its own peculiar system of transport taxes. In Russia, it is made up of the following levies (Tab.1):

Tab. 1. Compliance of existing motor vehicle levies with the benefit principle

№	Levy	Benefit principle implemented through	
		road network development	offsetting negative externalities
1	Car sales taxes and fees	no	no
2	Fuel tax	yes	yes
3	Motor oil excise tax	no	yes

4	Transport tax	no	no
5	Pollution charges	no	yes
6	Parking fees	no	yes
7	Recycling fee	no	yes
8	Heavy vehicle use tax (gross weights equal or exceeding 12 tonnes)	yes	yes
9	Mandatory and voluntary insurance	no	yes

The analysis shows that of the nine types of fees imposed on car owners in Russia only two appear to have a direct connection with the development of road networks and seven are connected with offsetting the effects of negative externalities of car use.

4 Tax price differentiation for urban and rural areas

Ensuring equivalence between the amount of transport charges paid by an individual and his consumption of public goods (the road network and the environment) requires taking into consideration the specific features of the territory where the public goods are consumed. The reason is that the tax price of the consumed goods varies greatly for urban and rural areas because car owners living in an urban or a rural area consume different amounts of the public goods. Depending on the territory, the public goods might also transform into mixed goods.

The density and length of road networks in urban and rural areas also vary considerably, as does the level of car ownership. By car ownership we understand the saturation of a community with cars. Roads are a pure public good that is characterized by relative non-rivalry and nonexcludabilityin consumption until car ownership reaches a certain level. But growing car ownership and use in urban areas has worsened the problem of road congestion. Road construction is lagging behind growing car ownership rates, while in large metropolitan areas resources for accelerated road network development have already been exhausted. The need arises to restrict access to the public good. As a result, we can say that the road network as a pure public good is only retained in rural areas, while in urban ones it transforms into a mixed good in the course of car ownership expansion. In urbanized territories this public good is characterized by competition in consumption.

The territory has an even bigger influence on the size of negative externalities produced by automobile use. In rural areas the carrying capacity of the environment is considerable and is a pure public good, whereas metropolises face the problem of a limited carrying capacity and the need to restrict access to this good. Consequently, carrying capacity in urban areas is also characterized by competition in consumption and turns into a mixed good.

5 Negative externalities of car use

We are used to thinking that automobile use yields more benefits than costs. But the situation is only true for areas with low car ownership rates. In areas with high levels of car ownership the size of negative effects is far bigger than of positive ones. The difference will be bigger thewideris the gap between road density and car ownership rates. Negative effects will be the greatest in major cities where car ownership and usage is growing exponentially and people become more automobile dependent (Botlikova, 2013).

In Table 2 we characterize the key externalities of automobile use and indicate the significance of these effects for urban and rural areas.

Tab. 2. Manifestation of external costs of automobile use in different territories

№	Externality	Characteristic of externality	Significance for urban areas	Significance for rural areas
1	Bigger proportion of land occupied by roads	Available land resources are allocated to favour road construction; the proportion of lands available for housing construction and agriculture goes down	+++	+
2	Environmental pollution	Pollution from exhaust fumes, motor oil vapours, soot particles, higher illness rates among population	+++	+
3	Expanding parking spaces	Pedestrian and recreational spaces are occupied by parking lots without compensation; pedestrian and public transport traffic is obstructed; streets and neighbourhoods become visually unattractive	+++	+
4	Traffic congestion	Time losses for all road users; mental health effects; more air pollution from idle and slowly moving vehicles	+++	+
5	Barriers to pedestrians and non-motorized traffic	Shrinking of pedestrian zones; more flyovers and cloverleaf interchanges in populated areas that create a barrier to non-motorized traffic and animal movement	+++	+
6	Noise pollution	Constant source of noise pollution	+++	+
7	Need to recycle car use waste	Greater amount of waste produced by car use (tyres, oils, batteries, filters etc.) and the car itself that need recycling	+++	++
8	Higher road accident and injury rates	Higher injury rates among pedestrians and travellers; growing spending on ambulance service and managing and restoring traffic flow after accidents	+++	++
9	Wear and tear of roads	Unscheduled road maintenance due to high traffic; time losses for all travellers due to road closures	+++	++

Note: +++ means high manifestation, ++ moderate manifestation, + weak manifestation.

The analysis shows that negative effects of automobile use appear in a variety of forms and their size depends on the qualities of the area where the car is used as well as on the properties of the car itself in some cases.

6 Establishing a link between vehicle charges and compensation for negative externalities

A negative externality is a cost that is suffered by one party as a result of a negative impact by another party for which no compensation is paid. Most of these effects are paid for by the community in the form of higher expenses on healthcare, emergency, road and other services. Members of the local community, including those who do not own a car, pay for these effects with their taxes. Such a situation is unfair and will lead to higher car ownership in the area, as well as to growing costs of mitigating the externalities for the community.

It is necessary to make sure that car owners pay for the negative externalities. Car owners should also reimburse government for funding the maintenance and development of road networks. They may disagree with the idea because their internal costs of buying, servicing and driving the car are quite high. Converting the external costs that are now paid for by the entire community into internal costs that are borne by car owners will inevitably result in diminished interest in owning a car and stronger interest in using public transport. This adjustment of consumer behavior should be a goal for urban areas.

Let us consider which of the above-mentioned externalities can potentially be internalized, that is, paid for by car owners. We shall also suggest a classification of the fixed or variable nature of these effects from the point of view of their dependency on the intensity of car use (Tab. 3)

Tab. 3. Assessment of current practice and prospects of car owners internalizing negative externalities

№	*Externality*	*Nature of externality*	*Existing charge*	*Current level of damage correction*	*Prospects of internalization*
1	Bigger proportion of land occupied by roads	Fixed	None	No coverage	Low
2	Environmental pollution	Variable	Pollution charges	Partially paid for by legal entities	High, possible through introduction of environmental tax
3	Expanding parking spaces	Fixed	Parking fee	Partially paid for due to limited use	High, extended use advisable
4	Traffic congestion	Variable	None	No coverage	Low, possible through introduction of congestion charge
5	Barriers to pedestrians and non-motorized traffic	Fixed	None	No coverage	Medium, possible through use of transport tax
6	Noise pollution	Variable	Pollution charges	Partially paid for by legal entities	Medium, specialty

					charge is required
7	Need to recycle car use waste	Variable	Recycling fee, motor oil excise tax	High coverage	High
8	Higher road accident and injury rates	Variable	Mandatory and voluntary insurance	Medium coverage	Highthrough voluntary insurance growth
9	Wear and tear of roads	Variable	Fuel tax, heavy vehicle use tax	High coverage	High

Of the nine negative externalities from car use only three occur regularly. Six directly depend on the level of car ownership and intensity of car use. Most importantly, the majority of the negative externalities have a high potential for being internalized. Only the effect of a bigger proportion of land being occupied by roads and that of traffic congestion have low prospects of mitigation. We can also conclude that variable externalities have a greater potential for being fully internalized by car owners, compared to fixed ones.

Generally speaking, correcting for a majority of externalities by means of taxation is feasible and advisable, with six types of transport charges being already commensurate with car users' personal benefit from appropriate public goods. This makes it easier to further make transport-related taxes payer-specific. For implementing the benefit principle it is necessary to make transport taxes purpose specific: they should be paid to motorway funds and spent on fixing appropriate negative externalities.

7 Establishing links between transport charges and development of road networks

Establishing specific links between transport related charges and the development of road networks is a fairly complicated process. In international practice, the following variable-cost charges, that is, those depending on the intensity of road network use, are typically applied (Delucchi, 2007):fuel taxes are excise taxes levied on fuel sales;link tolls are a fee for using a particular link (motorway);point tolls are charged for using a particular road facility (a bridge, tunnel or ferry);distance-based network charges are levied on any trips made on roads.

In Russia the most commonly used charge is fuel excise tax. It is the most acceptable fiscal instrument that makes tax payments proportional to the amount of road use.

Fuel excise taxes are only compensatory, they have no impact on car owners and cannot encourage or discourage them from using cars and opting for public transport instead.

One tax impacting taxpayers' behavior is vehicle tax with a variable rate for urban rural areas. Its size increases progressively if the taxpayer buys a second or third car.

With the absence of factors discouraging taxpayers from owning a vehicle, the community will fall into an institutional trap that sends communities into a spiral of automobile dependency: car ownership costs are low and an increasing number of community members use private cars for their transportation needs. The level of car ownership keeps rising, necessitating the construction of new roads. Public transport cannot compete with private cars and falls into decline; cities become unfit for non-motorized traffic and recreation, people start moving to the suburbs, and daily long-distance trips require more roads. A large number of cities in the USA have already found themselves in the trap, Detroit, Dallas and San Jose among them. These cities are designed for car users only.

To avoid falling into the institutional trap of car dependency it is necessary to set variable prices of owning and running a car in territorial communities with different rates of car ownership. The tax price should be high in communities where the car ownership rate is high. For implementing the benefit principle it is necessary to make transport-related fees purpose specific: they should be paid to motorway funds and spent on the development of road networks.

Along with car regulation through taxation various means of public transport development should be used. More specifically, public transport, including taxis, should be eligible for tax concessions or even exempt from some vehicle charges. Permission should be granted to use money from motorway funds for subsidizing public transport in order to make it more attractive to people pricewise.

Conclusion

The benefit principle has a good chance of finding application in transport taxation. In the course of its implementation a certain proportion between the amount of public goods enjoyed by car owners and their transport tax payments can be established. Moreover, the entire community will profit because car owners will pay for a large part of negative externalities. The internalization of negative costs that are now borne by the entire community will inevitably make people less interested in having a car and encourage them to use public transport. This adjustment of consumer behavior should be a goal for urban areas. A hike in the tax price of using automobiles will restrict the growth of car ownership. Tax concessions

and subsidies for public transport will spur the development of public transport and make it more affordable.

References

Musgrave,Richard A. (1959), The Theory of Public Finance. New York: McGraw-Hill, 1959. 480 p.

Pigou, Arthur C. (1920), The Economics of Welfare. London: Macmillan and Co. Pub. 896 p.

Coase R. (1960), The Problem of Social Cost. *Journal of Law and Economics. Vol. 3 (1), pp. 1–44*.

Litman, T. (1996), Using Road Pricing Revenue: Economic Efficiency and Equity Considerations, *Transportation Research Record1558, TRB (www.trb.org), pp. 24-28*.

Newbery, David M. & Santos, G. (1999). Road taxes, road user charges and earmarking. *Fiscal Studies, Institute for Fiscal Studies. Vol. 20(2), pp. 103-132*.

Verhoef, Erik (1994), External Effects and Social Costs of Road Transport, *Transportation Research, Vol. 28A, No.4*.

Delucchi,Mark (2007), Do Motor-Vehicle Users in the US Pay Their Way? *Transportation Research Part A, Vol. 41, Issue 10, Dec., pp. 982-1003*.

Hysing, Erik;Frandberg, Lotta and Vilhelmson, Bertil (2015),Compromising sustainable mobility? The case of the Gothenburg congestion tax.*Journal of environmental planning and management. Vol. 58, Issue: 6, pp. 1058-1075*

Kallbekken, Steffen; Garcia, Jorge H.; Korneliussen, Kristine (2013). Determinants of public support for transport taxes, *Transportation research part A – policy and practice. Vol. 58, pp. 67-78.*

Gallo, Mariano (2011). A fuel surcharge policy for reducing road traffic greenhouse gas emissions, *Transport policy. Vol. 18, Issue: 2, pp. 413-424*.

Botlikova, Milena;Botlik, Josef;Vaclavinkova, Klara (2013). Negative Impacts of Transport Infrastructure Funding. *Creating global competitive economies: 2020 Vision planning & implementation, Vol. 1-3 Edited by: Soliman, KS. Pp.* 1141-1152.

De Borger, Bruno (2011),Optimal congestion taxes in a time allocation model.*Transportation research part B – methodological. Vol.45, Issue: 1, pp.79-95.*

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