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The macro-economic analysis of public goods and their influence in the region of Czech Republic

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Abstract

In the region of Czech Republic, the provision of public goods is one of the State's most important activities with society-wide impacts. Therefore, the debate on the structure and scope of public budgets is legitimate and ongoing on a society-wide scale. Mainstream fiscal theory considers public goods to be one of the failures of market equilibrium, classifying them as being close to positive externalities. In this case, the activity of the State brings benefits to other entities that are not involved in this activity and do not even directly pay for it. The main characteristics of these goods include irreducibility of their amount in society, non-excludability and non-rivalry. There are a number of goods between purely private and purely public goods which, to varying extents, exhibit both elements. Today, the majority of goods provided by the public sector are of such a nature; as a result, the form of allocation and the subsequent redistribution of resources are crucial when analysing public goods. The present paper analyses public goods in the Czech Republic from an economic and legal perspective using Cost-Benefit Analysis, including their efficiency and society-wide benefits.

Keywords: *Public goods, public economics, benefit, efficiency, free-rider problem, Cost Benefit Analysis, Czech Republic.*

JEL Classification: *E61, E62.*

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Introduction

Until recently, the concept of public goods and public services had no explicit definition in the positive law of the Czech Republic. The Administrative Procedure Act merely referred to the concept of public use which will be mentioned later. This act, as well as other sources (Hendrych, 2009), only allowed us to indirectly infer legal and economic definition of public (collective) goods, or the "collective consumption goods", in the Czech Republic. This changed on 1 January 2014, the effective date of the Civil Code. However, it only laconically provides that a thing intended for general use is a public thing (i.e. a public good). It is therefore clear that in terms of content and purpose, the definition does not capture the economic essence of public goods.

One of the first definitions of collective goods is mentioned in the neoclassical theory of equilibrium and the Pareto optimality (Pareto and Schwier, 1927), which primarily addresses optimal allocation of resources and their subsequent redistribution to finance collective goods. The post-war period saw the publication of well-known works by Wicksell (1964) and Lindhal (1964), who considered the "integral approach" for all functions of the public sector (i.e. the allocation, distribution, redistribution, stimulation, control and emission functions), that is, the entire chain of activities from taxation to the subsequent use of a public good or service (Mikušová-Meričková and Stejskal, 2014). Also known in the Czech Republic, the pioneering work of Musgrave focusing on issues of Walrasian general equilibrium and general optimum (Musgrave, 1959; Musgrave, 1994) represents another impulse for the development of the theory of collective consumption goods. The theory of collective decision-making on tax allocation and subsequent redistribution was also dealt with by Bowen (1943). All of these, and many other papers, resulted in a solution to the issue of collective decision-making known as the "public choice theory" formulated by Arrow (1963), Buchanan, Tullock and others (Buchanan and Tullock, 1962).

In most cases, these theories are based on market-oriented and liberal economic thinking which does not favour State intervention in the economy. However, they admit the need for such interventions in the form of the allocation of public funds and financing of public goods which are specific in terms of their purpose, creation, financing and use, and thus cannot be produced in a purely market environment. The free market fails in the case of public goods; therefore, the State has assumed responsibility to supply these goods throughout the society. Redistribution, being the result of a political choice, in most cases results in a greater or lesser degree of inefficiency which is justified by the need to address the impacts of income inequality, the free rider problem, or by political reasons in the social area.

The reasons for this inefficiency include the issue concerning the evaluation of ex-post benefit for the consumers of collective goods or of their value. In addition, the basic concept of neoclassical economics is often in contradiction with the observed reality around us (Mikušová-Meričková and Stejskal, 2014). The conclusions of neoclassical economic theories do not necessarily have universal validity given that they disregard the behavioural elements of the analysed economic problems (Mises, 2006).

Another author who has previously dealt with the concept of public goods was Samuelson in his book *The Pure Theory of Public Expenditure* (1954). Public goods bring common benefit in that the consumption of that good by any individual does not reduce the consumption by others. It is this quality that distinguishes public goods from private ones. Later, Samuelson further specified the term in his economics textbooks. It is a commodity whose benefits may be provided to all people without it leading to costs higher than those associated with the provision to one person. The benefits of these goods are indivisible and individuals cannot be excluded from their use (Samuelson, 2010).

Samuelson argued that the benefits of public goods are indivisibly spread across all members of society regardless of whether or not particular individuals wish to buy them. Samuelson's theory named three economic functions of the State: promoting efficiency, fairness and stability. Although Samuelson's classification of goods has been criticized many times and several other classifications were created later, all are based on his original characteristics; this definition was also adopted by the Macmillan Dictionary of Modern Economics (Pearce, 1995). Public goods are defined

primarily by the nature of their consumption rather than by how they are produced or financed. The fact that these goods are consumed by all consumers at the same time and in aggregate allows the conclusion that their consumption by one consumer does not reduce the consumption by others and therefore an extra unit of consumption involves zero (or near-zero) marginal cost.

This paper aims to analyse the concept of public goods from an economic and legal perspective and to quantify and define the function of public goods in, and their benefits for, the society. In order to achieve this aim, we have employed the CBA – Cost Benefit Analysis, as the most suitable input-output method for public budgets and public goods and their temporal discounting.

1. Benefit of public goods and its function in society

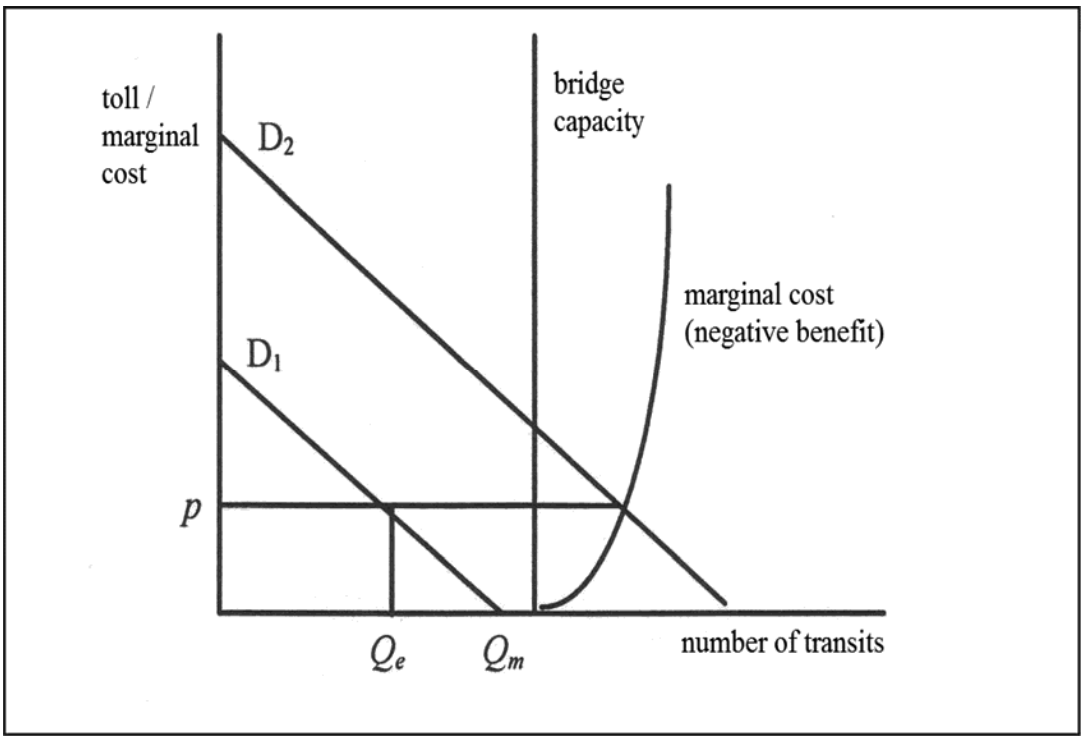
The above characteristics clearly show that it is impossible to force consumers of purely public goods to express their preferences through price because the market price of these goods does not exist and that there is non-rival consumption among consumers. Therefore, there is a real possibility of the "congestion effect" as the growing number of fiscal unit members leads to exceeding the capacity of the facility providing these goods and subsequently results in a sharp decline in the quality of consumption. This is due to the fact that if a good is provided gratuitously and its market price is neither known nor required, its consumption is likely to be higher than the effective consumption level, as consumers will require the good up to the point of zero marginal benefit and will disregard the real, non-zero cost of production.

This concept of public goods, now widely accepted, was complemented by Stiglitz (1986) to include the free rider problem. Stiglitz argued that a free rider is an individual who consumes and uses a public good without paying for it. As a result, he benefits from those individuals who are willing to contribute to the public goods (e.g. indirectly through the tax system). Free riders cannot be excluded from consumption. The cost of exclusion from consumption would be disproportionate. Other essential features and characteristics of public goods include zero or very low marginal cost of providing additional units of the public good. For example, the cost of flood protection measures will not increase even if the number of residents in the flood area increases by one. According to Stiglitz (1986), the second key feature is that it is essentially very difficult, or even impossible, to exclude individuals from the use of a public good. Therefore, the price system cannot act as a tool to "allocate" (provide) goods to consumers which, considering a competitive market, leads to a Pareto optimal quantity of goods because the good can also be consumed by an individual who has not paid for it. There is no reason why individuals should uncover their true willingness to pay. Such an individual can rely on benefiting from the consumption of those who are willing to pay. The provision and subsequent use of this good is therefore characteristic for being non-excludable.

Non-excludability is a traditionally indicated characteristic of public goods. Yet, today it can be technically defined (particular individuals can be excluded from consumption). These changes often result from changing technologies. For example, the development of cable television allows efficient and selective collection of fees for watching certain programmes, or computers significantly reduced the cost of collecting certain fees so that it is now possible to charge higher fees during rush hour or tolls at different rates, different times and for different cars, etc. (Stiglitz, 1997).

In this case, it is advisable to analyse whether or not the exclusion from consumption through prices is desirable or useful if the exclusion of an additional consumers does not reduce the overall benefit from the consumption of the good. In the case of non-rival consumption with zero marginal cost of consumption of an additional unit of the good, it is Pareto optimal to enable the consumption to all consumers whose benefit is greater than zero. In this case, exclusion is technically possible, but causes the loss of benefit as shown in **Figure 1**.

Figure 1: A good where exclusion is technically possible, but not desirable



Source: Malý,1998

It is technically possible to collect toll to cross a bridge. However, if the bridge has sufficient capacity (demand D_1), it is not desirable to restrict the number of passages. If, nevertheless, toll p is introduced, the area under the demand curve D_1, delimited on the *x-axis* by the interval $[Q_e, Q_m]$, will symbolize the loss of benefit. Demand exceeding the capacity of the bridge will lead to negative benefits, the benefit of the consumers will decrease (congestion effect, resulting in e.g. extended travel time). At that moment rival consumption occurs and market price could possibly regulate the number of passages (Malý, 1998).

Measurement and evaluation of the benefit in the provision of public services is complicated mainly due to the quantification of outputs and outcomes. Measuring the efficiency of public services is particularly challenging because they are often provided without direct payment by consumers or at a subsidized price. Therefore, measuring the efficiency and performance of the public sector has always tended to marginalize the outputs and results and focus only on the size of the inputs. However, this approach is now obsolete and today we can use multiple ways to measure output and efficiency in the public sector (Benčo and Kuvíková, 2011).

Measuring the efficiency of providing public goods and services employs a range of methods from a wide range of input-output methods. The CBA is a measurement method which is probably the most suitable for the public sector and public projects. This method is based on a comparison of all considered costs and benefits of a given project, regardless of their addressee. Therefore, it is also referred to as the social form of cost-benefit analysis, with inputs and outputs being measured in units of value. Benefits are understood as any increase in utility, while, conversely, costs are understood as its decrease. The method can also be defined as a set of practical methods of optimal choice in the field of public economics respecting the criteria of maximum net profitability, all of the considered costs and benefits being expressed in monetary terms, whether directly or indirectly.

Identifying and measuring the total cost of a certain public programme (good) is not easy because measuring is necessary at several levels and in different ways. Likewise, it is relatively difficult to identify and quantify their benefits (utility) which follows from their diversity and, in some cases, from difficult measurability. Benefits represent the sum of satisfaction of individuals or groups of individuals which are provided by a particular public programme (good). Applying the CBA method is therefore dependent on the ability to define the overall costs and benefits and on the possibility to assess them, preferably in monetary terms for easier comparison.

As individual costs and benefits do not arise at the same time, but are usually spread over several years, they must be discounted with regard to the time factor. The later a benefit is available, the smaller the discounted factor. The present value will increase during the year to the future value depending on the interest rate:

$$FV = PV * (1 + r), \quad (1)$$

where:

PV – present value,

FV – future value,

r – interest rate.

In the *n*-th year, the FV is expressed as:

$$FV = PV * (1 + r)^n, \quad (2)$$

where:

n – number of years a public programme (good) provides a benefit.

Subsequently, we need to compare the benefit of the already defined and quantified costs and benefits:

$$\sum_{t=0}^{T} \frac{B_t - C_t}{(1+r)^t} > 0, \quad (3)$$

where:

t – time period,

T – time horizon, where a public project (good) completes its economic life,

Bt – benefit in period t;

Ct – cost in period t;

r – interest rate.

The above equation implies that the public project (good) is economically beneficial if the discounted value of the benefits exceeds the discounted cost. The impact of the amount of the provided public good *q* per one economic entity can be expressed as *CV* (compensating variation), which expresses unit welfare, change of benefit for one member of society, or the quantification of flows that would occur if the supply or demand of one member of society changes while maintaining the current volume of benefit.

The change in total welfare can then be expressed as follows:

$$\Delta W(\Delta q) = w1CV\ 1\ (\Delta q) + w2CV\ 2\ (q) + ... + wnCV\ n\ (\Delta q), \quad (4)$$

where:

CV^e – compensating variation induced by changes in the availability of a particular good *q* belonging to entity *e,*

W^e – weighting of individual *e*-th *CV* impacting the welfare function.

The provision of public goods is one of the tools to multiply government spending. This case concerns an increase in GDP due to an increase in government provision of public goods by one *koruna*. The government's initial purchase of public goods sets in motion a chain of costs, so that one additional *koruna* in government spending will have the same effect as an additional *koruna* in investment.

If people consume *r* from each additional *koruna*, the overall multiplicative chain will look as follows:

$$1 + r + r^2 + \ldots = 1/1–r = 1/1–MPC = 1/1–MPS \quad (5)$$

where:

MPC – marginal propensity to consume

MPS – marginal propensity to savings

However, the multiplier works both ways. If the government decreases the provision of public goods, then there will be a decline in GDP equivalent to the multiplier effect, maintaining constant taxes and other influences (ceteris paribus). This should be borne in

mind when applying restrictive fiscal policy and reducing spending on public goods.

There are many important aspects other than just the zero marginal cost of consumption. These include, for example, the fear of high income inequality. Limiting consumption is then considered to be socially undesirable, as it would be impossible for less well-off individuals to afford the consumption. For this reason, goods regarded as public include health care or rent-regulated housing, even if the marginal cost of providing such a good is definitely neither zero nor negligible. With regard to the foregoing, Hirshmann (1981) noted that changes in the consumption of public goods also occur due to changes in consumer tastes. He demonstrated that in history, there have been periodic variations favouring one or the other way of providing goods – privately or publicly. When consumers find that private goods do not fully satisfy them, they start focusing more on public goods. However, their expectations often remain unsatisfied even in the public sector and, as a result, consumers again return to private goods after some time.

The concept of public goods was defined similarly by Hyman (1990). He was more concerned with the relationship between the non-excludability and non-rivalry. Non-rivalry is especially a characteristic of pure public goods where quality is indivisible. Consumption by one user does not diminish the possibility of another user to consume the good, i.e. it is impossible to physically reduce the good. At the same time, Bénard (1990) distinguished two characteristics of a good: the manner of its allocation and the manner of its consumption. According to the institutional criteria, Bénard (1990) classified goods as market goods, impurely market goods and non-market goods. The criterion to distinguish between these types of goods is the presence and characteristics of the market price as the allocation mechanism. The price of market goods (which are dominant in mixed economies) is the result of interaction between supply and demand. In the case of institutional classification, a political decision on how to provide the goods is important. In principle, it is possible to decide to provide any good in a non-market way or directly or indirectly intervene in the price and availability of the good. These government interventions may aim to promote as well as discourage consumption. In other words, it is about how the goods reach the consumer, which can be set up by methods other than pricing tools, such as political decisions or legislation.

2. Economic criterion to classify goods

The existence of public goods is one of the signs of market failure. The market system, i.e. the competitive environment, is characteristic for legal or natural people deciding on production, consumption and the allocation of private funds. If the private sector is unable to provide certain services because it is impossible to make a profit, those services must be provided by the State and territorial self-governments (i.e. public administration). This is referred to as “allocation activity”. Providing these public services (goods), which we call pure or mixed, falls under the responsibility of public authorities at the national, regional and local levels. The range of competencies is established by law. It includes the actual public administration, education, healthcare, social services, social housing, justice, police, military, culture and heritage conservation, physical education and sport, science and research, public transport, communications, information systems and media, water management – including the regulation of water flows and other activities – environmental protection, and possibly also energy management (Peková, Pilný and Jetmar, 2008).

The economic criterion considers the way goods are consumed as well as what happens to the benefits provided by the consumption of the goods. It classifies goods into pure public (more specifically, pure collective), mixed and private. McKenzie and Tullock (1978) believed that public goods are those where the benefits provided by the consumption of such goods are shared by a particular group (such as the inhabitants of a country, region, city, etc.) as a whole when the good is provided to or consumed by one person. Examples often include goods such as national defence and efficient public administration at the national level and the traditionally mentioned lighthouses, street lighting or controlled intersections at the local level. Although the classification of criteria to economic and institutional ones is clear and logical, its schema presents a certain problem. Practice, as well as economic papers, often do not distinguish between “non-market” and “public”; more specifically, the term “non-market goods” is generally not used.

The above has been developed and refined by a note made by Malý (1998), previously presented by Sandler (1977), which concerned the fact that only few public

goods are purely public, i.e. those that simultaneously and cumulatively meet the conditions of non-rivalry and non-excludability. For example, if the army is concentrated in the north, people from the south may not be as protected as those in the north. Even the often-mentioned lighthouses were typically operated by the private sector in the past. Therefore, it seems that Samuelson's pure public goods play rather an important role as one of the poles between which there are a large number of real, existing mixed goods.

So the question becomes how to classify these observable goods. One of the many possible approaches is to take into account the characteristics of public goods. The classification then takes the following form as shown in **Table 1**.

Table 1. Schematic classification of goods

Consumption	excludable	non-excludable
rival	A	B
non-rival	C	D

Source: Author's compilation, 2016

Pure public goods are symbolized by category D. Category A represents pure private goods. Goods falling under category B exhibit rivalry in consumption, but exclusion is difficult or impossible. Freely accessible resources are a good example. Contrary cases are illustrated by category C. These goods are non-rival, although exclusion from consumption is possible. If capacity has not been depleted, the passage of another vehicle over a bridge does not diminish the benefit of the others; however, exclusion can be done relatively easily by introducing toll. The same applies e.g. to theatre performances, pools etc. In these cases, market mechanism can be applied, although it can lead to inefficiency. However, that does not mean that in all these cases market failure must be remedied only by state intervention. The efficient provision of these goods can also be addressed by a private initiative. Developed by Buchanan (1965), the theory of clubs serves as the best example: the theory determines the conditions for the optimal production of category C goods where they are produced within a group of consumers.

According to the manner of distribution and redistribution of public goods, we can, in principle, classify public goods into pure public and mixed ones. The consumption of pure public goods is automatic by their nature, as they are goods of pure collective consumption (e.g. the army). Their characteristics include, in particular, the impossibility to exactly determine the share of an individual in the consumption of a particular public good, as well as to prevent an individual from consuming the good (that is, an individual cannot be excluded from consumption). This characteristic is referred to as the indivisibility of consumption, which leads to non-excludability and is associated with non-rivalry (i.e. non-competitiveness) among consumers or users of a public good.

The quality of a public good is indivisible. Consumption of a good or service by one user does not prevent other users from the possibility of consuming it. However, excessive consumption of the good may lead to a decrease in its quality for all. An example is the congestion of a road (hence the congestion effect) resulting in slower traffic and other related aspects.

It is impossible to measure the consumption of a pure public good and determine the share of individual consumption, i.e. determine the amount of a "user fee" charged for the good or service. At the same time, the marginal cost of consumption of such a good is zero, or near zero. Stiglitz therefore argued that it is ineffective, as well as socially undesirable, to reduce the consumption of such a good. An example is the introduction of toll to cross a bridge. In this case, it is technically possible to introduce a toll; however, marginal cost (up to the maximum bridge capacity) of an additional car to cross the bridge is zero. Their introduction would only lead to a reduction in the overall social benefit, as part of the drivers would bypass the bridge and congest local roads.

Identically to pure public goods, mixed goods have the nature of collective consumption goods. The benefit from the consumption of such a good is individual. Unlike in the case of pure public goods, it is mostly possible to determine the exact share of a consumer in its consumption. It is therefore possible to determine a kind of "user fee" for consumption. Again, the term "free rider" comes into play, i.e. someone who consumes and uses a service or good without paying. However, quality (or standard) is indivisible. For example, the more pupils in a class, the lower the quality of education (compared to a class with fewer pupils).

Based on the manner of their consumption, mixed goods can also be divided into optional and mandatory

consumption. In the case of optional consumption, consumers may decide whether or not they want to use the service; therefore, they have a choice. For example, they may choose the preferred medical facility or school, whether they will go by public transport or which social service they will use. This is different in the case of mandatory services. Here, the State (i.e. public administration) lays down certain rules, thus determining the manner in which consumers are to use a particular good. An example is the system of basic education which has a mandatory duration, manner, etc.

3. General and special use of goods

As already mentioned above, the legal regulation governing public goods was introduced only on 1 January 2014 in the new Civil Code. Previously, the Administrative Procedure Act only provided for "public use". The issue of public use relates to both public and private law and represents one of the borderline areas between the two. Public use is understood as the use of generally accessible material goods which corresponds to their intended purpose by an unlimited number of users.

Depending on the creation of the possibility of public use, we can distinguish two types of public use: general use and special use. General and special use are of public nature – the specific use of a material good intended for public use is not affected by the expression of the will of the owner (Hendrych, 2009). The user must also use the good in a way that does not preclude the use by other (even potential) users. Use that might limit the other users to an extent other than usual should be regarded as special use, or as prohibited conduct.

The legal possibility of general use arises directly from the law. Its content can be determined positively, or it may follow from various public-law restrictions relating to the protection of the interests, which have the nature of special interests in terms of the use itself. Alternatively, general use may not be specified by a legal regulation at all. In this case, one can conclude that such use must be usual given the intended purpose determined by the nature of each particular material good. For example, road users are, *inter alia*, obliged to adapt their behaviour to the construction and technical condition of the road. They are obliged to behave considerately and in a disciplined manner not to put the life, health or property of other persons (i.e. the other road users) at risk.

The creation of the legal possibility of general use for a particular user is not connected to any expression of the will of any public administration executor, i.e. no administrative action.

In contrast, the permission of special use for a particular user is created based on an administrative act issued by the competent administrative authority and is always created for the intended user – the act's addressee. The content of special use mainly follows from the said administrative act which usually has the nature of a permit. It defines the manner and duration of the special use; the law may also provide for modes – conditions of special use.

Public use concerns material goods – both natural goods and things created through human activity. They may include water, roads, public spaces, landscape, forest, some types of energy, radio spectrum, etc. For example, public places involve squares, streets, marketplaces, pavements, public greenery, parks and other areas accessible to everyone without restriction, i.e. intended for general use, and regardless of the ownership of the area. The definition of a public space (as can be seen) consists of a demonstrative definition of public space under the condition of "accessibility to all without restriction". The imperative requiring a judicial act to be determinate demands that a generally binding ordinance determine such a space as accurately as possible, i.e. so that its location is specific enough and does not allow multiple interpretations. Public space is thus defined, regardless of the ownership of the immovable property where the public space is located. The designation of private property as a public space by a generally binding municipal ordinance cannot therefore be considered as equivalent to expropriation, or forced restriction of property right within the meaning of the Charter of Fundamental Rights and Freedoms.

Public use can therefore also apply to material goods which are privately owned. These may include parts of public spaces, such as the right to go through a passageway without the obligation of creating an easement. In these cases, public use may be restricted in some way (especially in terms of time – the public use of passageways may not be possible at night, etc.). In the case of certain material goods, the owner of such goods is completely irrelevant. The general use of forests applies both to State- or municipality-owned

forests, as well as to private forests (Hendrych, 2009). For example, everyone has the right to enter into a forest at their own risk, pick berries and collect dry twigs lying on the ground for their own use. In doing so, they are obliged not to damage the forest, interfere with the forest environment and to follow the instructions of the owner or lessee of the forest and his employees. Applicable law also regulates access to the countryside. Everyone has the right to free passage across land in the ownership or lease of the State, municipality or another legal entity as long as they do not cause damage to property or health of another person and do not interfere with the rights to the protection of personality rights or neighbours' rights. In the exercise of such a right, they must comply with the laws and respect the legitimate interests of the owner or lessee of the land. Arable land, meadows and pastures are excluded from this at a time when it may cause damage to the land cover or soil, or during pasture.

4. Financing of public goods

Historical research used public goods as an example to illustrate their existence. Lighthouses save lives and cargo, so it is most effective to provide for lighthouses gratuitously, because warning one ship of a danger costs the same as warning another one (Samuelson, 2010).

When Coase (1974), a British economist, described the history of lighthouses in England and Wales and found out that they were operated by private entities, the original view of lighthouses as a public good somewhat changed. Coase (1974) found that English lighthouses were operated under licenses granted by the king, and were financed by government "light fees" imposed on ships that were using ports in the vicinity. Coase (1974) concluded that, contrary to the view of many economists, the lighthouse service may also be provided by a private entity. In this case, we can see that if the provision of a public good can be associated with another good or service and if the government grants the right to collect fees to private entities, there may be an alternative way of financing the public good (Ochrana, 2011).

At present, public goods are overwhelmingly financed from public funds and their independent existence is predicated on the existence of public finances and the State's ability to allocate resources. This does not mean, however, that they are financed exclusively by these funds. Another way of providing for public goods is through non-profit organizations that are established for this purpose by the State or local self-governing units, i.e. municipalities or regions. This funding is used in the case of a non-competitive environment where we cannot select a supplier, if the monopoly of a private enterprise is undesirable, or in the case of essential services, particularly preferred public goods for which it is necessary to ensure their absolute reliability (e.g. education).

In the case of public goods, essential aspects also include the public administration authority as well as the type of public funds used to finance the particular good. The State budget (through the Ministry of Transport) is used to finance, e.g., the construction and repair of motorways; by contrast, the construction and repair of 1st-class roads are financed by higher territorial, self-governing units (regions). The same applies to the financing of public universities, secondary schools and primary schools. Public universities are financed from the state budget through the Ministry of Education, Youth and Sports, secondary schools are financed from the budgets of higher territorial self-governing units and primary schools from the budgets of local territorial self-governing units (municipalities).

This financing method also applies in cases where it is impossible to find (e.g. in a selection procedure) a private legal or natural person willing to provide these public goods to citizens (Pospíšil, 2013).

Public goods are also provided through State and municipal enterprises, especially when providing goods difficult to be classified under market goods – the "half-market goods", where the market fails in their provision (an example being the generation of heat or maintenance of greenery) (Strecková, 1997). Another way of financing includes a joint venture, e.g., between two municipalities (micro-regions, voluntary associations of municipalities), or a joint venture between a municipality and the private sector, funding through contracts awarded to the private sector in a competitive environment based on a selection procedure, or funding through the civil sector represented by publicly beneficial organizations.

When providing for various public goods for citizens, the individual levels of public administration establish organizations, which primarily operate on a non-profit basis – these include subsidized organizations, charitable organizations and organisational components of the State, municipalities and regions. The provision of public goods becomes decentralised as the State

delegates its responsibility for the provision of certain public goods to individual levels of territorial self-government.

Conclusion

Public goods are considered a market failure and, in terms of the types of market failures, they represent the most common type of market failure throughout the economy. They have an undeniable society-wide impact and the participation and role of the State or its components as the main provider of public goods has been permanent and undeniable since the 1930s. Before then, public spending was mainly channelled to defence and foreign policy, but since the crisis of the 1930s the State's activities have refocused primarily to the public sector, the provision of public goods and services and to the social area. This is also reflected in the degree of redistribution of allocated resources, which was increasing throughout the 20th century.

When allocating resources and subsequently providing public goods, society, represented by the government, must decide:

- What types of public goods will be provided by each level of public administration;
- What quantities of a particular public good will be provided, or the total population for which a particular public good will be provided to reach "economies of cost sharing" and minimize the loss of the effect of centrally provided public goods;
- What standard of public goods can be provided given the limited amount of public funds.

Mixed goods – meaning those that are irreducible and excludable or reducible and non-excludable – may be and are of a divisible nature (in some cases) and of an indivisible nature (in other cases). Where it is possible to value (quantify) the consumption of a mixed good, it is also possible to determine a user fee per unit of consumption of such a good. Their consumption is then either:

- Optional – individuals can independently decide whether or not they will use the public good (public transport). These types of goods are provided to citizens for a user fee which is modified by price. This is because mixed goods do not pass through the market. They are not provided for profit and therefore they are provided to users for a user fee calculated on a non-profit basis.
- Mandated by the State (the law) – this primarily applies to preferred goods such as basic education. Their financing involves public budget funds. These types of goods are primarily funded from taxes while using redistributive relations within the system of public budgets. Therefore, it is sometimes referred to as redistribution services or redistributed (public or mixed) goods.

The main defining feature of public (and mixed) goods is the nature of their consumption rather than the nature of their production or financing. The consumption of "pure public goods" is fully irreducible among individual consumers making it difficult to exclude anyone from consumption through the price mechanism. The fact that these goods are consumed by all consumers at the same time and in aggregate allows the conclusion that the consumption of one consumer does not reduce the consumption of others. The marginal cost of producing an additional unit of the public good and its use is therefore zero. This characteristic logically leads to a lack of interest of the private sector in the production of such goods as well as the efforts of consumers to participate in the allocation of funds for their financing.

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DATA

1. Charter of Fundamental Rights and Freedoms, Article 11(4)
2. Act no. 114/1992 Sb., on nature and landscape protection, Section 63(2) to (4)
3. Act no. 289/1995 Sb., the Forest Act, Section 19(1)
4. Act no. 13/1997 Sb., on roads, Section 19
5. Act no. 128/2000 Sb., on municipalities (Municipal Constitution Act), Section 34
6. Act no. 361/2000 Sb. on road traffic, Section 4(a).
7. Act no. 500/2004 Sb., the Administrative Code.
8. Act no. 89/2012, the Civil Code, Section 490