

COMPETITION POLICY IN INFRASTRUCTURE SPECIFIC SECTORS IN THE ESTONIAN CASE: ENTWINING OF NATURAL MONOPOLY AND UNIVERSAL SERVICE¹

Jüri Sepp, Diana Eerma
University of Tartu

Abstract

There is a growing consensus that the successful development of infrastructure specific sectors depends a lot on the adaption of appropriate public policies and the effective implementation of these policies. The way how regulation is implemented plays an important role in infrastructure development and use. In the article the means of regulating economic policy in Estonia are systematized and evaluated looking at practices regarding both natural monopoly and universal service.

Keywords: competition policy, regulation, competition in infrastructure specific sectors, natural monopolies and universal service

JEL Classification: L4, L43, L87, L9

Introduction

The specific objects of competition policy are those economic sectors where the use of competition as the means of control and management is regarded impossible due to economic or political reasons. In those exception areas the invisible hand of market is replaced by the visible hand of bureaucracy. There are two distinct discourses on exception areas in literature (see Eickhoff 1993; Schmidt 2005: 35):

1. Normative regulation theory aims to explain why competition is impossible or unadvisable in some areas and what management tools would instead be more preferable.
2. Positive regulation theory, on the other hand, examines the political economy reasons behind exception areas and the consequences of using non-competitive management tools.

The framework of normative regulation theory is applied to this article focusing on possibilities of mitigation market failures (see survey Sepp 2010: 16 – 42). The aim of the article is to systematize and evaluate the means of regulating economic policy in Estonia, comparing different areas with each other and with recognized views of normative theory. The main attention has been turned at practices regarding both natural and political monopolies in energy, telecommunications, transport and postal service. What could be regarded innovative is viewing exception areas as a means of offering public goods and differentiating them from public choice solutions of

¹ This paper is written with support from the Estonian Ministry of Science and Education foundation project No SF0180037s08 “The path dependent model of the innovation system: development and implementation in the case of a small country”

regulation market (Stigler 1971). Here a problem is caused by certain contradiction between the policy objectives. If in the case of natural monopoly there is need for state supervision in the form of profit limitation, then in the case of universal service, the offering presumes an additional financing arrangement comparing to market solution. In the article are observed compromise solutions in energy sector ², telecommunication, transport and post.

1. Theoretical bases – market failures

In the literature the efficiency and equity principles are given as the most essential motivations for state regulation in case of specific exceptional sectors. For example, Coen and Doyle (1999) suggest systematic as showed in table 1. Still, we will analyze mainly two market failure situations which are often concerns in the infrastructure sectors – natural monopolies and public goods. As in the case of universal service, including guaranteeing geographical uniformity as well security of supply and access to information society are political objectives, it means public goods what are not guaranteed by market. These services are possible to guaranty only via collective decision-making process with the support of special financial measures of economic policy.

Table 1. Efficiency and equity grounds for regulation in sector-specific industries

Industry Characteristics	Equity Arguments	Efficiency Arguments
Electricity: non-storable. Some economies of scale. Demand slowly rising. Innovations in service provision, less in network.	Security of supply Universal service Geographic uniformity	Natural monopoly in transportation: transmission and distribution. Third party access to customers. Incumbency dominance.
Gas: Storable. Demand rising as an input to electric generation. Innovations minimal.	Security of supply Universal service Geographic uniformity	Natural monopoly in transportation. Third party access to customers. Incumbency dominance.
Postal Services: Demand rising, innovations affecting sorting and tracking processes.	Universal service Geographic uniformity	Natural monopoly local delivery network. Incumbency dominance.
Telecommunications: Demand growing significantly, due especially to internet. Innovations significantly affecting industry. Convergence across fixed and mobile, and horizontally with IT and media sector.	Universal service Geographic uniformity Access to information society	Natural monopoly in some elements of the local loop (depends on demand and population density) and scarce resources (eg. Radio spectrum). Incumbency dominance.

Source: Coen *et al* 1999.

² Here is strong analogy with gas, water and heating services which all are grounded on certain physical infrastructure.

Natural monopolies can be talked about when the intracompany expense depression is so relevant to the market that in the long run only one business establishment ends up effective. Decreasing long-term average production costs can therefore express situations where one big enterprise is able to manufacture with cheaper costs than several smaller ones. Electricity economy and railway transport with distribution networks are one of the best examples here. Establishing more than one network in those sectors is probably more expensive than using only one. However, this argument presupposes that the innovations arising from competition cannot compensate additional costs that are consequential to parallel investments.³

If natural monopoly manufactures based on the conditions of perfect competition (price = marginal costs) and the average costs were always higher than marginal costs due to initial investments, it would result in loss that is represented by the dotted rectangular area (figure 1).

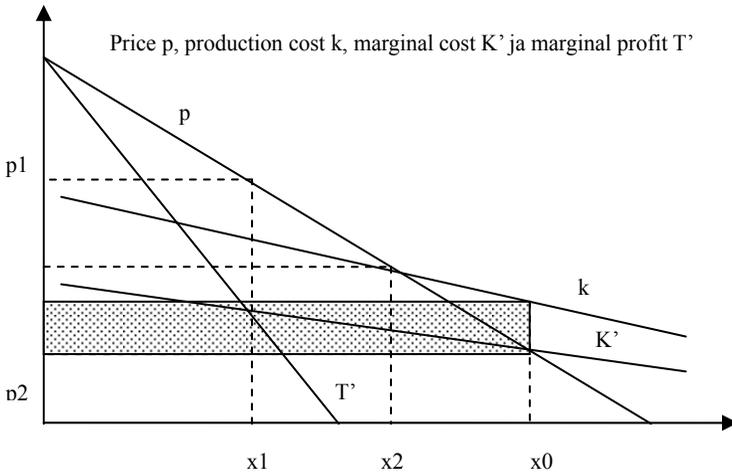


Figure 1. Price layout for natural monopolies.

The monopolist is therefore trying to maximize the profit and produce enterprise optimum x_1 instead of the gross national optimum x_0 , accruing from the condition $T' = K'$. For the consumer it means that the quantity will decrease by $x_0 - x_1$ and the prices will increase by $p_1 - p_0$. If the government has deemed such a monopoly necessary, they have to ensure that the tendency to increase prices, decrease quantities and to give up innovation that are all characteristic to monopolies would be balanced out with suitable methods of control and stimulation (Knieps 2001: 21-44).

³ A good example is mobile network accruing to the main line telephone.

Of course, the contestability of market cannot be overlooked. If the market lacks in all entry and exit barriers (see systematic Sepp 1998: 131–134), then the monopolist will be controlled by potential competitors just as in the case of pure competition. He cannot raise the prices above cost level without the fear of newcomers entering the market with lower prices and thereby losing his market share. Based on that argument, the contestable markets theory introduced by Baumol, Panzar and Willig (1982) has tried to dispute the necessity of government intervention in natural monopolies as well.

What does the degree of potential competition depend on? The newcomers' access to channels of supply and commerce obviously plays a part in it, but so does the availability of highest quality technology. Quite often the advantage of experience helps the older players to be cheaper than their potential competitors. However, the decisive importance lies on sunk costs.

Sunk costs are those investments that are important in order to enter the market, but are lost upon exiting the market. Let us take railroad tracks as an example. The value of railroad tracks that have been laid down is almost entirely sunk costs. Once the railroad traffic has ceased, only a small share can be retrieved. The more specialized the technology and the harder it is to find alternative usage to factors of production, the higher the share of sunk costs. For example, the share of sunk costs in railroad stations is much smaller than in railroad tracks. Sunk costs entail both entry and exit barriers. The higher the losses caused by sunk costs upon exiting the market, the smaller the likelihood of entering the market (under other equal conditions, of course). This is understandable because if the monopolist reacts to the appearance of potential competitors with lowering the prices fast enough, the newcomers won't have the opportunity to amortize sunk costs with price.

If the concentration regarding the economies of scale is unavoidable and sunk costs ensure its stability, it is important to find methods of economic policy in order to diminish the chances of monopolistic profit and loss of welfare due to deviation of price and marginal costs. The following possibilities are applicable (Fritsch 2010: 219-250; Knieps 2001: 79–114).

1. They are mostly associated with the new wave of industrial organization and the concept of essential facility hailing from the United States of America (Knieps 2001: 102–104). It is generally recognized that in order to enable competition it is acceptable to intervene in natural monopoly, usually in some infrastructure's owner's right of disposal. The outcomes of this are the European Union directives for liberalizing (opening) the telecommunications, electricity, gas and transport markets. In each instance, it is aimed to create a so-called permeation competition, which means that the owner of some important device is obliged to enable other interested parties to use that said device under reasonable and non-discriminatory conditions. Assuring of such obligation is especially difficult in vertically integrated markets where the possessor of natural monopoly is also its user. This is often the case of railroad and energy economics.
2. Restricting monopoly's activity in other markets without the advantage of size. This enables to avoid dumping caused by cross subsidizing. A more radical way

is to prohibit monopolist's activity in pre- and after-markets with mandatory and non-discriminatory servicing of all customers in the monopolized sector. Main counterargument to this is usually the abandonment of economies of scope. According to Williamson (1980) theory of transaction costs the vertical integration may be justified also for grounding the risks of specific investments. Joskow (1985, 1991) has been denoted this specially concerning the electric power stations and minings.⁴ If these really are important, it is necessary to choose the better of two evils in each instance.

3. Government price regulation that has several alternatives:
 - Marginal cost prices with indispensable government subsidies. Measuring the marginal costs causes difficulties here. The incentives of expense savings are also at risk when the government decides to cover all over-expenditures. Taxes necessary for subsidies might, in their turn, cause competition changes.
 - Pareto-optimal prices and price differentiation. If the monopolist is able to impose individual prices according to the customers' liquidity, the volume of production is the same as with pure competition. Essentially, the monopoly receives subsidies directly from the consumers. Therefore the necessity for government price control remains.
 - Prices bearing the costs. If the marginal cost rule remains unrealized, only the suboptimal solution is applicable. Its advantage is the absence of problems regarding over-expenditure.
4. Creating anti-power in the market. Theoretically it could be shown that double monopoly could lead to the same outcome as pure competition. Unfortunately it is easy to set off a chain reaction of monopolization.
5. Selling monopoly right at auction. Competition in the market is replaced here with the competition for the market. The seller (often the government) of the right gets the monopolistic profit that can be used, for example, for consumer support. The problem, however, is the entry barrier for newcomers caused by sunk costs. Old market leaders might offer better prices than those that are yet to make specific investments.
6. Quality requirements for monopoly's products and contractual obligation. In case of price ceilings, the monopolist might often try to gain profits by lowering the quality. Quality standards must also compensate monopoly's few development stimuli. In relation to the latter, it is necessary to assure the monopoly's servicing of the less profitable customers as well.

The methods regarding the advantage of size and sunk costs must be based on specific analysis. Otherwise, there might be danger of overdosing with regulations. It is important to be especially careful with imposing market barriers because these are often followed by chain reaction of regulations. Regulations that have already been imposed are very difficult to retract. It is also important to delimit the natural monopoly as narrowly as possible.

⁴ A good survey about the discussion is presented by Richter and Furubotn (2003)

In case of political exception areas there are several meta-purposes on the forefront that are not guaranteed to be achieved through competition. Those can be regarded as public amenities.

- Distributive justice in terms of serving the need. In addition to classic instruments of redistribution (taxes and subsidies), administrative prices (e.g. for children's items) have also been used.
- Politically desirable economic structure. The reasons can be ensuring the quality (standards), equipment insurance in energy, crisis prophylactic (base industries, agriculture, infrastructure), modernizing the industry, etc.
- Adjusting demand when the public and politicians think that the private demand is not rational (compulsory school attendance, prohibition of narcotics).

One of the special cases of exception areas is the so-called universal services that must be available to all residents for reasonable and common prices.⁵ Barriers and/or minimum prices for entering and exiting the market become important here, because there is a risk of "picking a raisin". Only profitable segments are serviced in the market and the less beneficial ones are left without service. The theory of economic policy offers two solutions here:

- 1) cross subsidizing certain lines at the expense of others, which, of course, presupposes blocking the so-called picking the raisin or skimming the milk by creating local monopolies and giving them special privileges;
- 2) if cross subsidizing cannot secure a wide enough access to passenger traffic, additional subsidization by public means or transition of other market participants must be provided.⁶

If it is acceptable to talk about applying highest bidding in order to centralize monopolistic profit *ex ante* to the society and then later using it to, for example, protect risk categories in the case of natural monopolies, then in the case of universal services the so-called lowest bidding is more common. Competition ascertains which enterprise would accept the minimal subsidy when providing a certain level

⁵ EU directive on universal services for telecommunications (2002) specifies the universal services as offering predetermined minimum services for a price acceptable to all end consumers. Eurostat says basically the same thing: Universal service refers to the legal obligation of providing a baseline service in every resident country. It is mostly used for providing necessary services in regulated industries (postal services, telecommunications, transport, etc.). Estonian Consumer Protection Act defines universal services particularly broadly: "universal service – a service provided for public benefit, used by the nation or the majority of people in a certain area, such as gas, electricity, thermal energy, water and sewerage, waste handling and communications services and other similar services."

⁶ According to the EU directive on universal services for telecommunications (2002), it is acceptable to expect some services to be provided to end consumers for a price that differs from the usual market price. It is optimistically noted, however, that giving compensation to entrepreneurs who are obligated to provide certain services under such conditions does not necessarily cause deformation in competition if only their specific net costs are compensated and any additional loss that comes with net costs is covered in a natural way from the viewpoint of competition.

of the service. In both instances, competition in the market is replaced with competition for the market.⁷

Exception areas are therefore branches where competition does not function enough. Experience has shown that even substitutes can have negative effects (see Prosi, 1996). The history of command economy in Eastern Europe is a good example of that.

Limiting competition in certain sectors can not always be explained by problems with the market mechanism. For that reason, the new political economy (public choice) is trying to develop a positive regulation theory that aims to explain political decisions as a response to the requests of certain interest groups (see also Sepp, 1997: 125–164).

If we take into account that business enterprises prefer the security of government regulations to unpredictable competition and that politicians offer state regulations to those that can be expected to vote for or support the politician materially, then the formation of exception areas could be explained by the relationship between demand and supply in a market with state regulations. However, group interests play the decisive role here, not internal factors. A new hypothesis has been raised in the framework of a corresponding theory according to which the state control organizations usually represent the interests of enterprises rather than those of the consumers (*capture theory*).

Previously described state control (regulations) or nationalization of the enterprises (state enterprises) has usually been named as an alternative to mechanisms replacing competition. Unfortunately, the nationalization helps to resolve the problem only in theory. It is based on the presumption that the state or local government representatives in the enterprises stand for public interests and set those above the interests of the enterprise. In reality, the situation tends to be the other way around and the interests of the enterprise that they are running and their own personal agendas are on the foreground.⁸

⁷ See <http://www.regulationbodyofknowledge.org/chapter2/narrative/04/>

⁸ Experiences show that private monopolies regulated by the state are more expedient than state monopolies even in exception areas. The control mechanism in state enterprises is often defective because of the close connections between the effective managers and officials of trade union, political parties and government or even because they might be identical. For that reason, state enterprises (if they cannot be privatized) can't have any privileges that private enterprises don't have (rather the opposite). They must also obey monitoring that is as independent as possible. The situation isn't alleviated by the bigger role of the personnel or labor union in running of the enterprise. The interests of the consumers and the effectiveness of the national economy might thereby suffer even more. Short term profit interests emerge and the enterprise's reaction to prices and other economic signs becomes abnormal (preferring a higher salary to investments). Realizing competition factors becomes more difficult. Because of that the already existing state enterprises must guarantee a clear distinction between the employer (the state) and the employee. In addition to that, the effective managers must be tied to the employer's interests with maximally strong stimuli. In any case, the state organization in

2. Overview of Estonian legislation

The general framework for regulating exception areas is set in the chapter IV in Estonian Competition Act. § 14 and 15 define entrepreneurs with special and exclusive rights and essential facilities, including the entrepreneur who has the natural monopoly. Several special laws have also been passed: the Energy Act regulating the fuel and energy economics (renewed Electricity Market Act 2003), Railways Act (2003 renewed version), Cable Distribution Act (1999) and the general Telecommunications Act (2000) and the Postal Act (2006).

Bases of both the natural monopoly and the dominant position are observed in the Competition Act. Natural monopoly is related to the right of disposal concerning some network or infrastructure that is impossible or unadvisable to duplicate but the access to which is necessary in order to function in the market. In that case, the government and local government⁹ have the price regulation rights, “so that the buyers of the goods of such undertakings or sellers of goods to such undertakings are not placed in a substantially worse situation than they would be if free competition were present in the corresponding area of activity.” (§ 17).¹⁰ Thus, the invisible hand of competition is replaced with the visible hand of state. The legislation also formulates monopolists’ main obligations (§ 18):

- permitting access to the networks and infrastructure under reasonable and non-discriminatory conditions for the purposes of the supply or sale of goods;
- assuring transparency in accounting.

Competition Act also emphasizes one other mechanism that neutralizes the effect that natural monopolies have: to replace the competition in the market with the competition for the market. In order to do that the monopoly must be given out by open tendering according to the Public Procurement Act (RT I 1995, 54, 883: 1996, 49, 953).¹¹ In principle, the idea is correct, but it can not be regarded as a miracle cure. Irreversible investments accord advantages to older market leaders who do not need to worry about the profitability of their investments and can generally make better price offers.

charge of competition policy must stand as an anti-power to the economic power of the enterprise and represent the interests of weaker competitions, purveyors, buyers and consumers. The prospects of success are higher if the competition in the exception areas as well is only against the economic power of private enterprises (e.g. in USA) and not against the politic-economic pressure from state monopolies.

⁹ Privatized Tallinn Water extra profits motivated the *Riigikogu* (parliament of Estonia) to delegate the price monitoring of bigger water undertakers from Tallinn city government to Competition Board in 2010.

¹⁰ In theory this approach is called the just-as-concept.

¹¹ Based on this, the government lay down the public competition policy for special rights according to its 1998 regulation. As a rule, those rights are given out for five years but the government is allowed to make exceptions at the request of a respective minister.

3. Electricity market

The principles of the first Energy Act (RT I 1998, 71, 1201) already corresponded to the first directive of the EU electric energy's domestic market (ESD)¹² and stipulated technically suitable obligations for the network operators:

- to enable direct links between manufacturers and consumers,
- to provide distribution services,
- to allow connecting to the network.

In addition to that, network operators were referred to as market leaders in the context of Competition Act and the possibility of price regulation and transparency of accounting was imposed. The new Electricity Market Act (RT I 2003, 25, 153) enacts essentially the same principles, but it does so with the aid of a substantially more detailed regulation. Hence, the new Act is less transparent than the previous one and bears the seal of lobbying for Estonian Energy, the Estonian electricity monopoly.

Estonia has been provided with an exception in the European Union Treaty of Accession regarding opening the electricity market until 2012, to protect the interests of oil shale power industry. Right now Estonia lacks the technological preparedness to open the market for older EU members. Only the completion of the submarine cable in 2006 created the first qualified connection with the Scandinavian market. At first it started to serve the interests of the electricity export, because regulating the prices of oil shale electricity according to the EU's strict environmental requirements (especially concerning CO₂) is still ongoing. According to the legislation what was effective until 2009 in Estonia, the so-called free consumers whose yearly consumption exceeded 40 GWh had the right to choose their electricity purveyors. Since 2010, which means that with a slight delay, free consumers' rights to bigger consumers were assured in a way that their summary consumption is at least 35% of market bulk volume. In result was increase in price approximately 30 % for heavy users.

Estonia follows the EU requirements when determining network fees (*ex ante* coordinating and disclosing fees). However, the price regulation as a whole is stricter. ETS § 81 dictates that in addition to network fees, electricity and its main raw material, the oil shale prices must also be coordinated with the Competition Board. For small consumers this is probably unavoidable until the actual opening of the market. It has been opined in the literature that sooner or later the *ex ante* state regulation of even small consumers' electricity prices will become insignificant. In that case, the state's responsibility will be, analogously to the telecommunications market, to regulate the fees brought about by switching purveyors, rather than regulating electricity prices. The primary problem will still be regulating or monitoring network fees. Presently, the ETS § 71 stipulates not only three types of fees (admission fee, network usage fee and transmission fee), but also possibilities to

¹² By now the second electricity market directive 2003/54/EC has been replaced by the third 2009/72/EC.

differentiate these according to occurred changes and additional services.¹³ Seeing the asymmetric information in favor of the network operator, the Competition Board faces a very complicated task. Here, simultaneously is need for monopoly control and support of offering universal service. In the 2009, in order to concretize the last direction, the improvement in the Electricity market law adopted for regulation of subsidies of admission fees.¹⁴ Here, differently from several other universal services, state supports consumer not the supplier.

From the standpoint of Estonia, it is important to resolve the energy markets' problems in a complex way, making sure not to create new ones. So it is necessary to account for all the aspects of domestic market, competition policy, emissions trading of exhaust gas, external trade and security. It is also important for Estonia to find a solution to a question how to limit environmental dumping and electricity import from third party countries.

That has helped to set the prerequisites for privatizing energy economics – there is a regulation mechanism that replaces competition. Unfortunately, the first attempt to privatize the Narva Power Plants in the beginning of 2000 failed due to bad (non-competitive) organization and political opposition. Those against privatization ignore the viewpoints of political economy (especially the capture theory). According to the theory, the leaders of state monopolies always tend to represent the interests of the enterprise, rather than the interests of the consumers. Here, the relationships between effective managers and state officials and party politicians are stronger than in the case of private companies. Of course, the additional savings motifs and advantages of effectiveness related to them that are apparent in private economy are also left unused in state enterprises. In 2009, Estonia fulfilled the requirement of the EU 3rd energy packet and the primary network operator Elering was completely separated from the rest of the energy group. That opened a new possibility of at least partially privatizing the remaining share of Estonian Energy by taking it to the stock market. However, for the time being the government prefers the current owner, which is the state, financing the upcoming investments. The government and the parliament have also decided to subsidize the price of electricity produced in new oil shale power stations, which risks being in direct conflict with the EU State Aid rules. It should soon become clear whether European Commission accepts this step made under the pretext of equipment security in order to assure public amenities as a political exception area or will the solution be opening the electricity market with providing sufficient cross-border connections.

¹³ § 71 Network fees

(1) Network enterpriser offering network service takes network fee (hereafter network fees):

1) for connecting with the network (hereafter admission fee);

2) for the changes in consumption and production conditions (hereafter fee for condition changes);

3) for enabling usage of network connection (hereafter fee for network usage);

4) for electricity transmission (hereafter transmission fee);

5) for additional services which are directly connected to the network services.

¹⁴ <https://www.riigiteataja.ee/akt/13120873>

4. Telecommunications

If the regulation in energy sector took place rather calmly (political discussions are generally in relation to privatization attempts), then the early stages in telecommunications sector were received with considerably more critique. The first object of criticism was the Cable Distribution Act (RT I 1999, 25, 364). Local government was allowed to divide its territory into different areas like a market that all received one or more cable television licenses from the Communications Board of the time. Just one license was given if the applicant of the license was obliged to provide telephone service as well. This possibility for a local monopoly evoked objections. It was a situation where competition in one market (cable television) was sacrificed in the name of competition in another, more important telephone service market. This has been abandoned by now (RT I 2001, 53, 310).

Telecommunications Act that followed (RT I 2000, 18, 116) emphasizes the monitoring of enterprises with substantial market force that are active in the telecommunications market. Substantial market force is characterized by the 25% market share. If the market share exceeds 40% then certain competition policy provisions also apply. Nevertheless, it is not clear why, for example, mobile communications needs such special regulations, especially given its very competitive oligopoly structure that formed after the formerly state monopoly Estonian Telephone was privatized and its initial monopolistic concession contract expired. Authors find that regulating undertakings in a dominant position is enough.

On the other hand, the complexity of assuring permeation competition has become particularly evident. The owner of the main line as an essential facility, in this case Estonian Telephone, attempted to limit other operators' activity by imposing high interconnection charges using their market position. This forced *Riigikogu* to go back to direct price regulation and temporarily fixate the relations between interconnection charges and Estonian Telephone's end service prices¹⁵ (RT I 2001, 23, 125). This was not the usual and acknowledged price monitoring *ex post*, but interventionist price regulation *ex ante*. Temporarily (during the period of market opening) it could be deemed justifiable. This rule has been abandoned by now.

5. Railway transport

Fostering railway traffic into state networks is not an easy task in the fragmented European market. The obstacles include technical incompatibility between different railway systems and some Member States' governments' unwillingness to open the competition to foreign undertakings. The European Union has gradually moved towards securing a wider access to networks across the continent to railway undertakings. Liberalization does not necessarily mean privatization¹⁶, because both state and private enterprises can compete on the opening markets. As with electricity

¹⁵ 15-35% of Estonian Telephone's national call tariff rate.

¹⁶ Quite the opposite, because grants from the EU support funds are available only for developing public railways.

economy, it is necessary to distinguish possessing and governing infrastructure from operating on it, like it happened with Estonian railway monopoly in 2009.

The Act deregulating the railway activity in Estonia was passed in 2003 and it has been supplemented several times, most recently in 2009. Deregulation has caused conflicts between market participants on the railway as well. The former monopoly Estonian Railway¹⁷, who owns the railway infrastructure through AS EVR Infra, is feeling especially affected by the loss of control in the market of railway transport services. While the first Railways Act regarded the creation of competition rather carefully, compelling Estonian Railway to give 25% of the railway capacity to other enterprises by way of competition, the current Act (RTI 2003, 79, 530) is considerably more radical. Due to Estonian Railway's vertical integration, the organization of transport market is now the task of the governmental Technical Surveillance Authority (§ 63), whereby the entire railway infrastructure capacity is given out by way of competition¹⁸. Also, the Estonian Railway's transport undertaking EVR Cargo AS has to compete for the market under the same conditions as everybody else.

In the last couple of years, 4-8 railway enterprises have applied for Estonian Railway infrastructure capacity, six enterprises during the period of 2009/2010: EVR – EVR Cargo AS, WGT – Westgate Transport OÜ, ERS – AS E.R.S, EDR – South-West Railway AS, ELR – AS Electric Railway, GoRail – AS GoRail.

The access to infrastructure is for pay. The fee for the use of railway infrastructure that provides the access to essential services and service enhancements, access to assistance services and the fee for the use of a single capacity for special purposes is determined by the methodology of calculating the fee for the use of railway infrastructure imposed by the Minister of Economic Affairs and Communications.¹⁹ If the owner of the infrastructure acts as a transport operator or is connected to the transport operators through their owners, the functions of determining the fee for the use go to the Technical Surveillance Authority. For that reason, both the forecast and detailed fees for the use are determined by the Technical Surveillance Authority at the present time.²⁰

¹⁷ The process of privatization and re-nationalization that has taken place is noteworthy. The privatization of Estonian Railway was completed on August 31, 2001. On that day, Baltic Rail Services (BRS) finalized their purchase of 66% of Estonian Railway shares from the Estonian government. In 2006, however, they agreed that Estonia would buy the shares back for 2.35 billion Estonian kroon.

¹⁸ Railway infrastructure capacity is the potential to use railway infrastructure at a certain period. The capacity is divided into a yearly timetable period. The timetable period on the railway starts on the last Sunday in May and ends on the last Sunday in May of next year. Both the railway infrastructures of AS EVR Infra and South-West Railway Infrastructure AS are divided.

¹⁹ <http://www.riigiteataja.ee/ert/act.jsp?id=13304518>

²⁰ The Director General of the Technical Surveillance Authority determines the forecast fee for the use of essential services, service enhancements and assistance services for the entire timetable period two months before the timetable period starts. In case the railway

If politics previously came to play in exception areas with natural monopolies, then in case of the railway transport the passenger transport is in fact a political exception area, which entails providing political, i.e. public amenities or at least subsidizing positive external impacts. This is best apparent in subsidizing AS South-West Railway²¹ and AS Electric Railway²² that are both involved in passenger transport, in order to assure a passenger transport service that the market itself would not be capable of providing.

In 2009, the government subsidized the AS South-West Railway passenger transport with 182 million kroon. The same amount is planned for this year as well. According to the contract, the volume of passenger transport in 2009 was 1.7 million line kilometers. The contract also covers passenger train traffic on the lines of Tartu, Pärnu, Viljandi, Narva and Orava. In the budget for 2010, the subsidy for Electric Railway increased from 54 million kroon to 60 million kroon. Additionally, the budget contains a planned reserve for public transport that is 12 million kroon in 2010 instead of the 23 million kroon in 2009.²³

6. Bus transport

Passenger transport by buses on local county lines is an even clearer example of political exception areas. In the 2010 state budget project the planned subsidy for bus lines is 339 million kroon, the same as in 2009.²⁴

If we look at a specific transport service, there are no fundamental or technical problems in order to exclude tax payers from utilizing it. It is a private amenity. Here, the public amenity and market failure are not so much related to a specific transport service but more to the public availability of it for the majority of population. This is the factor that the market might not guarantee by itself. The situation is analogous to the universal service that is usually referred to in the context of postal and telecommunications services. Therefore, Levy (2009) suggests

infrastructure contract is issued for longer than one timetable period, the Technical Surveillance Authority co-ordinates the fee for the use of railway infrastructure to the period requested by both parties, guided by the motions of contract parties and the requirements in the legislations and accounting for the economic reasoning and the situation of competition in rail freight-transport areas.

²¹ South-West Railway AS is a railway enterprise in Estonia that was established in 1997. Since 2000, it belongs to the public limited company GB Railways Estonia AS that itself belongs to the British company GB Railways Group Plc. Since 2003, GB Railways Group Plc belongs to First Group Plc.

²² During the establishment of the undertaking, all the shares belonged to the AS Estonian Railway. Since November 15, 2000, 100% of Electric Railway shares were given to the Republic of Estonia that is represented by today's Ministry of Economic Affairs and Communications.

²³ http://www.ytra.eu/index.php?option=com_content&view=article&id=352:2010-aastal-jaeueb-uehistranspordi-dotatsioon-sarnaseks&catid=34:uudised&Itemid=57

²⁴ http://www.ytra.eu/index.php?option=com_content&view=article&id=352:2010-aastal-jaeueb-uehistranspordi-dotatsioon-sarnaseks&catid=34:uudised&Itemid=57

using the concept of the universal service in public transport as well. For Levy, the universal service is a service with an assured quality and reasonable price that is intended for all users of transport services independent of their geographic location. It is necessary to impose target values for services and the financing of those in order to implement universal service.

The alternative free market might lead to an important price differentiation and undersupply of certain market segments. It is understandable that there is no need to fear the lack of tendering on lines that connect larger centers and the price will end up quite low in the free market. Providing the peripheries with transport services, on the other hand, implies higher prices due to limited demand and additional costs that may result in being overly expensive and lead to market loss.

Subsidies should provide an effective service and sufficient tendering. Naturally, the need for subsidies depends on the relationship (proportion) between commercial and assisting lines. The more commercial lines there are, the less possibilities for cross subsidizing in monopolistic public line sets and the more the need for direct subsidies.

The key question in areas with a smaller population concentration is providing the people with minimal transportation possibilities with the aid of grants, in areas where the population concentration is higher, it is necessary to assure the optimal capacity with different types of transport, commercial lines and assisting lines, which is lacking at the moment. Because some lines working and assisting in the bases of commercialism can not be coordinated due to the inexpediency of some assisting lines, the need for increasing grants in case of a dense commercial line network has risen. Large-scale opening of commercial lines might entail a significant loss of ticket profit on the lines that are operating under the contract of public servicing, which in its turn entails the need for increasing grants.

Generally, the grants for county bus lines are characterized by their correlation to the surface area and population of the county (table 2 and 3). Regression coefficients are statistically relevant to both factors.

7. Postal market

International Post Corporation (IPC) and German Institute for Economic Research published a study²⁵ in 2007 where they argued that the authors of legislations do not understand the economic functioning of the postal sector. It is not right to force one model of liberalization on several different economic sectors. If gas, electricity and telecommunications consist of pipes, cables and other similar things, then postal sector is mostly characterized by delivering (intensity of labor force) letters, parcels, etc. sent by people and the roads that are open to everybody. According to the study, the postal sector is not a natural monopoly because there are no entry barriers in this

²⁵ How to regulate the postal industry. An economic approach.
http://www.postinsight.com/files/ipc_diw_study_sept_07.pdf

market. Attention should be turned towards financing universal services and the hold on them in order to prevent market deformations. The authors believe that it would be better to lose sector specific regulations and let the valid Competition Acts deal with the deficits that might originate from the postal market.

Table 2. State budget grants for county bus lines in Estonia in 2009

County	Surface rea km ²	Population	Grant thousand kr.
HARJU	4 333	556 283	47 900
HIUMAA	1 023	10 285	7 000
IDA-VIRU	3 364	166 350	31 600
JÕGEVA	2 604	35 220	11 600
JÄRVA	2 461	34 826	12 500
LÄÄNE	2 383	27 518	12 800
LÄÄNE-VIRU	3 627	66 234	19 000
PÕLVA	2 165	31 010	16 230
PÄRNU	4 806	90 409	44 200
RAPLA	2 980	37 145	10 870
SAARE	2 922	35 851	18 750
TARTU	2 993	148 886	27 600
VALGA	2 044	33 960	22 590
VILJANDI	3 422	53 496	17 750
VÕRU	2 305	37 752	21 450
Total	43 432	1 365 845	321 840

Source: <http://www.siseministerium.ee/kov/>.

Table 3. Grant correlation to the county surface area and population (linear regression)

	Regression coefficient	Standard error	t-statistic
Intercept	-1 309	5 764	-0.22
Surface area (km ²)	6.57	2.13	3.08
Population	0.041	0.015	2.79

Source: Authors' calculations.

EU is ready to conclude the 15-year process of opening the postal market, having conquered the differences of opinion regarding liberalization of the market and offering universal service to the customers.²⁶ The first Postal Service Directive that was passed in 1997 and the second one from 2002 opened several postal service markets, including home delivery and express services, but these were limited to services regarding letters with a weight up to 50 g, because there lacked sufficient competition. Existing service providers were allowed to continue operating on that so-called “reserved area” that covers more than 70% of all mail in the EU and about

²⁶ See more <http://www.euractiv.com/en/transport/postal-services-liberalisation/article-161377>.

60% of all postal service profits, in order to keep their role as a “universal service provider”. The third directive in 2008 was the last step towards market liberalization. At least 95% of the market was to be released by 2011. Exceptions were allowed for new Member States, countries with “a particularly difficult topography or with a huge number of islands” (Greece) or with “a small population and a limited geographical size” (Luxembourg). In order to prevent competition deformities, a reciprocity clause prohibiting postal service providers in countries with “reserved areas” from entering the market that is already completely open, was introduced.

The provider of the universal service must gather every resident’s mail and deliver it at least once a day, five days a week. Existing providers believe that it is impossible to follow that requirement in the conditions of pure competition, because

- providing such a frequent service that extends everywhere to every citizen is expensive,
- “reserved areas” allowed the active enterprises to retain a profitable monopoly situation in a sector of letters weighing less than 50 g,
- they fear that eliminating such a monopoly allows newcomers to occupy the most profitable fields of activity (e.g. inter-establishment service providing in the cities), abandoning the servicing of isolated customers,
- old postal enterprises lose their income that they need in order to finance servicing less profitable customers.

However, the directive’s measures aim to keep the universal postal service viable in the competitive market as well, stipulating financing mechanisms, e.g. direct government subsidies, cross subsidizing from profitable areas to those making a loss or founding a compensation fund, which would mean additional service fees for the newcomers or the customers. The new directive allows the governments to finance the universal postal service in a way that suits their national distinctions, but does not hinder the functioning of the free market. The Commission is considering allowing national support. Nevertheless, traditional service providers are unsure, because in the long run, the state budgets are always under great pressure. They prefer the “competitor-pays” system where the newcomers have to pay a fee in order to enter the market. That kind of a compensation fund isn’t supported by private enterprises. The parliament has demanded an adjustment in the Directive stating that the Commission must issue a “detailed instruction” on how to calculate the net profit of the universal postal service. This is necessary in order to assure judicial security, create a level playing field and to prevent violation of Competition Acts.

In April 2009, Estonia was the fifth country in Europe to fully open its postal market, meaning that the Estonian Post lost its privilege to forward regular letters weighing up to 50 g.²⁷ After that date, all the market participants had the right to

²⁷ Countries that have opened their postal markets previously are Sweden, Finland, Great Britain and, since 2008, Germany. Netherlands opened their postal market alongside Estonia on April 1, 2009. The entire European postal market must be opened on January 1, 2013, by the latest.

forward regular letters with a weight up to 50 g, according to the terms stated in the new Postal Act. Opening of the market should benefit everybody that use postal services, i.e. the customers and small and medium sized postal enterprises and through them the entire economy. After the market was opened, the sustainable providing of the universal postal service was guaranteed on the whole territory of the country (letters weighing up to 2 kg and parcels weighing up to 20 kg delivered as regular, registered or insured mail). For the AS Estonian Post, opening the market entailed the motivation for more efficient functioning, reducing costs and offering good and novel services.

Postal market in Estonia in 2008 covered 39 different postal service providers (including 3 authorized enterprises in the letter service market) (table 4). The turnover in the postal market was 1.2 billion kroon (universal postal service 40.1%, courier postal service 36.1%, delivery of periodical publication 12.7% of market capacity).

Table 4. Postal market participants in Estonia in 2008

Services provided	Number of service providers
Universal postal service	1
Delivering letters as regular, registered and insured mail	2
Delivering parcels as regular, registered and insured mail	0
Delivering courier packages	38
Delivering direct mail	6
Delivering periodical publications	2
Other postal services	2

Source: Competition Board <http://www.konkurentsiamet.ee/?id=13903>.

The previous state postal monopoly Estonian Post (EP) won the competition for offering the universal postal service in the Republic of Estonia in 2008. In addition to traditional postal services, such as delivering letters, parcels and periodical publications, the EP also offers express, stock, transport, financial and other services. It has 407 post offices and 3116 mailboxes. 2910 of 3769 employees were in charge of providing postal services. The proportion of the universal postal service was 52% of the EP turnover, whereby its relative importance in the enterprise increased regardless of the decrease of turnover. There was an especially steep decrease in the volume of letters delivered as regular mail.

Amendments to the Postal Act that took effect on January 1, 2009²⁸, stipulate the regulation of the obligation to provide universal service, which guarantees that the universal service with assured quality and reasonable prices are available to

²⁸ <https://www.riigiteataja.ee/ert/act.jsp?id=13203345>

everybody on the territory of the Republic of Estonia. The universal postal service consists of the following national and international postal services:

- delivering letters as regular, registered and insured mail with a weight up to 2 kg;
- delivering parcels as regular, registered and insured mail with a weight up to 20 kg;

At least 90% of the letters sent as regular mail must be delivered to the addressee on the next workday after they are posted.

According to the EU directives, the monitoring of the fulfillment of requirements in the postal service regulation must be executed by a regulator legally and financially independent of the postal service provider, who, in Estonia, is the Competition Board. The compensation system of the universal postal service divides the postal market into authorized and unauthorized services.

- In every quarter of the year universal postal service tax (either a fixed percentage of authorized services' turnover or a given sum of a provided postal service unit) imposed by the government's regulation is collected on authorized services (except universal postal service);²⁹
- Once per a quarter, the provider of universal postal service has the right to submit an application for compensation of unreasonably high expenses due to fulfilling the requirements of the universal postal service to the Competition Board.³⁰ The affordable fees for universal postal service (fees charged from the user of the service) are determined by the Minister of Economic Affairs and Communications and charging higher fees for the service is not allowed.

Conclusion

In conclusion, we systematize exception areas according to primary distinctive features (table 5).

Natural monopolies can be absolute or partial. In the former case, we think about electricity and railway networks, where the *ex ante* regulation is permanent. The same goes for the gas-, water- and heat economy networks (pipelines). Electronic telecommunication entrepreneurs who may be regulated according to the Competition Board's special analysis and decision could be regarded as partial monopolies. Natural monopolies are also divided into vertically integrated and

²⁹ The regulation no. 46 "Imposing the tax rate on universal postal service" from the Minister of Economic Affairs and Communications on March 5, 2009, lays down the following tax rates for authorized postal services (except universal postal service):

- letter delivered as regular mail 2.3 kroon;
- letter delivered as registered mail 18.9 kroon;
- letter delivered as insured mail 18.9 kroon;

<https://www.riigiteataja.ee/ert/act.jsp?replstring=33&dyn=13203345&id=13156387>

³⁰ <https://www.riigiteataja.ee/ert/act.jsp?replstring=33&dyn=13203345&id=13156505>

disintegrated entrepreneurs. Estonian Railway represents the former and *Elering* the latter type.

Respectively, the intensity and format of the regulation is different. *Elering* makes the decision to mediate the electricity manufacturers and consumers independently under the discipline stated in the regulations. ERV Infra’s railway capacity is divided by a governmental institution – the Competition Board.

Table 5. Relations between natural monopoly and universal service and state regulation in the Estonian infrastructural sectors

Characteristic	Network of electricity, gas, water, heating	Railway		Electronic communication		Post: regular mail and packages	Local bus transport
		Infra-structure	Passenger transport	Net-work	Public phone		
Natural monopoly	+	+		?		?	?
Vertically integrated	+/-	+		+			
Universal service	+		+	+	+	+	+
with monopoly	+						+
with subsidy	+	+	+	+	+	+	+
• from budget	+	+	+				+
• from transfer				+	+	+	

Source: Compiled by authors.

Political exception areas are primarily connected to providing the universal service. It is a service that is physically (geographically) and economically accessible to the consumers. Furthermore, the accessibility of it is a good/service that the market does not compensate and therefore it can be regarded as a public good. Examples include public (pay) phone and regular mail services respectively in the electronic telecommunication and postal sectors, but also bus and railway traffic aimed for passengers. There are certain analogies with security of supply, what is emphasized in energy that can not be separately provided to single consumers. In this case as well, it is inclusive and therefore a public good. In short, we come into contact with the universal service practically in every infrastructure sector, which is understandable, given the specifics of this area. Therefore, is the general problem, how to combine the control of natural monopoly with ensuring the universal service.

The organization of providing the public good may greatly vary in different areas. In the postal and telecommunications market it is assured with transfers (compensations) from the competitors. True, only if exceptional costs accompany the providing of public goods. The entrepreneurs here usually have such a wide range of assortment that they are capable of providing moderate public good without

a lot of compensation. In passenger transport by railway and bus transport, the providers of the universal service are those infrastructure operators for whom the universal service is the principal activity. In this case, the public good is financed directly from the state budget. Ticket sales can be regarded as covering private amenities. In case of the local bus lines, cross subsidizing that demands the use of regional monopolies comes to play as a source. In the electricity market, the network operator Elering has the exclusive right to provide a service, based on what they should be able to generate a profit that does not need any additional mechanisms of subsidizing when the market will open up in 2013.

References

1. **Baumol, W., Panzar, J., Willig, R.** (1982). *Contestable Markets and the Theory of Industry Structure*. San Diego: Harcourt Brace Jovanovich.
2. *Body of Knowledge on Infrastructure Regulation*.
<http://www.regulationbodyofknowledge.org/chapter2/narrative/04/>
3. **Coen, D.; Doyle, C.** (1999). *Designing Economic Regulatory Institutions for European Network Industries*. London Business School. 12 p.
4. **Eickhof, N.** (1993): Zur Legitimation ordnungspolitischer Ausnahmeregelungen, in: *Ordo*, Bd. 44, S. 203-222.
5. **Fritsch, M.** (2010). *Marktversagen und Wirtschaftspolitik: Mikroökonomische Grundlagen staatlichen Handelns*. 8. Aufl. München: Vahlen.
6. **Joskow, P. L.** (1985). Vertical Integration and Long-Term Contracts : The Case of Coal-Burning Electricity Generating Plants. – *Journal of Law, Economics and Organization* 1, 33-80.
7. **Joskow, P. L.** (1991). The Role of Transaction Cost Economics in Antitrust and Public Utility Regulatory Policies. – *Journal of Law, Economics and Organization* 7, 53-83.
8. **Knieps, G.** (2001). *Wettbewerbsökonomie*. Springer.
9. **Richter, R.; Furubotn, E.** (2003) *Neue Institutionenökonomik*. 3. Aufl. Mohr Siebeck.
10. **Schmidt, I.** (2005). *Wettbewerbspolitik und Kartellrecht: eine interdisziplinäre Einführung*. Stuttgart: Lucius&Lucius.
11. **Sepp, J.** (1998). *Konkurentsipoliitika*. Tartu: TÜ Kirjastus.
12. **Sepp, J.** (1997). *Poliitika majanduslik teooria*. Tartu: TÜ Kirjastus.
13. **Sepp, J.** (2010). *Turutõrgete leevendamise teoreetilised alused*. – *Majanduspoliitika võimalused turutõrgete leevendamisel*. Tartu: TÜ Kirjastus. Lk. 16-42.
14. **Stigler, G.** (1971). "The Theory of Economic Regulation," *Bell Journal of Economics*, The RAND Corporation, vol. 2(1), pp. 3-21.
15. **Williamson, O.** (1985) *The Economic Institutions of Capitalism*. New York.