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How to stop VAT frauds on the fuel market: a usual  
price rule

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## **Abstract**

Pavel Semerád: **How to stop VAT frauds on the fuel market: a usual price rule**

VAT fraud has now grown extensive and complex. One of the biggest problems is carousel fraud which causes huge losses to public budgets in many countries. Attention is devoted to the fuel market. A methodological tool that allows recognizing potential tax fraud on the basis of unusual sale prices was developed. For this reason, sale prices were collected and these could be available to judges and tax administrators when they make a decision about whether the price was usual or not. To get closer to reality, modified prices, which reflect real conditions on the market, e.g. placing goods in a tax warehouse, were also used.

## **Key words**

Carousel frauds, fuels, tax evasion, usual price, value added tax.

JEL: H20, H26

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## **Introduction**

As early as 1764 Beccaria observed that rich and high-ranking people committed actions that were not within the limits of the law (Beccaria, 1963). Similar findings were reported by Ross (1907), who focused on entrepreneurs involved in harmful acts behind the mask of respectability. Therefore, he considered them the most dangerous enemies of society. Yet today there is still a problem with the vague definition of what is and is not a crime (Aubert, 1952). This is because a lot of acts look like normal behavior (Farell and Franco, 1999).

For this reason, Becker's (1968) definition of crime includes not only acts such as murder, robbery and other serious violent offences but also the so-called white-collar crimes, e.g. tax fraud. White-collar crimes pose a threat to society because financial losses from these crimes greatly exceed those from street crimes (Forti and Visconti, 2007; Friedrichs, 2010). Johns and Slemrod (2010) reported that people with higher incomes are likely to receive incomes from sources which are hard to monitor by tax authorities. According to Forte (1987), taxpayers learn how to invest in tax-free activities and how to (aggressively) plan taxes. With the increase in economic fraud we may encounter deviant acts both inside and outside the company (Clinard and Yeager, 1982; Ermann and Lundman, 1978; Schragger and Short, 1978). At the same time there are cases of organized crime even in the international context (e.g. DiLorenzo, 2012).

As Allingham and Sandmo (1972) show there are a lot of forms of tax fraud and therefore, it is not possible to carry out an in-depth analysis. They affect both direct and indirect taxes. According to Slemrod (2007), none of the governments can rely on taxpayers' sense of obligation to pay everything they are obligated to pay. Some do so, others do not. Marelli (1987) concluded that the shadow economy is a significant phenomenon of our times which is not going to disappear soon. Schneider and Klinglmair (2004) reported that the average size of underground economy in OECD countries is 17% of their gross domestic product. Fraud has a huge impact not only on state fiscal policy (Torgler and Schaltegger, 2005), but also on honest taxpayers that face competitive disadvantage. Subsequently, even these taxpayers can consider committing their own fraud to survive in the market.

## **VAT carousel frauds**

Some authors state that the value-added tax (VAT) is a very good, strong and profitable tax (Ballard et al., 1987; Cnossen, 1990; Miller, 1986). VAT revenues make up more than one fifth of global tax revenues (Borseli, 2011). However, recent results showed that EU Member States are affected by

VAT fraud (e.g. Tumpel and Wurm, 2012). Losses to VAT fraud are estimated to be in the range of 100 – 200 billion euro every year and vary considerably depending on the indicator variables used (European Commission, 2013; Fedeli and Forte 2011; Podlipnik, 2012). This systematic and widespread fraud prompted the European Commission (European Commission, 2012) to amend Directives governing VAT administration and collection. For example, the introduction of the Quick Reaction Mechanism (Council Directive 2013/42/EU) allows individual states to implement for a limited period of time certain emergency measures without common agreement of all Member States. This was impossible until the year 2013.

Lazăr (2013) mentioned carousel fraud as a specific type of VAT fraud, and essentially it is a sophisticated system of sales of taxable goods. It has a multiple structure in which taxpayers from several countries are involved. Carousel fraud uses complex mechanisms that make it hard to uncover and punish those who are involved in the scam. As reported by Pfeiffer and Semerád (2013) some tax authorities tried to hold members of the carousel fraud liable for the lost VAT. However, the key feature of the missing trader is either to leave the market or go bankrupt. A common practice is that tax liability is transferred to an entity that cannot be punished, acting as a buffer. Specific cases are solved by the European Court of Justice in the form of preliminary questions and subsequent judgments will then become binding like the Directives.

Professionally educated and well-organized groups focus mainly on commodities that are easy to sell and move and that are easily interchangeable. In the past, microchip, mobile phone and sunglasses fraud was uncovered. The same qualities as those mentioned above can be found in motor fuels. Moreover, they are unique in comparison with other conventional commodities and are also subject to mineral oil tax. The overall tax burden depends on the rates, approximately half of the final sales price. There are also cases of excise tax fraud when other types of oil with a lower tax rate are illegally added to motor fuels (Fung, 2011; Gawande and Kaware, 2013; Newbery, 2005). These fraud figures can be found in the United Kingdom of Great Britain and Northern Ireland where estimated annual losses were approximately 850 million pounds in the year 2003 (House of Commons, 2005).

The topic of this paper is VAT fraud, which has been a problem e.g. in the Czech Republic, Estonia, Hungary and Poland. In the Czech Republic alone these scams cost almost 300 million euro annually (ČAPPO, 2012; Kalousek, 2011; Senators Group, 2013). Fraudsters use models of carousel fraud where there is a missing trader in the chain of taxpayers that after the end of the tax period fails for various reasons to fulfill his tax liability. This is approximately 0.25 EUR/liter (exchange rate 1 EUR=25 CZK). As a consequence of this, there are goods on the market for which scammers can charge any price they want. The difference between the fraudulent price and the usual price can be up to 0.10

EUR/liter, and in long term honest traders cannot compete with scammers on price. This is confirmed by the findings of Semerád and David (2014) that fuel traders themselves find the difference of more than 0.02 EUR/liter too hard to cover within the limits of the law.

Although the following facts cannot be considered evidence of tax fraud, it is worth contemplating why multinational chains decided to leave the Czech market. British Petrol sold the Aral network of petrol stations in the year 2005. In 2007 Esso (ExxonMobile) and Jet (ConocoPhillips) petrol stations were sold followed by PapOil in 2012. In 2014 Lukoil and Agip (Eni) petrol stations were sold. Even before, Eni had announced the sale of its share in the only Czech refinery company (ČESKÁ RAFINERSKÁ, a.s.). Petrol traders speculated about the departure of OMV (2011) and Shell (2012), which had already sold its share in ČESKÁ RAFINERSKÁ, a.s. If OMV and Shell were really sold, the only multinational companies operating on the Czech market would be MOL and PKN Orlen.

One way of fighting against unusual prices is to transfer liability for unpaid tax to another entity. This is in accordance with Council Directive 2006/112/EC, which says that states should have the option to transfer tax liability, for example, to a recipient of a taxable supply. The Czech Republic has introduced provisions to the national law on VAT that state that the recipient of a taxable supply is liable for unpaid tax if the payment without any economic justification is apparently different from the usual price. For commodities with a sufficient number of publicly available market prices this does not have to be difficult. However, there is no official database of fuel traded between distributors (not at petrol stations).

The aim of the author is to create on the basis of the analysis of the current state of fuel market a methodological tool for early identification of potential VAT fraud. Although the study focuses primarily on the Czech Republic, it respects the legal regulations of the European Union and the judgments of the European Court of Justice.

The main goal is to avoid increase in fixed and variable costs for the public and the private sector and to avoid negative impacts on honest taxpayers. Emphasis is put on simplicity, which means that new administrative measures that put an excessive burden on distributors and petrol station operators should not be introduced. The methodology should make better use of information that is already available to the tax authorities and that could be used more effectively in the fight against tax fraud.

## **1 Data and methods**

To make enforcement of liability for unpaid tax due to unusual prices possible at tax and judicial processes, it was necessary to collect the largest possible database of available prices. In the Czech

market there is a great number of entities – one refinery (two branches), 55 entities operating tax warehouses and approximately 160 registered fuel distributors (Customs Administration, 2014). At the Ministry of Industry and Trade (2014) a total of 6,918 petrol stations are registered. Nevertheless, officially it is possible to get only one list of prices and these are prices provided by the company ČEPRO, a.s.

ČEPRO, a.s. (hereafter referred to as Čepro) provides only its basic weekly prices (Tuesday - Monday). These prices cannot be regarded as a standard of a normal price as individual prices for specific customers of the company might be considered nonstandard. For further use this type of prices is denoted by  $P_A$ .

Čepro (2013) is also the source of important information about a storage fee. This enabled to extend the calculation by incorporating another option offered by the market. In some cases it can be profitable for the trader to place the goods in a tax warehouse, hold them for some time and sell them later at a profit if the prices increase (or at a loss in the opposite case).  $P_B$  is a comparative price that reflects the prices of Čepro and the option of tax warehousing in the form of a storage fee ( $S$ ). Semerád (2013) proposes to monitor individual prices over time and compare them in the following manner. The price for the week is compared with the prices in the previous six weeks which include a storage fee (1) of the operator of a tax warehouse (refinery).

$$S = A + B + C + D + E + F + G \quad (1)$$

A - a fee for placing goods [CZK/m<sup>3</sup>],

B - a fee for transportation [CZK/m<sup>3</sup>],

C - a fee for storage [CZK/m<sup>3</sup>],

D - a fee for protection [CZK/m<sup>3</sup>],

E - a fee for removal of goods [CZK/m<sup>3</sup>],

F - a fee for bio-fuel handling [CZK/m<sup>3</sup>],

G - a fee for bio-fuel [CZK/m<sup>3</sup>] includes the price of a bio-component and its volume.

Čepro uses 11 different categories of storage capacity from 0-4,999 m<sup>3</sup> (Category 1) up to 100,000 m<sup>3</sup> or more (Category 11.). When adjusted to 1 liter, the largest storage limit has the lowest possible storage fee in the first calendar month - approximately EUR 0.012. With lower capacities the fee increases. If the fuel continues to be stored for another month, the company requires payment of a storage fee and a protection fee again. This increases the distribution costs by another 0.003 EUR/liter for each additional commenced month of storage and the option of storage becomes less

profitable. Furthermore, it is important to add that in the first calendar year all items depending on the stored quantitative limit are charged in cubic meters. In  $P_B$  the lowest price of the reporting period was chosen. This is how a well-informed fuel trader would make a rational decision.

Fuel traders meet the regulations of the tax authorities and every month they send information about their purchases and sales (special record-keeping obligation). For this reason, the General Tax Directorate was officially asked to provide information about motor fuel prices in particular periods of the year 2012. The information was in the form of aggregate average prices and the minimum price. In this paper the prices of diesel with a CN code 2710 1941 were used. A price database thus includes three more types of prices:

$P_C$  is an average price of each day obtained from the General Tax Directorate.

$P_D$  is a price of  $P_C$  after deduction of an acceptable difference of 0.02 EUR/liter.

$P_E$  is the lowest price of each day obtained from the General Tax Directorate.

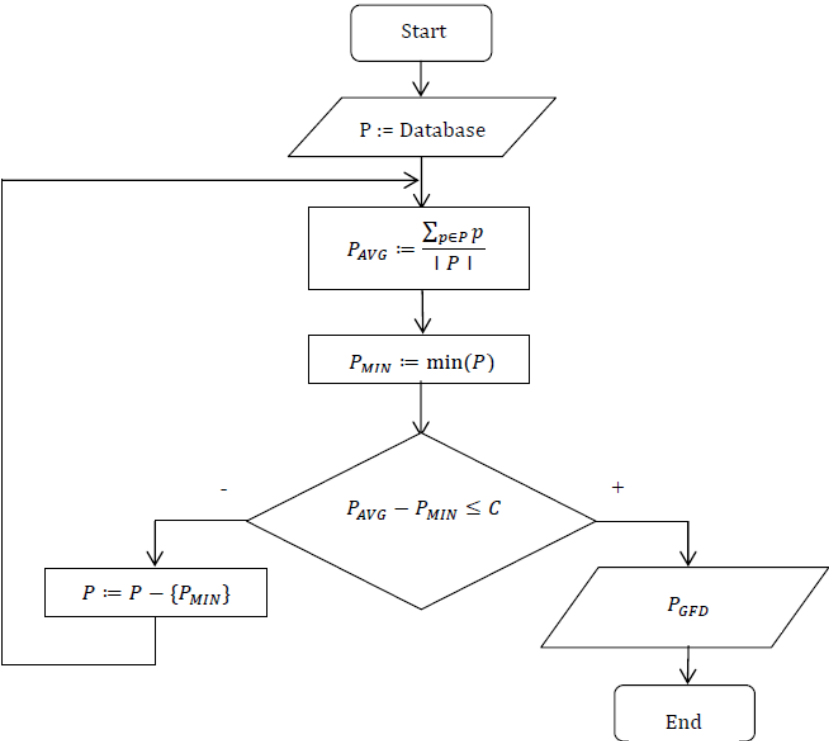


Figure 1. Flowchart for eliminating errors in processing the minimum prices obtained from the General Tax Directorate.

In the documents about minimum prices there must have been some mistakes because the differences during one calendar week amounted to EUR 0.04 – 0.37. In such a case the tax administrator should invite the sender of the information to make corrections because this may not



have been simply a mistake. This opens up room for suspicion that tax fraud could have been committed.

In order to remove these errors, an algorithm shown in Figure 1 was used. After filtering out incorrect data, the prices meeting the condition set were further used. This was a cluster of prices and only the lowest value of each week (price set for a particular day) was chosen. The value of 0.02 EUR/liter was used as a C constant.

The author apparently received the largest publicly available database of traded prices on the Czech market in the period under study. This information could be available to the court, or an expert, if they were to decide whether fuel was traded under usual price conditions or not.

The data about prices were put in one graph, which enabled to predict the risk of tax evasion. Analytical processing of individual parts resulted in a proposal to modify data currently required by the tax authorities.

## **2 Results and Discussion**

The only real tool to detect tax fraud is inspection. The tax administrator verified whether the taxpayers fulfilled all their liabilities. It can be considered a success if the fraud is uncovered and the amount owed due to fraud is additionally paid (Gemmell and Ratto, 2012). However, it is necessary to take into account another variable, which is time. The later the fraud is detected, the smaller amount is collected and vice versa. To make this activity most effective, it is necessary to define the risk factors that might suggest the risk of fraud.

As it was already mentioned, a system of prices charged to customers can be used for these purposes. The prices are illustrated in Figure 2. There is a gap between the minimum price  $P_E$  and the lower of the two modified prices. Depending on price development it is either the comparative price  $P_B$  or the modified price  $P_D$ . This gap can be described as an area of unusual prices. It is crucial for identification of prices potentially affected by tax fraud. From the data for the year 2012 it can be concluded that at any moment there was at least one price  $P_i$  located in the area of unusual prices (Figure 3). Similar results were obtained by David and Semerád (2014) when they measured the magnitude of the grey economy on the fuel market.

This identified area of unusual prices should be the first warning sign for the tax administrator and inspections of entities selling fuel at prices located in the area of unusual prices should be carried

out. The taxpayer should prove how he came into possession of fuel and that he did his best to avoid becoming part of the scam.

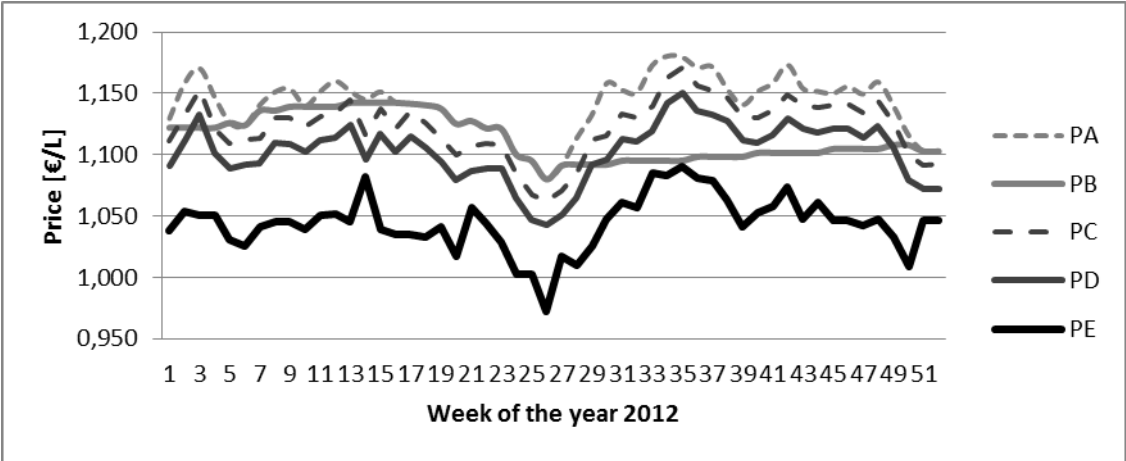


Figure 2. Prices of diesel  
 Source: Čepro, 2012; David and Semerád, 2014; GFD, 2012; Semerád, 2013; Semerád and David, 2014.

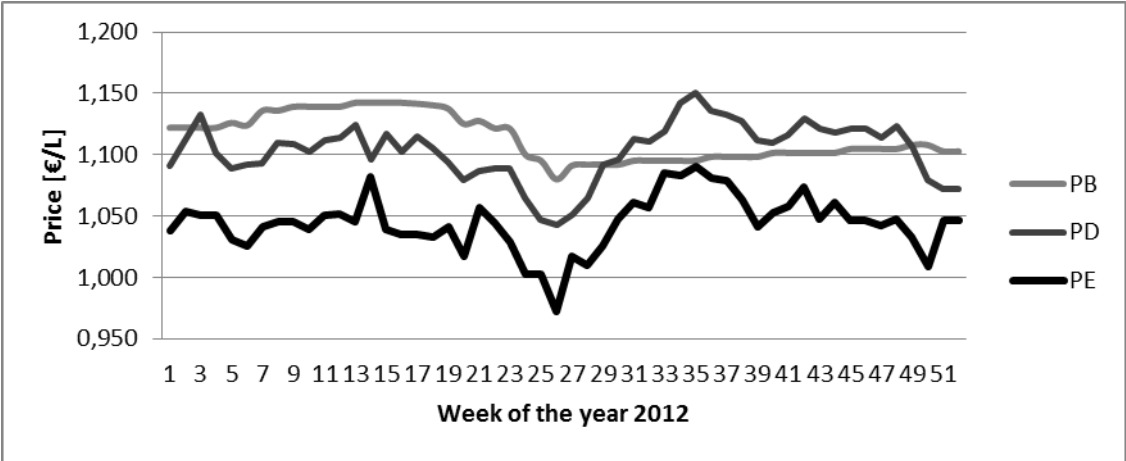


Figure 3. Identified areas of unusual prices  
 Source: Čepro, 2012; David and Semerád, 2014; GFD, 2012; Semerád, 2013; Semerád and David, 2014.

When evaluating the proposed methodology and sources from which the methodology is derived, it is important to point out the following shortcomings which cannot be influenced by the author. Business entities meeting special record-keeping obligations may give false or misleading information about fuel sales and purchases. This assumption is confirmed by the fact that the information from the General Financial Directorate contained significant differences in the databases of minimum prices (0.04 – 0.37 EUR/liter).

The price  $P_A$  is derived from the basic purchase prices of the company Čepro. It is possible to speculate only theoretically about how big discount, compared with  $P_A$ , Čepro offers to its customers. This information is a trade secret and cannot be officially verified. Yet the General Financial Directorate should not have any problem finding these prices as the sole shareholder of that company is the Ministry of Finance of the Czech Republic. For this reason, it can be supposed that Čepro will not hinder cooperation in the sharing of necessary data for the benefit of the tax authorities. If their lowest selling prices were obtained, then by using the same principle they could be incorporated into the proposed methodology. This measure would also have an impact on the price  $P_B$ , which would also decrease in some weeks. Figure 2 shows some trends in business behavior. If the price  $P_A$  falls (Week 17 – Week 28), then  $P_A = P_B$ . The profitability of placing goods in the tax warehouse decreases or is even unprofitable. If the price  $P_A$  goes up, placing goods in the tax warehouse is profitable (Week 28 -Week 51).

The average price  $P_C$  contains distortion, which is caused by the special record-keeping obligation. The tax administrator does not require the distributors to provide the number of a warehouse receipt. For this reason, it is impossible to work out how many times the fuel was sold in the supply chain. Provided the tax-dodged fuel is purposely sold several times with a margin of EUR 0.001,  $P_C$  may be significantly affected. Also the price  $P_D$  reflecting the subjective opinions of distributors decreases. If the tax authorities required the number of the warehouse receipt, it would be possible to filter out other sales and the price would be used for the calculation of the average price only once.

Another drawback is that the General Financial Directorate does not clearly state whether the price reported under the special record-keeping obligation should include transportation costs or not. This gives rise to different interpretations, which may have an impact on the use of methodology. This ambiguity should be removed by clear statement that the prices reported are without transportation costs, because transportation costs may vary.

## **Conclusions**

A major drawback is that the data is obtained ex post, i.e. after the trade was made. The data reported under the special record-keeping obligation can be obtained with a delay of two calendar months (one month for processing and one month for obtaining data on prices from the tax authorities upon request). Businesses trade in real time and do not have all the information as the author of the paper does. There is still a risk of permanent legal uncertainty about whether the trade was made at usual prices. The basic requirement is to provide sufficient information so that business

entities could make a right decision about purchase. Usual prices must be defined as soon as possible otherwise the methodology could not be used in tax and judicial processes. The recommendations formulated below define the steps necessary for putting the proposed methodology of tax administration in practice. The result will be a higher degree of legal certainty and presumably a reduction in tax fraud.

(i) The act must state that entities with significant market power have to update tax administrators on their prices. An important criterion is determination of these entities. It could be based on the same principle as choosing a member of ČAPPO (2014). The main condition is permanent conducting of the following operations: a) crude oil processing in Czech refineries and production of petroleum products, b) import, transport and storage of petroleum and petroleum products, c) domestic wholesale of petroleum and petroleum products, d) operation of petrol station network. For example, the requirement for obligation is imposed on operators with significant market position (in accordance with Directive 2002/22/EC) in telecommunications. According to this Directive, some duties can be levied on all subjects and some only on those with significant market power.

(ii) Operators of refineries and tax warehouses can become legally obligated to provide information about a storage fee. From the information (i) a (ii) the lowest price  $P^*i$  will always be chosen for further calculations according to this methodology.

(iii) Similarly, the comparative price  $P_B$  will be determined. It will not be based only on prices provided by Čepro, it will also take into account other entities with a significant market position.

(iv) According to this methodology,  $P^*$  or  $P_B$  will be used in selected periods and the boundaries between usual and unusual prices will be defined. This price must be available to all operators on the portal of public administration and remote access has to be enabled. Information about prices must be posted no later than the date of a taxable supply and in the event of changes it has to be updated online. Retroactivity that could be enforced against a taxpayer under the current law poses a threat to legal certainty and good faith of a taxpayer. Such behavior of tax administrators is unacceptable. However, if one entity bought fuel at clearly defined unusual prices, it would automatically be held liable for unpaid tax on this supply.

(v) If items i - iv are accepted, it is possible to discharge the currently applied special-record keeping obligation with respect to taxable supplies traded within the country for entities with insignificant market power. The obligation will be enforced by law only for trading outside the country. Besides the data provided, it will be necessary to give the number of the warehouse receipt.

The proposed methodology cannot be regarded as a state regulation as it is understood by e.g. Samuelson and Nordhaus (2010) a Zugarramurdi et al (1995). These authors state that governments may, for political and social reasons, consider a price too high or too low and set a maximum or minimum price or levy a tax on the goods. The result of this regulation is e.g. the emergence of shadow economy or rationing (“under-the-counter” sales). The proposed methodology only informs stakeholders about the usual prices and allows transferring tax liability to the recipient of a taxable supply. It does not obstruct trading at unusual prices (in terms of methodology) or impose any other restrictions.

The theoretical benefit of the proposed methodology can be seen in the field of expert activities. It expands the methods of valuation in areas where the current situation does not allow appreciation of movables as there is not enough background information for them. It is impossible to employ the commonly used methods – administrative prices, cost method, income method etc. The methodology proposes an alternative procedure for valuation, which is becoming more accurate and the result is closer to reality. Five different prices were identified which can be compared.

The methodology can be positively evaluated in terms of administrative demand and financial costs. The information provided by taxpayers is sufficient for tax administrators and they do not have to burden businesses with other work. To reduce administrative demands to a lower level, one of the recommendations is to use (in compliance with the law) information from a group of businesses with a significant market share. This information is easier to process, check and evaluate, which is also beneficial for tax administrators. This brings also financial savings for tax authorities and entities with a lower market share. It can be negatively evaluated in relation to entities with a significant market share. In this case the author assumes that these additional costs will be subsequently transferred to the recipient of taxable supplies in sales prices.

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