

# Alliance Importance and Risk Cases of Value Added Tax Threatening Continuity of European Budget

Olga Burianova, Jiri F. Urbanek

*University of Finance and Administration, Estonska 500,*

*10100 Prague 10, Czech Republic*

*E-mail: urjf@yahoo.com*

*E-mail: olgaburianova@email.cz*

## Abstract

One of the three major pillars of funding the European Union's budget is Value Added Tax. Within the European Community, under the terms of the legislation, trade in goods and services under the so-called reverse charge system operates. One of the reasons why this method of taxation has been applied is to avoid risks in the area of Value Added Tax collection. Some countries of the European Union have accepted this form of taxation and transferred them to risky commodities into the domestic Tax on Value Added Tax and its collection of Value Added Tax. However, also in this mode of taxation may lead to the avoidance of taxation and the tax fraud. The free movement of goods, services and taxpayers or taxpayers without Value Added Tax registration within the European Community may cause some difficulty in correctly selecting value added tax. The security of the tax collection to funding into the budget can be endangered. However, the correct implementation of the budgetary plans (prediction) should be in the interest of all, because the budget supports the important infrastructure areas of the countries concerned. And in this respect, is knowledge of social responsibility important. The aim of this article is to point out this danger in a simple example. The exquisite instrument, for the achievement of this paper's aim, is the application of special modelling and simulation methodology for crisis scenarios - method DYVELOP (Dynamic Vector Logistics of Processes).

*Keywords:* Value Added Tax, European reverse charge, Crisis scenarios, Dynamic Vector Logistics of Processes, Tax Fraud.

## Introduction

Financial logistic flows are not a static matter, but without further verification, we can say that these are dynamic flows that are highly related to other factors in this area, including information flows. Information flows are closely linked to national differences in customs and habits within the European Union. The combination into uniform or harmonizing legislation is not a simple matter. But from a European point of view, trade is certainly an important issue, not to mention the point of view of globalization. The European Union must be seen as a single entity, not as a single territorial unit. Value-added tax plays a crucial role in terms of EU funding. In the case of value added tax, its neutrality

should be ensured in every economic activity. The European Union as a whole diversified the risk of tax fraud on this tax by introducing a reverse charge.

## Model and Analysis

The basis for determining the methodology to meet the objectives set out in this article is to link qualitative and quantitative research. For the purposes of this paper, the method DYVELOP © /dynamic vector logistics will be used, in a static image and live in PowerPoint with structured real time, environments and entities. This way, it will be possible to clearly see selected financial flows from the tax agenda, which contribute mainly to complex financing in the Czech Republic, in individual process logistic systems with the capture of sources and financing objectives. The advantage of this method is the fact that it is possible to express not only the ties between individual entities in different environments, but also their relationships. This article describes the basics of the priority financial flows in the Czech Republic. The DYVELOP © method can process a "case" entity that will be used in further scientific research when financial flows and their relationships will be analyzed and critical or crisis areas that negatively affect financial flows will be identified. „The DYVELOP method uses the following special terminology for the purposes of this article: The Entity is all that exists or what can only be imagined in human consciousness on any scene. Dominance is the dominant aspect of the scene. Domains = real time - t and environment - ENV are dominant entities that are absolutely independent of the controlling of human consciousness. Environment (ENV) is the first entity species that has the role of the main domain of any scene that defines the implementation framework (field) of the abstract superclass [UML] without a defined controlling actor. The processor (PrS), the second entity species, fulfilling the role of transformation of inputs into emerging new things (products), is the object in the role of the structural thing, the regulation of which is performed by an external controlling actor from a defined environment. We model five types of PrS. The case (the CASE) is the third entity species that performs the role of a complex situational arrangement of procedural entities, performing under certain circumstances and conditions. Urbanek (2013). Value added tax is one of the three pillars of financing the European budget. Table 1 shows the sum of the total value added tax allocated for the years 2005 to 2017 in Czech Republic. Financial Administrative (2019). This sum of the total value added tax is divided in sectors according to section CZ-NACE. Czech Statistical Office (2019).

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Table 1: Total Value Added Tax Suma for the Years 2005-2017 (Since EU Accession) (in CZK Thousand and Number of Tax Returns)

| Sectors according to CZ-NACE   | Granted Tax<br>(Value Added<br>Tax) (in<br>thousand CZK) | Number of tax<br>returns (in pcs) |
|--|--|-----------------------------------|
| Section 0 - Not Specified  | 269 309 868  | 1 506 772                         |
| Section A - Agriculture, Forestry and Fisheries                                    | -28 874 770  | 1 730 430                         |
| Section B - Mining and Quarrying   | 39 224 864   | 47 549                            |
| Section C - Manufacturing  | 246 938 128  | 5 309 129                         |
| Section D - Electricity, Gas, Heat and Air Conditioning                            | 238 492 490  | 228 765                           |
| Section E - Water Supply; Activities Related to Waste Water, Waste and Remediation | 22 243 989   | 265 090                           |
| Section F - Construction   | 75 509 196   | 6 030 657                         |
| Section G - Wholesale and Retail; Repair and Maintenance of Motor Vehicles         | 1 829 604<br>702   | 12 153 367                        |
| Sector H - Transport and Storage   | 132 373 437  | 1 988 004                         |
| Section I - Accommodation, Catering and Hospitality                                | 56 685 459   | 1 564 914                         |
| Section J - Information and Communication Activities                               | 274 640 841  | 1 330 132                         |
| Section K - Finance and Insurance, (65,66)   | 44 428 877   | 199 271                           |
| Section L - Real Estate Activities (68)  | 149 027 757  | 1 918 713                         |

|  |             |           |
|--|-------------|-----------|
| Section M - Professional, Scientific and Technical Activities<br>(69,70,71,72,73,74,75)  | 278 851 207 | 3 999 688 |
| Section N - Administrative and Support Activities<br>(77,78,79,80,81,82)   | 102 632 487 | 1 024 609 |
| Section O - Public Administration and Defense; Compulsory Social Security (84)   | 27 712 363  | 194 387   |
| Section P - Education (85)   | 11 739 186  | 217 064   |
| Section Q - Health and Welfare (86,87,88)  | 20 644 066  | 186 931   |
| Section R - Cultural, Entertainment and Leisure Activities   | 20 482 273  | 511 302   |
| Section S - Other Activities (94,95,96)  | 45 888 817  | 1 175 785 |
| Section T - Household Activities as Employers; Activities of Households Producing Unidentified Products and Services for their Own Use (97,98) | 51 783      | 3 980     |
| Section U - Activities of Extraterritorial Organizations and Bodies (99)   | 80 553      | 1 863     |

The table 1 below shows that the Section G - Wholesale and Retail; Repair and Maintenance of Motor Vehicles plays a significant role in tax revenue. The most famous is the Pearson coefficient  $r$ , its theoretical value is  $p$ , the correlation coefficient rises between the numbers -1 to 1 and indicates the direction of the dependence, if  $r = 0$  (or gets near zero), the variables are independent. Hendl and Remr, (2017). We can plot this situation graphically, for example using a correlation and regression analysis graph and the Pearson coefficient  $r$  (1), pairs of measured values  $(x_1 y_1)$ ,  $(x_2 y_2)$ , .....,  $(x_n y_n)$  for variables X and Y:

$$r = \frac{\sum_{i=1}^n (x_i - \bar{x}) (y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2 \sum_{i=1}^n (y_i - \bar{y})^2}} \quad (1)$$

Regression and correlation analysis of the number of tax returns, value added tax attributable to industry branch 2005 to 2017 for variables Y = number of tax returns and X = value added tax.

Sum of all the data on the number of tax returns and the granted tax for the years 2005-2017 according to individual branch industries, see Table 1 - value added tax for the years 2005-2017 (data from the accession to the European Union) and according to Fig. 1 of the correlation regression analysis, a correlation coefficient of 0.849739907 is reported. According to the graph of the correlation regression analysis it means that the branch G - wholesale and retail; repairs and maintenance of motor vehicles determines the direction of correlation and goes beyond the industry. This may be due to legal interventions, such as the introduction of electronic sales records and the application of the reverse charge mechanism, the application of value added tax on the intra-EU acquisition of goods (material) and the supply of goods (material) and services in intra-European Union transactions. From the points that are remote from the correlation regression axis, it is necessary to mention the section of construction, where is

also the role of domestic reverse charge. After further analysis, due to the distance from the correlation and regression analysis axis, the processing and agriculture sections were suitable.

T - test of the linear independence of variables verifies the validity of the  $H_0$  hypothesis against the alternative hypothesis  $H_1$ . The significance of the correlation coefficient is verified at a materiality level of 5% using Student's distribution. Quantum student's division  $t_{1-0,975}$  (Excel TINV function ( $\alpha$ ,  $n-2$ ) or statistical table T2 Quantities tp Student Distribution S ( $k$ ).

However,  $n$  = number of attempts, the hypothesis is rejected if:  $|t| > t_{1-\alpha/2}$ , the correlation coefficient is statistically insignificant if we do not reject the hypothesis  $H_0$ .

Y - number of tax returns in individual branches of industry (section CZ-NACE)

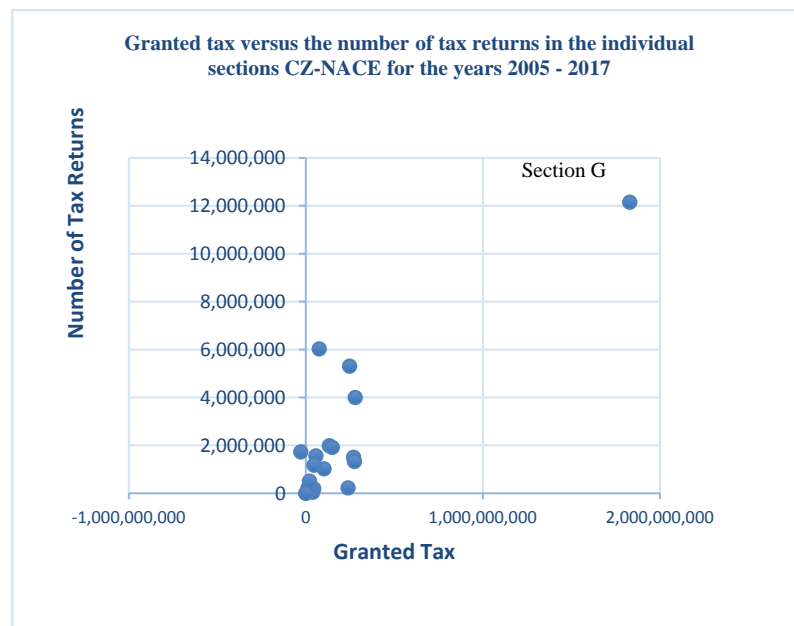
X - Value Added Tax granted in the various branches of industry

$H_0$ : The number of tax returns and value added tax granted are totally independent for all sectors over the years 2005 to 2017.

$H_1$ : The number of tax returns and value added tax granted are totally dependent on all sectors for the years 2005 to 2017.

Quantile student divisions  $t_{1-0,975}$  (function Excel ==T.INV.2T(0,05;21)= 2,079613845.

Fig. 1. Regressive correlation analysis of the tax and the number of tax returns in individual branches (CZ - NACE sections) for 2005 to 2017.



By the T - test, the  $H_0$  hypothesis was rejected and the  $H_1$  hypothesis was confirmed: the number of tax returns and value added tax is broadly linear for all sectors for the years 2005-2017. In Pearson's correlation, for the range of 0.1-0.3 it's weak correlation, 0.4-0.6 medium correlation, 0.7-0.8 strong correlation, above 0.9 very strong correlation. Correlation of tax and the number of value added tax

returns for all sectors for the years 2005-2017 is assessed as strong. Thus, from the logic of the matter, it should be inferred, not only from the point of view of value added tax. The controlling of individual sections of the branch industry, respectively "economic activities" should be identified according to the Value Added Tax Act, both from the past and forecasted outlooks.

The Fig. 1. and the Table 1. show that Section G - Wholesale and Retail; Repair and Maintenance of Motor Vehicles is very important for the economy of the Czech Republic, as it has a large share in the revenues of the Czech state budget. And this despite the fact that this section includes already mentioned reverse charge as part of value added tax. The principle of intra-community trade within the European Union lies in the trade in goods and services between registered value added tax payers in the course of their economic activity, where the seller of the goods or service does not pay value added tax, but records only the basis of the tax in his tax return and the mandatory statement – report, and the buyer or the person who accepts the service is liable for the tax and also states it in his tax return and at the same time he is entitled to deduction of tax in case that he fulfils the conditions stipulated by the law. This means, that in the basic reverse principle when conditions are fulfilled, the tax is not paid to the state budget, but tax frauds are also eliminated. However, the question is whether all transactions are actually carried out. It should be recalled that value added tax is linked to income tax. Within the European Union, information flows are compiled, comparing data from mandatory statements - summary reports from the supplier of goods and service providers, and data from the tax return on the recipient of services and goods. The means of control are information flows obtained through the Value Added Tax Information Exchange System, which serves to the electronic exchange of information in the area of value added tax, namely the fulfilment of the obligations of value added tax payers between European Union member states. The trade and services sector is very large and diverse in the European Union when third-country entities (outside the EU) enter the trade, but there is no room for the investigation in this article. Reverse charge diversifies risks, but still in the presence of tax frauds and "carousel frauds". OECD (2019)

The European Union's Commission Staff Working Document Impact Assessment, Generalized reverse charge mechanism, dates 21.12.2016 states:


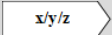
The common system of value added tax (VAT) is a major and growing source of revenue in the European Union (EU), raising almost EUR 1 trillion in 2014, which corresponds to 7% of EU GDP or 17.5 % of national tax revenues, including social contributions. One of the EU's own resources is also based on VAT (13% of EU budget in 2014). As a broad-based consumption tax, it is considered as one of the most growth-friendly forms of taxation. However, huge sums of VAT are being lost each year due to tax fraud and evasion. Research shows that the overall difference between the expected VAT revenue and the amount actually collected (the so-called 'VAT Gap') amounted to nearly EUR 160 billion in the EU in 2014. About EUR 50 billion out of this would be due to carousel fraud. This illegally deprives Member States' public budgets of money but also creates unfair competition between compliant and non-compliant businesses. EUR-Lex (2019).

## **Analysis and Discussion**

But we will not even deal with these cases in this article. We take the simple and real case that holds the Czech proverb "it does not have to flow; it is enough if it drips". In the framework of the VIES benchmarking controls, which are undoubtedly numerous due to the number of taxable transactions carried out, a certain financial limit is probable that is determined and investigated under the imbalance. But let's take a case where monthly data on the imbalance between the supplier and the purchaser of the goods or the provider and the recipient of the services gets below the specified threshold for further investigation.

As a case, we will choose three countries from the European Union. The entrepreneur will come from the EU1 (for our case listed by the EU Member State, but it can also be a case from 3rd countries - outside the EU) and decides to register with the intention of economic activity in the EU2. In the EU2, he establishes a business corporation, signs up as a VAT payer, and receives a tax identification number (VAT). In this Member State, it will also find its seat - a virtual seat, as it is physically, existentially and entrepreneurially (family = background) moving in the EU3. In the EU3, he uses all that a reverse charge system can offer to the taxpayer. All of his purchases are tax free, as he submits a tax identification number issued in EU2. That's the beginning of the information flow time. In an EU2 country where an entrepreneur is registered as a taxpayer of value added tax, he has to fulfill the corresponding obligations, at least in the submission of tax claims. As an expert in his duties, he can serve negative tax returns there (without all data). So the tax administrator will not have any doubts, because other information is unavailable. The game of time will be more interesting if it is a VAT payer who submits his tax returns quarterly rather than monthly. His possible business activities, given the physical distance, cannot be fully monitored from the EU2, the EU2 tax administrator does not have local knowledge and the payer does not have a corporate social responsibility. The flow of information on possible purchases of goods and services in an EU3 country comes to the country that issued VAT, i.e. EU2 with a time lag and in relation to the amount of paid entrepreneurs in the country EU3. The information may not be verified due to the amount of tax fraud in a unit of time. In the case, that information on the transactions completed without tax from the service providers and the suppliers of goods listed in the summary report and compiled in the VIES system comes to the EU2 tax administrator, apparently by the cumulating of time units, it will ask whether the payer actually carries out his activities and where output tax is paid. The EU2 Tax Administrator will issue a call to remove doubts about the tax period under consideration.

Table 2. Entities table

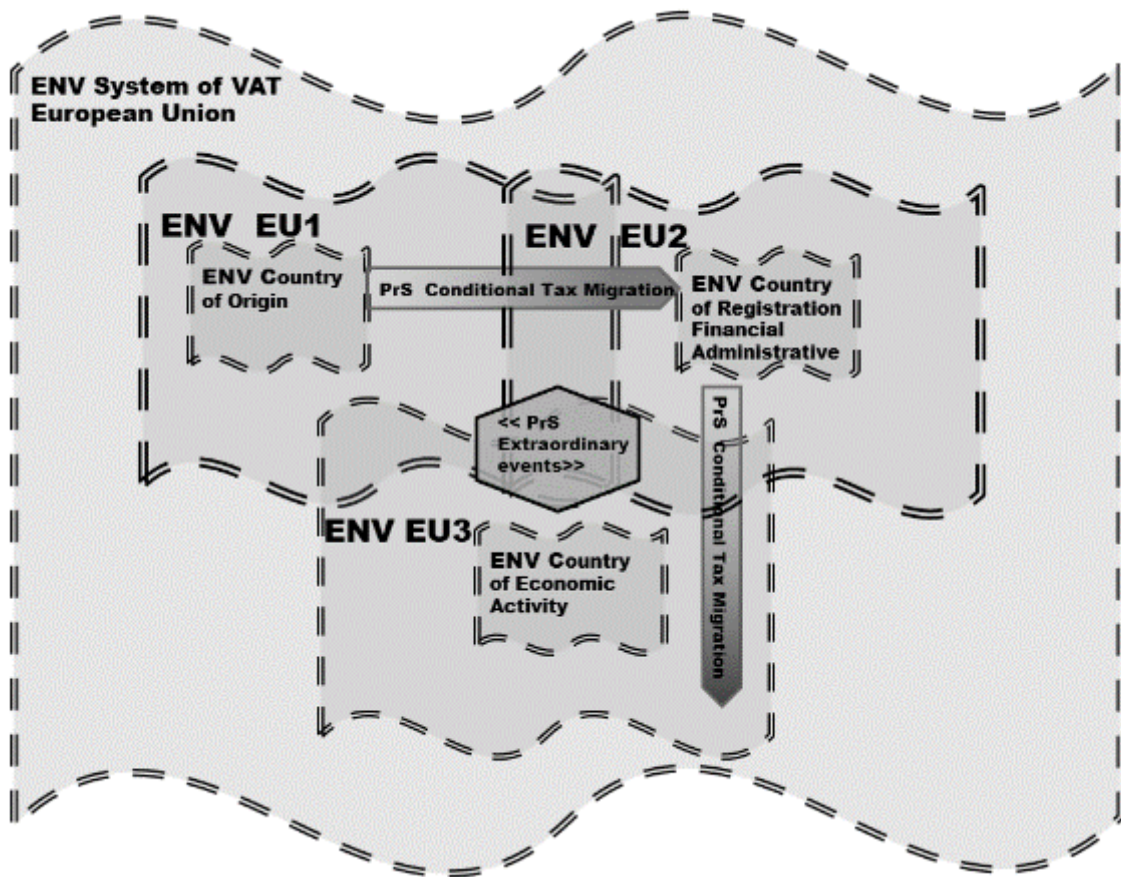
| Classifier<br>Name of the entity  | Semantics<br>Entities role                     | Remarks and Decorations  |
|---|--|--|
|    |  | Characteristics, properties, symptoms, system features, quantity, quality, measurement units, specifications, ornaments ...  |
| ENV System of VAT European Union  | European Union                                 | 28 Member State of the European Union  |
| ENV EU 1  | Member State of the European Union 1           | for our purposes marked with 1, for our case listed by the EU Member State, but it can also be a case from 3rd countries (outside the EU)  |
| ENV Country of Origin   | Environment in the Member State 1 of departure | the original country where the background was  |
| ENV EU 2  | Member State of the European Union 2           | country, there is the fictitious seat of a business corporation  |
| ENV Country of Registration   | Environment in the Member State 2              | Financial Administrative there is the Value Added Tax registered and the establishment of a business corporation   |
| ENV EU 3  | Member State of the European Union 3           | country backgrounds  |
| ENV Country of Economic Activity  | Environment in the Member State 3              | the environment in which it is actually living and the economic activity is carried out, in this country are not registered for any tax  |
|  | Symbol of the Logistics Process System         | from source to target, acting on a defined ENV; the symbol has the shape of a pentagon with sharp corners, the controlling actor is the interface line dividing the logistic flow into two qualitatively different doses from the source to the target, the doses may have the nature of the flow of material, information, money, |
| PrS Conditional Tax Migration   | Movement of business activities across the EU  | Conditional Tax Migration  |

The challenge should be addressed with clear specific doubts, so only with the information available to the tax administrator. Here, we need to point out the intersection where the administrator cannot work with the information at his disposal because it is not possible to define it negatively: for example, "prove that you have not acted", i.e. the tax administrator is unconstrained in this respect. However, it has



information about the purchases of goods without tax, or the receipt of the services, they list in a call to remove their doubts and sends them electronically to the virtual office. The call is sent to our payer's mailbox, which will not be accepted, and is automatically delivered on the 10th day after the expiration of the deadline. The deadline for removing these doubts is set at 15 days from the date of delivery of the call. Of course, the payer does not respond to that call. But in the next quarter, he will return the tax return, which is filled in as negative. And the whole cycle is repeated over and over again. At the same time, the tax administrator is limited to information where the supplier of goods and the provider of goods are known. Within the legislative environment, for the time being, the tax administrator is unable to prevent the taxpayer from doing his business, for example by canceling registration for non-compliance, because the payer fulfills his obligation by filing negative tax returns. The EU2 tax administrator is difficult to reach and communicate with and turns to the EU3 tax administrator, but it also depends on how long it is, depending on EU information<sup>2</sup>.

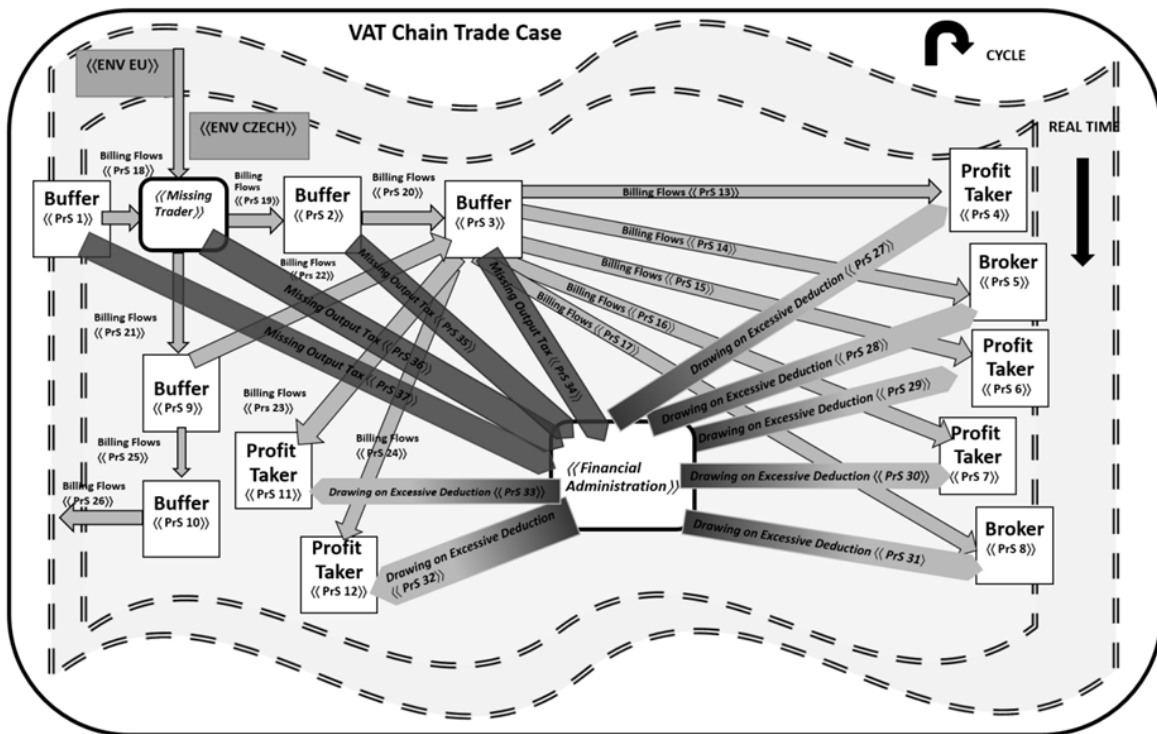
Fig.2. Conditional Tax Migration



The whole process is dependent on the type, amount and speed of the flow of information over time. Payers can also not cancel the registration because the information that they are purchasing goods or accepting services in the European Union is not appropriate for canceling the VAT registration. Thus, the EU2 does not resolve the case until it can provide tax relief aids or assume that the taxpayer does not carry out any economic activity and, on that basis, assess the tax on purchased goods and services and refuse to deduct the tax. The tax is assessed, and if it is not paid, it is difficult to enforce it and the possibility is it will never be collected.

Each actor in the fraudulent chain has a defined role in time and environment. An example of a case of fraud within the presented coat of arms (Fig. 3) is part of a possible larger system operating in several EU member states. From the above, it can be assessed that the fraudulent system of the VAT chain has the ability to adapt in a timely manner and camouflage. In order for fraud to be resolved, it must first occur and draw attention to itself by mistake in your system.

Fig.3. Coat of arms of entities of the fraudulent VAT chain

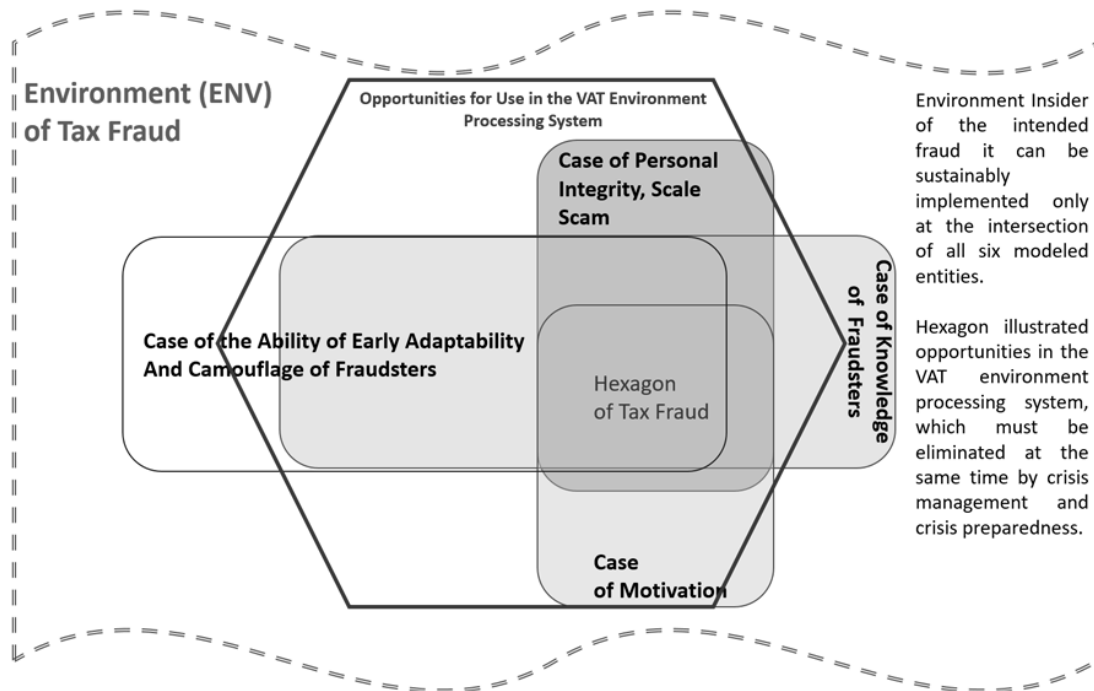


The fraud triangle according to Dr. Donald R. Cressey (1950) and Douglas M. C. Allan's 'fraud diamond' (2018) can be supplemented by a fifth component in the case of the value added tax and chain fraud environment, namely the 'fraudulent timely adaptability and camouflage' case. The environment of

the deception intended by the insider can be "sustainably realized" only at the intersection of all 6 modeled entities. Hexagon illustrates the opportunities in the process system of the VAT environment, which, however, must be eliminated at the same time by crisis management and crisis preparedness.

For the management of financial administration, it is possible to deduce from the mentioned hexagon the risks that would entail the system of chain fraud.

Fig.4. Hexagon of Tax Fraud



## Conclusions

This study case is presented unconventionally but its foundations are based on real tax fraud of an individual who establishes a business corporation, registers as a taxpayer of value added tax and moves to the territory of the European Union. By linking other value-added taxpayers to the payer described above, chain and carousel fraud can occur. Value added tax should maintain its neutrality, economic activity should be encouraged. The European Union should be seen from the point of view of taxation as a whole. However, it is a question of whether it is possible to fight tax fraud in such a large environment in real time with the flow of information. The author of this paper would also like to mention another path for which there is not space in this work, namely social responsibility as a safe and sustainable development community of people in today's globalized world.

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