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New VAT Rules for E-commerce: What Will They Bring to Public Budgets?

*Kristýna Kebrtová – Hana Zidková**

Abstract:

The article focuses on the new rules for electronic commerce that came into force on 1 July 2021 in all EU Member States. The main goal is to explain these new rules of taxation of consignments of goods from abroad (both from the European Union and third countries) to non-taxable persons and subsequently to calculate the impact of these new rules on the tax revenues of public budgets of the Czech Republic. The assumption set in advance is that the changes in tax legislation will result in an increase in the Czech public budget revenues due to the boosted revenues from value-added tax collected on foreign shipments. Year-on-year, tax revenues from online purchases will undoubtedly increase also due to the growing popularity of online shopping, currently sustained by the ongoing pandemic situation of covid-19. The calculations of the additional value-added tax revenue are based mainly on the data sourced from the Czech Statistical Office and a study carried out for the European Commission. The additional value-added tax revenue is calculated using the three model situations that assess impacts on the tax revenue of public budgets in the Czech Republic. For 2019, these impacts were estimated at between CZK 3.1 and CZK 6.1 billion.

Keywords: Value-Added Tax; Distance Sale of Goods; Additional VAT Revenue; One Stop Shop.

JEL classification: H21; H26; K34.

1 Introduction

The subject of new rules for the taxation of e-commerce with value-added tax (VAT) is currently highly topical, as these rules have only recently come into force, namely on 1 July 2021. The emergence of these new rules was a consequence of the rapid development of e-commerce, which was also related to the development of information technology and the internet in particular.

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While the system of levying VAT on cross-border business-to-business supplies operates on the principle of taxation in the country of consumption (Terra and Kajus, 2015), taxation on supplies to other Member States to non-taxable persons has so far been largely based on the principle of taxation in the country of origin (Cnossen, 2010). However, in terms of tax collection by individual states, it is desirable that taxation prevails in the country where the goods or services are consumed (Keen and Smith, 2007). Individual Member States set VAT rates as efficiently as possible in their tax policies (Kowal and Przekota, 2021) and want to avoid distortion of competition (Dietl *et al.*, 2011).

The principal purpose of the amended legislation is to respond to the distortion of competition between suppliers from the European Union and third countries and also to reduce the administrative burden on suppliers (Lamensch, 2015).

The main aim of this contribution is to clarify the new rules for e-commerce that came into force on 1 July 2021 in all EU Member States. All these rules are based on the EU Directives and Regulations, *i.e.* on primary legislative documents.

Another goal is to calculate the impact of the new rules for the taxation of e-shops in the Czech Republic. The article particularly focuses on the impact in terms of increased tax revenues of public budgets in the Czech Republic. The assumption is that these revenues should increase due to the abolition of the tax exemption for consignments from third countries, as well as due to the introduction of new, stricter rules for mail order trade carried out within the European Union. The impact in terms of changes in tax revenue for the public budgets in the Czech Republic has not yet been the subject of any study. Although some estimates were made by the European Commission or can be found in the explanatory memorandum to the amendment to the Czech Republic's Act on VAT, no methodology or detailed calculations are available for these data.

2 The New VAT Rules for E-commerce

The EU Directives and Regulations which introduce new rules for e-commerce set out these rules in such a way that the supplies of goods to non-taxable persons in another EU Member State will be taxed more frequently in the country of final consumption, *i.e.* in the country where the purchaser is a resident. To fulfil this intention, the rules on the dispatch of goods – from 1 July 2021 known as “distance sale of goods” – have been amended (Merkx, 2020).

The place of supply for distance sale of goods is the Member State in which the transport of the goods is completed, hence the principle of taxation in the country of consumption (Šíroký, 2018). However, in some cases, the principle of taxation in the country of origin may be applied, thereby reducing the administrative burden

for small businesses that make sales only infrequently (Kubátová, 2010). Taxation in the supplier's country of residence (country of origin) can only be used if the total value of distance sales of goods and provision of telecommunications, broadcasting and electronically supplied services to non-taxable persons in the other EU Member States does not exceed EUR 10,000 per year (Directorate-General for Taxation and Customs Union, 2020). It is important to note that this is a single threshold that the supplier must observe within the total for all its supplies to non-taxable persons in the other EU Member States. The legislation in force until the end of June 2021 allowed the threshold to be tracked to each EU Member State separately, while the EU Member States had set these thresholds differently (Abramova *et al.*, 2021).

As already mentioned in the introductory part, the purpose of the new rules is to simplify the principles of taxation and at the same time respond to the reduced competitiveness of European suppliers vis-à-vis suppliers from non-EU countries (Schenk *et al.*, 2015). As of 1 July 2021, all consignments delivered from third countries to the European Union will be taxed, not just those above the threshold set by national legislation (EUR 10 or 22 per parcel). Taxation will always take place in the country of final consumption, *i.e.* in the EU Member State where the buyer is established. For these supplies of goods to non-taxable persons, with a place of supply within the European Union, the primary legislative documents introduce the concept of “distance sale of imported goods”. As with intra-EU distance sale of goods, distance sale of imported goods is taxed in the country of consumption, so the place of supply is the Member State where the transport is completed.

The introduction of these new rules, therefore, implies that consignments are more frequently taxed in the country of final consumption of the goods, *i.e.* not in the country of origin of the goods, or the country of establishment of the supplier. This necessitates the introduction of schemes that will simplify the payment of VAT by suppliers. In part, these schemes were already in place before 1 July 2021 for the provision of telecommunications, broadcasting, and electronically supplied services (Sinyor, 2002). From 1 July 2021, the scope of these schemes has been extended also to electronic trading of goods – distance sales of (imported) goods. These special schemes are based on the principle of a single administrative place called “One Stop Shop” (until 1 July known as “Mini One Stop Shop”) and are intended to reduce the administrative burden associated with VAT levy, *i.e.* especially with VAT registration. These schemes are voluntary, so the supplier can still choose to register for VAT in the country of establishment of the buyer and pay the tax in the normal way by submitting a tax return per local legislation (Lamensch, 2012).

The special schemes described above include the Union scheme, the non-Union Scheme, the special distance sale scheme for goods imported from third territories or third countries (the “import scheme”) and finally a special scheme for the

declaration and payment of VAT on imports (Messina, 2021). Tab. 1 illustrates their use in individual situations.

Tab. 1 Use of special schemes

	Supplier/provider (taxable person)	
	Established outside the European Union	Established within the European Union
Provision of services to non-taxable persons	Non-Union scheme	Union scheme
Distance sale of goods	Union scheme	Union scheme
Distance sale of imported goods valued up to EUR 150	Import scheme (with the obligation to appoint a mediator); special scheme for the declaration and payment of VAT on imports	Import scheme (without the obligation to appoint a mediator); special scheme for the declaration and payment of VAT on imports

Source: Directorate-General for Taxation and Customs Union, 2020 + authorial computation.

At the same time, the new rules for e-commerce also explicitly address the issue of purchases through an electronic interface, represented by electronic marketplaces, portals, *etc.* As such electronic interfaces may be considered *e.g.* the portals of eBay or AliExpress. These are in fact sales intermediaries that allow for better and more efficient communication between the supplier and the buyer of the goods.

The new legislation stipulates that if a taxable person operating an electronic interface facilitates the distance sale of imported goods with a value of less than EUR 150, then, for VAT purposes, that subject has received the goods and supplied the goods itself. This procedure shall also apply where the electronic interface facilitates the distance sale of goods within the Community if the supplier is a person not established within the European Union. The Directorate-General for Taxation and Customs Union (2020) refers to this operator of an electronic interface, who is involved in the collection of VAT on these transactions, as the “deemed supplier”.

Where the operator of the electronic interface facilitates the distance sale of imported goods of a value not exceeding EUR 150, the delivery of goods from the original supplier to the electronic interface operator shall be deemed to be a delivery of goods without transport, and the subsequent delivery of the goods by the electronic interface to a purchaser from the European Union shall be deemed a distance sale of the imported goods. The same procedure applies to distance sales of goods within the Community if the original supplier is a person not established within the European Union (Directorate-General for Taxation and Customs Union,

2020). This provision, therefore, introduces the fiction of two supplies – although the operator of the electronic interface only facilitates the communication between the supplier and the purchaser, it is the operator of the electronic interface who is liable for the collection of VAT (Lamensch, 2018).

3 Methodology and Data

A major problem posed by the rules in force until the end of June 2021 was the loss of revenue resulting from uncollected value-added tax. This applies in particular to the situation where public budgets have been reduced by lost VAT on imports of goods whose value does not exceed EUR 10/22 (European Commission, 2016). Member States are also losing out on VAT revenue they would have collected if the principle of taxation in the country of consumption had been applied without exemption, *i.e.* without setting registration thresholds for the dispatch of goods (now called the distance sale). Thus, an important impact of the introduction of the new rules for e-commerce should be an increase in public budget revenues due to the additional VAT income resulting from the above-mentioned newly taxed cases.

For distance sale of imported goods, the impact on Member States' public budgets will clearly be positive. For intra-EU distance sales of goods, the resulting impact on each Member State's tax revenue will depend on whether the goods are distance supplied from that Member State to consumers in the other Member States or, conversely, whether they are supplied from the other Member States to that Member State. Provided the given state is more likely to be a supplier of goods at a distance that were previously taxed by the supplier in that state (the country of origin), the tax revenue of that country will be reduced when the new rules apply because the goods will now be taxed in the states where the customers are residents. If the country, or rather its citizens, were more of a purchaser of goods at distance, its tax revenue will increase under the new VAT regime since the goods supplied to that state will also be taxed there. Within the further analysis of revenues related to the new VAT rules for e-shops, we will only consider the impact of taxation on shipments flowing to the Czech Republic. Therefore, we will not deduct the amount of VAT paid according to the original rules in the Czech Republic by traders supplying their goods to the other Member States since in these Member States they did not exceed the turnover of the registration for shipment of goods.

The European Commission has paid particularly close attention to the calculation of the reduction in administrative costs associated with compliance with VAT legislation, while at the same time describing in great detail the problems related to non-compliance. On the other hand, the issue of the increase in tax revenue as a result of the introduction of the new VAT rules for e-commerce in goods is not much discussed. At the end of the Impact Assessment, the European Commission

(2016) merely states that in order to properly assess the impact of the introduction of these new rules, it is also necessary to calculate additional VAT revenue. Therefore, the European Commission has carried out a further analysis based on the outputs of a study prepared by Deloitte and Ipsos (Directorate-General for Taxation and Customs Union, 2016). The result of this analysis consists of a mere table showing the net tax revenue that the originally discussed variants of e-commerce taxation would generate, but the methodology for calculating this revenue is not provided.

Therefore, we set to perform calculations concerning the additional VAT revenue that the newly introduced rules for e-commerce in goods should bring to the public budgets of the Czech Republic. As the baseline for calculation of the additional VAT revenue flowing to the public budgets of the Czech Republic, adopted were data from a consumer survey conducted by Deloitte and Ipsos (Directorate-General for Taxation and Customs Union, 2016) for the European Commission. This source was also used by the European Commission (2016) in its own assessment of the impact of the new e-commerce rules within the Impact Assessment document. This study dates back to 2015 and since then the values of e-commerce within the European Union have not been surveyed, neither privately (on a corporate level) nor publically (on the level of the European Commission).

In addition, data from the system of National Accounts recorded by the Czech Statistical Office (2021) were utilised to calculate the impact of the new rules on public budgets. The most important piece of information obtained from there represents data on the household final consumption expenditure. These total household expenditures account for expenditure in national terms, *i.e.* expenditures by the Czech residents both at home and abroad. As the new e-commerce rules mainly concern cross-border transactions, it was necessary to find out what percentage of total online transactions are made cross-border (as cross-border is considered purchase transactions from another EU Member State or a country outside the EU).

Furthermore, the Czech Statistical Office (2019) annually conducts a questionnaire survey called “Use of information and communication technologies in households and among individuals”, the outputs of which have also been applied in the calculation of the additional VAT revenue – this information includes *e.g.* the share of people shopping online in the Czech Republic, or the origin of sellers from whom people bought goods online.

The additional VAT revenue is calculated for 2015 and 2019. For the calculations of additional VAT revenue for 2015 are used the shares of online purchases found in the consumer survey by Deloitte and Ipsos. These data are also used to calculate

the additional VAT revenue in 2019, indexed for inflation and are also adjusted for the growing share of online shoppers.

It is necessary to note that data on how much of the total number of shipments delivered to the Czech Republic was not taxed in the Czech Republic as either tax exempted or subject to taxation in another EU country cannot be ascertained. Therefore, the additional VAT revenue in the Czech Republic was calculated in three different model situations, each of which assumes different original taxation, *i.e.* the taxation of consignments under the rules valid until the end of June 2021.

- 1st model situation – originally no consignment of goods was taxed,
- 2nd model situation – only 30% of consignments (or the value of expenditure, respectively) were subject to taxation,
- 3rd model situation – originally 50% of the value of expenditure on the purchase of goods was taxed.

These thresholds were chosen based on our own discretion, as neither actual nor reliably estimated values of the tax-free consignments could be ascertained. The aim is to show three variants of the impact on the public budgets of the Czech Republic using sufficiently different assumptions on the share of taxed consignments.

4 Results

4.1 Additional VAT revenue in 2015

All the values related to household expenditures associated with e-commerce and used in the calculations of additional VAT revenue for 2015 are shown in Tab. 2.

Tab. 2 Data concerning the Czech Republic that were necessary for the calculation of the additional VAT revenue for 2015

	Value
Total expenditure on online purchases (in CZK)	166,480,866,000
Expenditure on cross-border online purchases (in CZK)	22,290,211,000
Expenditure on cross-border online purchases of goods (in CZK)	11,431,577,000
Share of expenditure on online purchases in total final consumption expenditure of households	7.74%
Share of expenditure on cross-border online purchases in total expenditure on online purchases	13.39%

Source: Czech Statistical Office, 2021; Directorate-General for Taxation and Customs Union, 2016 + authorial computation.

Unrealised VAT revenue on the shipments flowing to the Czech Republic was calculated on the value of expenditure on cross-border online purchases of goods. This value is based on information on the value of online purchases in the Czech Republic of EUR 6.102 billion (Directorate-General for Taxation and Customs Union, 2016). It is also based on the value of total cross-border purchases in the Czech Republic of EUR 817 million, also published in this study. And finally, adopted was the share of expenditure on the goods and services amounting to 51.29%, which again follows from that study. The value of the expenditure on cross-border online purchases of goods is inclusive of VAT (based on the purchase prices for consumers) and therefore the calculation of additional VAT revenue was carried out using the top-down method.

Model situation 1 – zero original taxation of cross-border consignments

The first situation is based on the assumption that individual sellers who sent goods to the Czech Republic from the other Member States did not exceed the VAT registration threshold in the Czech Republic for the shipment of goods (CZK 1,140,000 for the past 12 months), and therefore the place of supply for these transactions was originally determined at the sellers' place of establishment. All the deliveries of goods to the Czech Republic from third country sellers were also exempt from VAT because these were goods worth up to EUR 10/22, so no tax was paid in the Czech Republic on these supplies. The calculation of the additional VAT revenue under these assumptions, therefore, represents the maximum possible increase in the Czech Republic's public budget revenues that would have been recorded in 2015 if the new e-commerce rules had already applied.

The new rules for online trade in goods, which apply from 1 July 2021, stipulate that the place of supply may be determined in the seller's Member State of establishment only if the total value of intra-EU distance sales of goods does not exceed EUR 10,000 per calendar year. At the same time, the new rules stipulate that supplies from third countries will also be taxed in the country of final consumption, regardless of the value of the goods. We assume that all the sellers have exceeded the EUR 10,000 threshold for the calendar year, so Czech tax will have to be paid on these supplies of goods.

Therefore, if we consider that no value-added tax was paid on any cross-border online supply of goods in 2015, then the public budgets of the Czech Republic lost about CZK 2 billion using the basic VAT rate (21%) applicable in 2015. This amount is calculated according to Formula (1):

$$VAT_CBS = EXPND_CBOPG \times \frac{21}{121}, \quad (1)$$

where *VAT_CBS* represents VAT on cross-border sales and *EXPND_CBOPG* means expenditure on cross-border online purchases of goods.

Using the data for 2015, as *EXPND_CBOPG* amounts to approximately CZK 11.5 billion; *VAT_CBS* equals approximately CZK 2 billion.

Model situation 2 – originally was taxed 30% of the value of cross-border consignments

The likelihood that no cross-border consignment was taxed in the Czech Republic under the rules in force until the end of June 2021 is certainly very small. Therefore, we shall now adopt the assumption that 30% of the value of consignments of goods was originally taxed. However, it is still envisaged that due to the new rules effective from 1 July 2021, all cross-border consignments of goods intended for non-taxable persons established in the Czech Republic will be taxed.

The total value of expenditure incurred by households on cross-border online purchases of goods in 2015 amounted to approximately CZK 11.5 billion, of which approximately CZK 3.4 billion represents 30% of the value of consignments that were taxed. If we consider the same 21% basic tax rate as previously, then according to the above formula it can be calculated that in 2015 almost CZK 600 million was paid in VAT from these cross-border consignments of goods.

The additional VAT revenue that would have been recorded if the newly introduced rules had been in force at that time, which, according to the above assumption, would have resulted in the taxation of all shipments, therefore amounts to approximately CZK 1.4 billion. This additional revenue for the public budgets of the Czech Republic corresponds to CZK 2 billion of potential revenue from all the shipments less CZK 600 million, which were per our assumptions also paid under the original rules.

Model situation 3 – originally was taxed 50% of the value of cross-border consignments

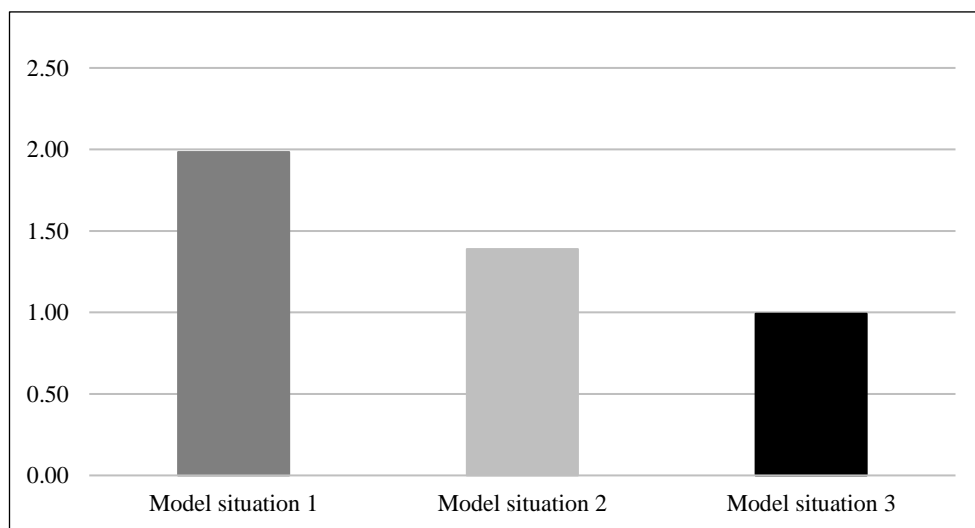
The final model situation is based on the assumption that the rules valid until June 2021 triggered the taxation of cross-border consignments of goods in 50% of the cases, in other words, that 50% of the value of cross-border consignments of goods was subject to VAT.

This 50% of the expenditure spent by households on online purchases of goods represents approximately CZK 5.7 billion. Of this value, VAT of approximately CZK 1 billion was paid when applying the 21% tax rate (see Formula 1). Unrealised revenue lost by the public budgets of the Czech Republic as a result of non-taxation of the 50% of expenditure on cross-border online purchases of goods, therefore

aggregates to the same amount that was collected, *i.e.* approximately CZK 1 billion (half of the total of CZK 2 billion calculated in Situation 1).

The estimate of the impact of individual model situations on the Czech Republic's public budget revenues in 2015 is shown in Fig. 1.

Fig. 1 Estimated impact of individual model situations on public budget revenues in the Czech Republic in 2015 (in CZK billion)



Source: Directorate-General for Taxation and Customs Union, 2016 + authorial computation.

4.2 Additional VAT revenue in 2019

The importance of electronic commerce in goods and services is constantly growing over time, especially due to the ongoing development of information technology, particularly the internet.

Therefore, we present the calculated additional value-added tax revenues resulting from online purchases, *i.e.* goods flowing to the Czech Republic, that the new e-commerce rules should bring to the public budgets of the Czech Republic for 2019, the last year for which it was possible to collect the necessary data on final household consumption. However, the current pandemic situation has certainly brought (and will bring) a further boom in online shopping.

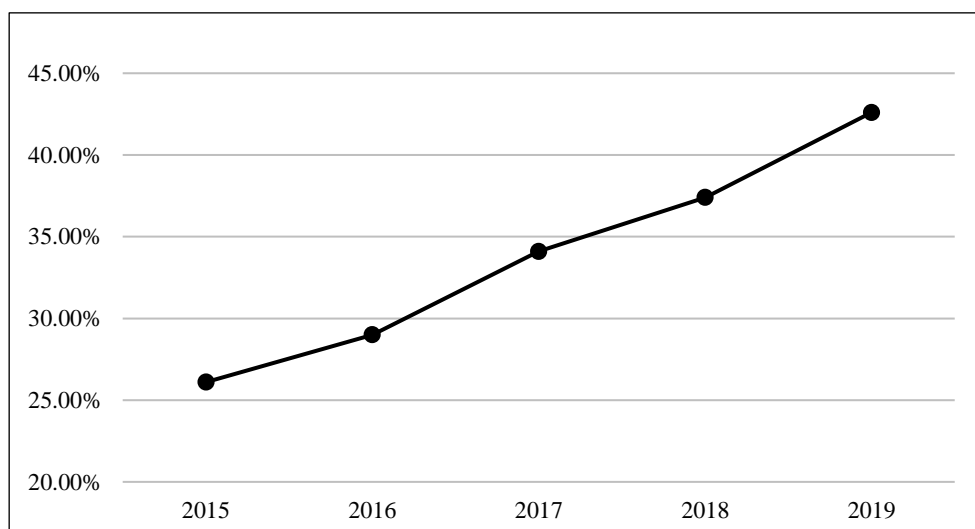
Databases of the Czech Statistical Office do not record any data on how much was spent on online shopping in the Czech Republic in 2019. Similarly, a consumer survey conducted by Deloitte and Ipsos in 2015 was the last survey commissioned

by the European Union in the domain of e-commerce. At the same time, no other private (corporate) subject has conducted such a survey.

The calculations of the additional VAT revenue stemming from the online cross-border purchases by individuals for 2019 are therefore based on the data contained in the consumer survey by Deloitte and Ipsos. These data have been indexed through inflation and also adjusted for the growing share of online shoppers, *i.e.* the assumption has been made that expenditure on online purchases is growing at the same rate as the share of online shoppers, as identified by the Czech Statistical Office's (2020) questionnaire survey "Use of information and communication technologies in households and among individuals". For this assumption to be met it would mean that people are still buying the same structure of goods (services) at the same values. The change in the number of people shopping online and the corresponding growth in the value of goods purchased online between 2015 and 2019 are shown in Fig. 2 and Fig. 3.

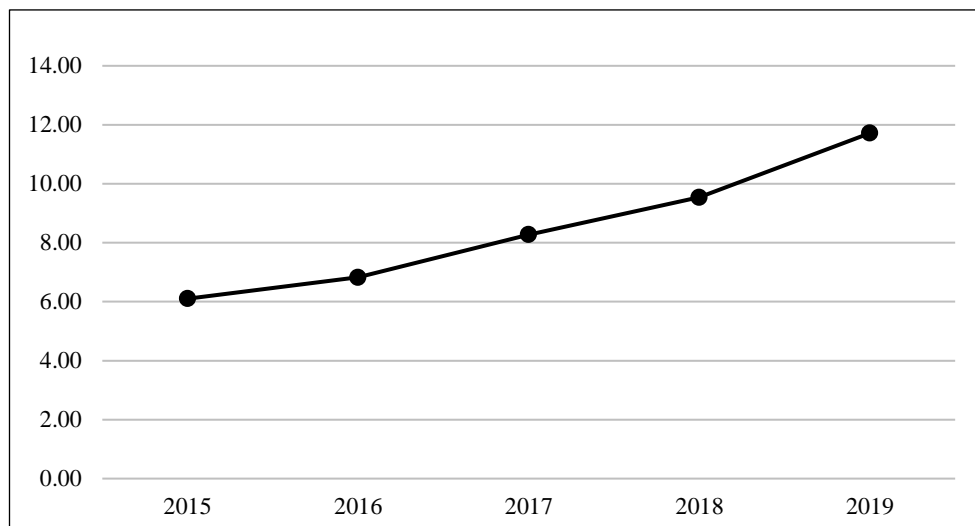
Tab. 3 shows all the values related to expenditure on online purchases of households converted to CZK that are relevant for the calculation of the additional VAT revenue for 2019. Expenditures on cross-border purchases were derived from the 23% share of cross-border purchases, found in the questionnaire survey (Czech Statistical Office, 2019). The assumption was that the share of goods purchases in total cross-border purchases remained unchanged since 2015 and stayed at 51.29%.

Fig. 2 Share of online shoppers in the Czech Republic between 2015 and 2019



Source: Czech Statistical Office, 2020 + authorial computation.

Fig. 3 Expenditure on online shopping in the Czech Republic between 2015 and 2019 (in EUR billion)



Source: Czech Statistical Office, 2020; 2021; Directorate-General for Taxation and Customs Union, 2016 + authorial computation.

Tab. 3 Data concerning the Czech Republic that were necessary for the calculation of the additional VAT revenue for 2019

	Value
Total expenditure on online purchases (in CZK)	300,753,445,817
Expenditure on cross-border online purchases (in CZK)	69,173,292,538
Expenditure on cross-border online purchases of goods (in CZK)	35,478,981,743
Share of expenditure on online purchases in total final consumption expenditure of households	11.43%
Share of expenditure on cross-border online purchases in total expenditure on online purchases	23.00%

Source: Czech Statistical Office, 2020; 2021; Directorate-General for Taxation and Customs Union, 2016 + authorial computation.

Next, from the above data on cross-border online purchases of goods, there is calculated the potential VAT collection on these shipments in three model situations (as for 2015). Since the values are being recorded in prices including VAT, the additional VAT revenue is calculated once again using the top-down method (see Formula 1).

Model situation 1 – zero original taxation of cross-border consignments

Same as for the 2015 calculations, the first model situation assumes that the rules valid until the end of June 2021 have resulted in zero taxation of cross-border shipments of goods to non-taxable persons. Therefore, no VAT was levied since the place of supply, determined for consignments originating in the other EU Member States, was the place of departure/establishment of the seller, and for all cases of shipments of goods from third countries, the VAT exemption for low-value consignments was applied.

Based on the calculation below, the additional value-added tax revenue that would have been recorded by the public budgets of the Czech Republic in 2019 if the rules introduced from 1 July 2021 were already in force at that time would amount to approximately CZK 6.2 billion.

The calculation was performed by the top-down approach (same as for 2015) and Formula (1). As *EXPND_CBOPG* amounts to approximately CZK 35.5 billion; *VAT_CBS* equals approximately CZK 6.2 billion.

Model situation 2 – originally was taxed 30% of the value of cross-border consignments

The second model situation overrides the assumption set in the first model situation that no shipment was initially taxed. It is now assumed that, under the rules in force until the end of June 2021, 30% of cross-border shipments were taxed, or in other words, 30% of expenditure on online cross-border purchases of goods by households was subject to taxation.

The tax base was therefore approximately CZK 10.6 billion (30% of the total expenditure on online purchases of goods), of which approximately CZK 1.9 billion in value-added tax was paid in 2019 at the 21% tax rate. If it is assumed that, due to the new rules effective from 1 July 2021, all such shipments of goods to non-taxable persons in the Czech Republic would be taxed, the additional VAT revenue would be calculated on the tax base of 70% of the value of the expenditure and would amount to approximately CZK 4.3 billion.

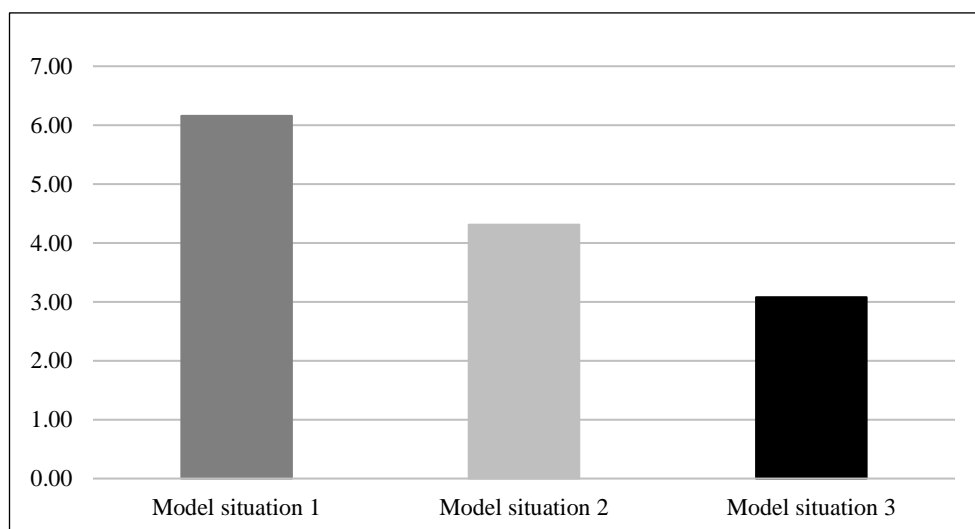
Model situation 3 – originally was taxed 50% of the value of cross-border consignments

The third model situation is based on the condition that initially up to 50% of expenditure on cross-border online purchases of goods was taxed in 2019. This corresponds to the VAT paid of CZK 3.07 billion (see Formula 1).

If it is once again assumed that the new rules introduced in July 2021 would result in the taxation of all cross-border shipments in the Czech Republic, then the additional revenue would amount to approximately CZK 3.07 billion (calculated as $17.7 \times 21 / 121$), *i.e.* twice as much VAT revenue would be recorded on these shipments compared to the situation when there would be applied the rules valid until the end of June 2021.

Fig. 4 shows the estimated impact of the individually modelled situations on the public budgets of the Czech Republic in 2019

Fig. 4 Estimated impact of individual model situations on public budget revenues in the Czech Republic in 2019 (in CZK billion)



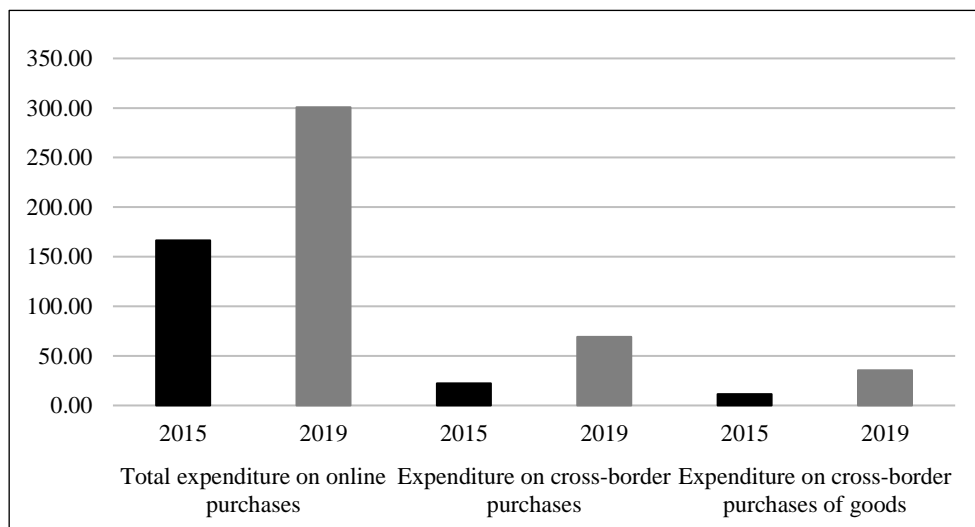
Source: Authorial computation.

The above calculations clearly show that there was a very significant increase in potential additional VAT revenue between 2015 and 2019, mainly due to the increasing popularity of online shopping. The additional revenue that would have been recorded by the public budgets of the Czech Republic if the newly introduced rules from July 2021 had already been in place in both 2015 and 2019 has increased approximately threefold between these years.

Fig. 5 summarises the data on the development of households' spending on online purchases, on which the calculation of additional VAT revenue for public budgets was based. It is the growing popularity of online shopping that is very visible, with total spending on online purchases of goods and services almost doubling between 2015 and 2019. Spending on cross-border purchases has increased approximately

threefold. The share of online purchases in total household consumption was 7.74% in 2015 and 11% in 2019.

Fig. 5 E-commerce-related expenditure by households in 2015 and 2019 (in CZK billion)



Source: Directorate-General for Taxation and Customs Union, 2016 + authorial computation.

5 Discussion

The above-performed calculations are based on several assumptions, presented in different parts of the article, and these may or may not have been met. However, all the calculations are performed with real data on final household consumption (Czech Statistical Office, others) and as such thus provide reliable information on the range within which the impact on VAT revenues could vary.

To assess the accuracy of our results, the above-estimated volumes of online trading in the Czech Republic will be compared with information on e-commerce in Europe, retrieved from the Ecommerce News Europe website (Ecommerce News, 2020). In particular, we want to verify the assumption adopted in the calculation of the value of cross-border online transactions in 2019 in that the growth in the value of transactions corresponds to the growth in the share of online shoppers.

If we apply our method of calculating the value of cross-border online purchases of goods in 2019 to the whole EU, we obtain an estimate of total cross-border online purchases in 2019 of EUR 134 billion, as shown in Tab. 4.

Tab. 4 Expenditure on cross-border online shopping within the EU

	Value (in EUR)
Expenditure on cross-border online purchases (2015)	96,840,000,000
Expenditure on cross-border online purchases (2019)	134,305,421,454

Source: Directorate-General for Taxation and Customs Union, 2016 + authorial computation.

The value of spending on cross-border online purchases in 2015 is taken from the study carried out for the European Commission (Directorate-General for Taxation and Customs Union, 2016). The calculation of these expenditures for 2019 has been based on the same assumption as the calculations above for the Czech Republic, namely that expenditures are growing at the same rate as the share of online shoppers within the European Union. The calculations also took into account the inflation rate for the European Union as a whole, using data from the Eurostat (2021) database.

The website Ecommerce News Europe reports that cross-border e-commerce in Europe was worth EUR 143 billion in 2019 (Ecommerce News, 2020), which is only 6% higher than what has been estimated by our method. The higher value reported by the Ecommerce News Europe website may be caused by the fact that this source reports data for the European region as a whole whereas the value of cross-border online purchases in 2019 as calculated by us refers only to the European Union.

It can therefore be concluded that estimates of the impact of the new VAT rules applied to cross-border shipments of goods to non-taxable persons for the Czech Republic in 2019 are based on reliable data on cross-border purchases.

6 Conclusion

Among the most important changes introduced by the individual EU Directives and Regulations ranks the extension of the sphere of activity of one-stop which may now be used not only to pay taxes related to telecommunications, broadcasting and electronically supplied services but newly also concerning all various types of provided services, along with transactions related to online purchases of goods by non-taxable persons (the option to use the One Stop Shop have both the suppliers from the European Union and third countries alike). Concerning this change, the thresholds above which the supplier of goods was until the end of June 2021 obliged to register for tax in the country of final consumption of the goods, *i.e.* in the country where the non-taxable purchasing person was established, were abolished. Instead of these thresholds, a single threshold of EUR 10,000 is now introduced, which the

supplier aggregately follows for all its supplies of goods to the other EU Member States. These changes should result in more frequent taxation of supplies of goods in the country of establishment of the purchaser, *i.e.* the newly introduced rules comply with the principle of taxation in the country of final consumption. These changes should also result in an increase in the tax revenue for public budgets in the countries of final consumption of the goods as long as cross-border purchases of goods by non-taxable persons from these EU Member States outweigh in these countries cross-border supplies to non-taxable persons which are residents in the other EU Member States.

Another important change relates to e-commerce with third countries, it is the abolition of the VAT exemption for imports of goods of low value to non-taxable persons. Thanks to this measure, competition between the EU and the previously legislation-favoured non-EU suppliers is being levelled out. A further consequence of this exemption's abolition should be an increase in revenue for the public budgets of individual EU Member States, since from July 2021 every consignment of goods imported from a third country is taxed, compared to only those parcels whose value exceeded the relevant threshold (EUR 10/22) set by the previous legislation.

This article aimed to calculate the impact of the new e-commerce rules on VAT collection in the Czech Republic. The assumption set at the beginning was that due to the changes in the legislation, there will be an increase in VAT revenues of the public budgets of the Czech Republic.

The calculations carried out in the context of this article show that VAT revenues will indeed increase thanks to the introduction of the new rules for e-commerce in goods. However, the additional revenue will grow not only due to the newly introduced rules but certainly also due to the stand-alone scenario of the increasing popularity of online shopping.

Total spending on online purchases of goods and services had increased from CZK 166 billion to CZK 300 billion between 2015 and 2019, thus almost doubling. Spending on cross-border purchases had increased even more, specifically from CZK 22 billion in 2015 to CZK 69 billion in 2019. In 2019, cross-border online purchases were, therefore, three times higher than in 2015. The same applies to cross-border online purchases of goods covered by the new VAT rules, which had also increased approximately threefold, from CZK 11 billion to CZK 39 billion.

The additional VAT revenue resulting from the new rules would be between CZK 1 and 2 billion in 2015 and between CZK 3.1 and 6.1 billion in 2019. It should be noted that these calculations are based on the in-flow of goods and online sales are not considered. Further research could elaborate on a more complex calculation where the impact of online sales on individuals in other member states would be

taken into account. Given the growth in the volume of cross-border online trading, it can be assumed that the benefit to public budgets will be even higher in 2021 due to the new VAT rules for e-commerce applicable from 1 July 2021.

References

Abramova, A., Shaposhnykov, K., Zhavoronok, A., Liutikov, P., Skvirskyi, I., Lukashev, O., 2021. The Ecosystem of VAT Administration in E-Commerce: Case of the Eastern Europe Countries. *Studies of Applied Economics*, 39(5). DOI: 10.25115/eea.v39i5.4909.

Cnossen, S., 2010. Three VAT studies. CPB Special Publication 90, CPB Netherlands Bureau for Economic Policy Analysis. Available from: <<https://cpb.nl/sites/default/files/publicaties/download/bijz90.pdf>>. [22 March 2022].

Czech Statistical Office, 2019. Use of ICT in Households and by Individuals - 2019. Available from: <<https://www.czso.cz/csu/czso/vyuzivani-informacnich-a-komunikacnich-technologie-v-domacnostech-a-mezi-jednotlivci-2019>>. [7 August 2021].

Czech Statistical Office, 2020. Use of ICT in Households and by Individuals - 2020. Available from: <<https://www.czso.cz/csu/czso/vyuzivani-informacnich-a-komunikacnich-technologie-v-domacnostech-a-mezi-jednotlivci-2020>>. [7 August 2021].

Czech Statistical Office, 2021. Supply and use tables. Available from: <https://apl.czso.cz/pll/rocenka/rocenkaout.dod_uziti?mylang=EN>. [7 August 2021].

Dietl, H. M., Jaag, C., Lang, M., Trinkner, U., 2011. Competition and Welfare Effects of VAT Exemptions. *Journal of Economic Analysis & Policy*, 11(1). DOI: 10.2202/1935-1682.2855.

Directorate-General for Taxation and Customs Union, 2016. VAT aspects of cross-border e-commerce: Options for modernisation. Final report – Lot 1, Economic analysis of VAT aspects of e-Commerce, Publications Office. European Commission. DOI: 10.2778/820831.

Directorate-General for Taxation and Customs Union, 2020. Explanatory Notes on VAT e-commerce rules. European Commission. Available from: <https://taxation-customs.ec.europa.eu/system/files/2020-12/vatecommerceexplanatory_28102020_en.pdf>. [7 August 2021].

Ecommerce News, 2020. Cross-border ecommerce Europe worth €143 billion. Ecommerce News Europe. Available from: <<https://ecommercenews.eu/cross-border-ecommerce-europe-worth-e143-billion/>>. [7 August 2021].

European Commission, 2016. Commission Staff Working Document. Impact Assessment. Accompanying the document Proposals for a Council Directive, a Council Implementing Regulation and a Council Regulation on Modernising VAT for cross-border B2C e-Commerce. Available from: <<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016SC0379&from=EN>>. [7 August 2021].

Eurostat, 2021. HICP - all items - annual average indices. Available from: <<https://ec.europa.eu/eurostat/databrowser/view/tec00027/default/table?lang=en>>. [7 August 2021].

Keen, M., Smith, S. C., 2007. Vat Fraud and Evasion: What Do We Know, and What Can be Done? IMF Working Paper 07/31. DOI: 10.5089/9781451865950.001.

Kowal, A., Przekota, G., 2021. VAT Efficiency—A Discussion on the VAT System in the European Union. Sustainability 13(9), 4768. DOI: 10.3390/su13094768.

Kubátová, K., 2010. Daňová teorie a politika [Tax Theory and Politics]. 5th Edition. Prague: Wolters Kluwer ČR. ISBN: 978-80-7357-574-8.

Lamensch, M., 2012. Are ‘reverse charging’ and the ‘one-stop-scheme’ efficient ways to collect VAT on digital supplies? World Journal of VAT/GST Law, 1(1), 1–20. DOI: 10.5235/wjovl.1.1.1.

Lamensch, M., 2015. European Value Added Tax in the Digital Era: A Critical Analysis and Proposals for Reform. IBFD Doctoral Series, 36. Amsterdam: IBFD. ISBN 978-90-8722-345-8.

Lamensch, M., 2018. Adoption of the E-Commerce VAT Package: The Road Ahead Is Still a Rocky One. EC Tax Review, 27(4), 186–195. DOI: 10.54648/ecta2018020.

Merkx, M., 2020. New VAT Rules for E-Commerce: The Final Countdown Has Begun. EC Tax Review, 29(4), 197–205. DOI: 10.54648/ecta2020046.

Messina, S., 2021. VAT E-Commerce Package: Customs Bugs in the System? World Tax Journal, 13(1). Available from: <<https://www.ibfd.org/shop/journal/vat-e-commerce-package-customs-bugs-system>>. [29 March 2022].

Schenk, A., Thuronyi, V., Cui, W., 2015. Value Added Tax: A Comparative Approach. 2nd Edition. New York, NY: Cambridge University Press. ISBN: 978-1-107-04298-8.

Kebrtová, K. – Zídková, H.: *New VAT Rules for E-commerce: What Will They Bring to Public Budgets?*

Sinyor, A., 2002. EU VAT on e-commerce: the practical implications. *International Tax Review*, 13(6), 32–33.

Šíroký, J., 2018. *Daně v Evropské unii [Taxes in the European Union]*. 7th Edition. Prague: Leges. ISBN: 978-80-7502-274-5.

Terra, B., Kajus, J., 2015. *A guide to the European VAT directives*. Hoorn: IBFD. ISBN 978-90-8722-308-3.