Czech University of Life Sciences Prague

Faculty of Economics and Management

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Bachelor Thesis

Evaluation of Electronic Registration of Sales in the Czech Republic

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Faculty of Economics and Management

BACHELOR THESIS ASSIGNMENT

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Thesis title

Evaluation of Electronic Registration of Sales in the Czech Republic

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Objectives of thesis

The aim of this Bachelor Thesis is a comparison and assessment of tax collection before and after introduction of Electronic Registration of Sales in the Czech Republic. Also, there is given description of Electronic Registration of Sales and what part it makes in the government revenue.

Methodology

In the Bachelor Thesis is used analysis of Electronic Registration of Sales, analysis of time series, basic statistical analysis and methods of comparison.

The proposed extent of the thesis
40 – 60 pages

Keywords
Electronic Registration of Sales, tax, government revenue, analysis

Recommended information sources
BANKSTON, T A. – JONES, C P. *Introduction to Financial Management : Study Guide for use with..*
HAJDUŠEK, Tomáš a Milan VODIČKA. První zkušenosti s EET – elektronickou evidencí tržeb. Praha: Wolters Kluwer, 2017. ISBN 978-80-7552-589-5.
Nařízení vlády č. 376/2017 Sb., o vyloučení některých tržeb z evidence tržeb – účinnost do 31. 12. 2018
OTT, Lyman a Michael LONGNECKER. An introduction to statistical methods & data analysis. Seventh edition. Australia: Cengage Learning, 2016. ISBN 9781305269477.
VODIČKA, Milan. 3D: Data, daně digitálně, aneb, Ajťákem i proti své vůli. Praha: Wolters Kluwer, 2014. ISBN 978-80-7478-671-6.
Zákon č. 112/2016 Sb., o evidenci tržeb, v platném znění
Zákon č. 235/2004 Sb., o dani z přidané hodnoty, v platném znění
Zákon č. 563/1991 Sb., o účetnictví, v platném znění
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Declaration

I declare that I have worked on my bachelor thesis titled " Evaluation of Electronic Registration of Sales in the Czech Republic " by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break copyrights of any their person.

In Prague on 15th March 2019 _____

Evaluation of Electronic Registration of Sales in the Czech Republic

Abstract

Electronic registration of sales is a newly established system operating in the Czech Republic since December 2016. Electronic registration of sales is a system that collects information about every taxpayer, whether taxpayer correctly register cash sales and does not work at the expense of other entrepreneurs. By electronic registration of sales, all businesses should have a level playing field in a competitive market. Registration of sales also improved tax collection. This thesis deals with collecting taxes before and after the introduction of electronic registration of sales. The aim of the thesis is to evaluate the tax collection before and after the introduction of electronic registration of sales. The long-term tendency of the growth rate of tax collection in the Czech Republic is done by index analysis. Using the time series analysis is determined the linear trend of collected VAT, income taxes and total tax collection going into the state budget and then is compared to actual values. Furthermore, the predictions for 2018, 2019 and 2020 are calculated. The data are compared from 2008 to 2017.

Keywords: Electronic registration of sales, tax, state budget, analysis, index analysis, time series analysis, income tax, VAT

Zhodnocení elektronické evidence tržeb v České republice

Abstrakt

Elektronická evidence tržeb je nově založený systém fungující v České republice od prosince 2016. Elektronická evidence tržeb je systém, který sbírá informace o každé tržbě poplatníka, zda správně eviduje hotovostní tržby a nepodniká na úkor jiných podnikatelů. Díky Elektronické evidenci tržeb by měli mít všichni podnikatelé rovné podmínky v konkurenčním boji na trhu. Evidováním tržeb se také zlepšil výběr daní. A právě výběrem daní před a po zavedení elektronické evidence tržeb se tato práce zabývá. Cílem práce je zhodnocení výběru daní před a po zavedení elektronické evidence tržeb. Dlouhodobá tendence tempa růstu výběru daní v České republice je zhotovena indexní analýzou. Pomocí analýzy časových řad je zjištěn lineární trend vybraných částek na DPH, daních z příjmů a celkového výběru daní do státního rozpočtu, který je porovnán se skutečnými částkami. Dále také je vypočítána predikce pro roky 2018, 2019 a 2020. Data jsou porovnána od roku 2008 do roku 2017.

Klíčová slova: Elektronická evidence tržeb, daň, státní rozpočet, analýza, indexní analýza, analýza časových řad, daň z příjmů, DPH

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VAT   Value-Added Tax

1 Introduction

Electronic Registration of Sales yes or no?

The bachelor thesis deals with the newly established tool of Financial Administration in the Czech Republic, called Electronic Registration of Sales. The system aims to improve and also increase revenues to the state budget, specifically from value-added tax, income tax, social and health insurance or limiting unemployment benefits.

This system should have to come, since tax cuts have become almost commonplace in certain areas of business in the Czech Republic. The introduction of the system required a strenuous step to prevent this. They came up with a modern system avoiding tax evasion and provide to Financial Administration the tool to collect effective information about the taxpayer, whether it correctly register cash sales and does not work at the expense of other entrepreneurs.

Electronic registration of sales in the Czech Republic were introduced after careful analysis and comparison of systems in other European Union countries. Some functioning forms of sales records can be seen in 17 European Union countries, including for example Croatia, Austria, Poland, Belgium.

In the Czech Republic are entrepreneurs involved into the electronic registration of sales gradually. In the 1st phase, the accommodation and catering services took place from December 1st, 2016, then the 2nd phase from March 1st, 2017 retail shops and wholesalers. The 3rd phase of other activities such as the liberal professions, transport, agriculture and the 4th phase of selected crafts and production activities was temporarily-suspended.

By electronic registration of sales, all businesses should have a level playing field in a competitive market. There is also a possible reduction of the state budget deficit, higher investment in healthcare, culture, education, transport infrastructure and other public services and a possible reduction in the value-added tax rate from 21 % to 15 %, with the exception of alcohol, tobacco and complementary products.

The work is divided into two parts. The first part focuses on the characteristics of the electronic registration of sales. It describes how the system works, what is needed to start register sales and launch of electronic registration in phases. Linking electronic registration of sales with Income Tax collection for Natural persons and Legal Entities, as well as VAT collection, which is one of the most important revenues of the state budget. In the second part of the thesis, I use the comparison method, index analysis and the time series analysis for determination of tax collection before and after the introduction of electronic registration of sales. I will review this and provide proof that the introduction of the electronic registration of sales is meaningful.

The bachelor thesis draws on the knowledge and information obtained from professional literature and professional articles.

2 Objectives

The objective of this bachelor thesis is getting acquainted the electronic registration of sales. The bachelor thesis aims at tax collection before and after introduction of electronic registration of sales and their contribution to the state budget. The value-added tax (VAT) and the income tax are linked to electronic registration of sales. At first, the long-term tendency of tax collection is determined by index analysis. Taxes especially the value-added tax (VAT) and the income tax are analyzed and by the comparative method describes the selection of taxes and how much of them goes to the state budget. The prediction for years 2018, 2019 and 2020 is also given. The data were provided by the Financial Administration through their official website. Data are showing the collection of taxes in the state budget gathered up from 2008 until 2017.

3 Literature Review

3.1 State budget

The state budget represents the state's financial management plan for the given financial year, which ensures the fulfilment of the state's economic, social and political functions. Through the state budget, government implements economic policy and its program priorities. The state budget is a centralized money fund and represents the balance of government revenue and expenditure for the financial year. The financial year is the same as the calendar year.

The revenue side of the budget contains information on what sources the government plans to finance the activities, for example taxes, fees or other revenue.

The expenditure side of the budget informs about how much the state spends on the funding of individual state activities such as education, health care, pensions, defence and others. [1]

We will focus on the state budget from the revenue side.

3.2 Electronic Registration of Sales

The long-term effort of many entrepreneurs is not to expose the receipts for the products sold or the services provided and thus not to pay taxes from the sales. The first attempt to register the sales was the introduction of cash registers and the subsequent introduction of § 18 of the VAT Act in the 90s of the 20th century. However, this legislation was soon cancelled. Cash registers continue to operate in Slovakia.

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[1] *Státní rozpočet ... v kostce: informační příručka Ministerstva financí České republiky.* Praha: Ministerstvo financí, 2014-. ISBN 978-80-7586-008-8.

What is Electronic Registration of Sales? A financial administration tool that aims to improve and increase revenue to the state budget. Even before the introduction of the system, huge debates have been made on this topic, and they do not still stop. The electronic registration of sales has its supporters as well as a large number of opponents. The bachelor thesis will not deal with the electronic registration of sales solution in any way, whether it is good or bad, I leave it to the other busy discussions. The aim of the work is to document in the basic outlines described and especially in the calculations according to known mathematical methods whether the implementation of the system has an impact on the receipt of funds into the state budget.

Electronic Registration of Sales or **online sales registration** is a modern system whose primary goal is to register cash sales for goods and services. It facilitates communication between independent entrepreneurs and Financial Administration, so that every cash revenue is recorded online at the time of payment. Simply put, a special electronic cash register sends data to the central data store of the Financial Administration. By turn, the business receives a unique code that is placed on the receipt.

Registration of Sales is introduced in 17 countries of the European Union. Most countries still use classic offline cash registers. In some countries, their duty applies only to selected types of shops and services such as Belgium - only catering. The online system is used in countries such as Croatia, Slovakia, Hungary, Slovenia, Romania. In some countries, the obligation to register sales applies only to entrepreneurs with a turnover above a certain threshold, such as Austria - € 15,000. In some countries, customers are required to accept a receipt such as Austria, Italy, outside Europe, e.g. Australia.[2]

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[2] HAJDUŠEK, Tomáš a Milan VODIČKA. *První zkušenosti s EET - elektronickou evidencí tržeb*. Praha: Wolters Kluwer, 2017. ISBN 978-80-7552-589-5.

3.3 Concept in the Czech Republic

In the Czech Republic, the system was launched on 1st December 2016. The start of electronic registration of sales was to be divided into several phases. Why phasing? Phasing should allow slow loading of the system while providing entrepreneurs with sufficient space to prepare. The businessman had to evaluate, from his activities, the revenues flow and classify the activity in the relevant NACE class (CZ-NACE is used for the systematic hierarchical classification of the activities performed by economic entities in the production of certain products or services and is created by the Czech Statistical Office). [3]

Classification then generates the obligation for an entrepreneur to initiate registration of the relevant sales, regardless of whether the revenues come from the main or other business activity.

However, if the entrepreneur is not sure, he can use the so-called binding assessment of the local tax office. The businessman must specify the payments to be assessed. If so, the tax office shall issue an authoritative decision whether or not the sales are subject to electronic registration. Such a decision will then be open to the entrepreneur.

In connection with the Registration of Sales, the accompanying Act No. 113/2016 Coll., which amends some laws in connection with the adoption of the law on Registration of Sales was adopted. This law amends, among other things, the Income Tax Act. The range of tax rebates is expanding to registration of sales reduction of CZK 5,000. **The amount of discounts on registration of sales is up to CZK 5,000.** It will, however, be at most the amount of the positive difference between the 15 percent sub-base of the tax on the separate activity and the basic tax deductible. **Discount receipts can be applied only in the taxable period in which the taxpayer first recorded the revenue he is required to record under the Registration of Sales Act.**[4]

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[3] *Evidence tržeb: Metodický pokyn k aplikaci zákona o evidenci tržeb* [online]. Praha: Generální finanční ředitelství: http://www.etrzby.cz/assets/cs/prilohy/Metodika-k-evidenci-trzeb_v1.0.pdf

[4] Zákon č. 112/2016 Sb., o evidenci tržeb, as amended

3.3.1 Phases of Electronic Registration of Sales

➤ **1ˢᵗ phase (1 December 2016 - catering and accommodation services**

- NACE 55 Accommodation (mostly short-term accommodation, hotels, camps, guesthouses, camp sites, hostels ...)
- NACE 56 Catering (food offered for immediate consumption, whether consumed on site or not, restaurants, pubs, cafes, canteens, booths, ice cream makers, catering ...)

➤ **2ⁿᵈ phase (since 1 March 2017) - retail and wholesale**

- NACE 45.1 - Sale of motor vehicles, except of motorcycles, parts and accessories thereof
- NACE 45.3 - Sale of parts and accessories for motor vehicles, except motorcycles
- NACE 45.4 - Trade, repair and maintenance of motorcycles, their parts and accessories
- NACE 46 - Wholesale, except motor vehicles
- NACE 47 - Retail, except motor vehicles

➤ **3ʳᵈ phase - Other non-Phase 1, 2nd or 4th activities - includes all other NACE not listed in other phases, such as:**

- NACE 49.32 - Taxi services
- NACE 49.10 - Railway passenger transport interurban
- NACE 49.41 - Road freight transport
- NACE 10.7, 10.1, ... - Entrepreneurs in production (bakers, confectioners, butchers ...)
- NACE 86, 69.1, 75.0, ... - Freelance professions (doctors, lawyers, veterinarians ...)
- and others

> ➤ **4th phase - selected craft and production activity**

- NACE 13 - Manufacture of textiles
- NACE 14 - Manufacture of clothing
- NACE 15 - Manufacture of leather and related products
- NACE 16 - Wood processing, manufacture of wood, cork, wicker and straw products, except furniture
- NACE 17 - Manufacture of paper and paper products
- NACE 20.4 - Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations
- NACE 22 - Manufacture of rubber and plastic products
- NACE 23 - Manufacture of other non-metallic mineral products
- NACE 25 - Manufacture of metal structures and fabricated metal products, except machinery and equipment
- NACE 31 - Manufacture of furniture
- NACE 32 - Other manufacturing industries of games and toys, sporting goods, musical instruments, ...
- NACE 33 - Repair and installation of machinery and equipment
- NACE 43 - Specialist construction activities (e.g. electricians, tilers, painters, roofers, ...)
- NACE 95 - Repairs of computers and personal and household goods (e.g. Handyman, computer repair technician, ...)
- NACE 96 - Provision of other personal services (e.g. hairdressers, masseurs, ...)[5]

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[5] *Evidence tržeb: Metodický pokyn k aplikaci zákona o evidenci tržeb* [online]. Praha: Generální finanční ředitelství: http://www.etrzby.cz/assets/cs/prilohy/Metodika-k-evidenci-trzeb_v1.0.pdf

Phases 3rd and 4th under the electronic registration of sales Act are awaiting entrepreneurs until later. Its starting is expected in 2019. However, other business entities, which are doing business, also on a seasonal basis, are expected to continue. More than 300,000 entrepreneurs should be involved in these further phases of the electronic registration of sales.

3.3.2 Legislative Framework

Act No. 112/2016 Coll., about the Registration of Sales regulating the rights, obligations and procedures related to them, came into effect by a proclamation in the Collection of Laws on April 13th, 2016. At the same time with the Act on the Registration of Sales, the Act No. 113 / 2016 Coll., which amends some laws in the connection with the adoption of the Registration of Sales Act.

In mid-December 2017, the Constitutional Court annulled its part of the Law on Electronic Registration of Sales. However, as a whole, the law has stood up because, according to the court's statement, electronic registration of sales is a legitimate and effective tool for tax collection and settlement of the business environment.

The competence and the exercise of the corresponding competencies associated with the registration of sales are entrusted to the bodies of the Financial Administration of the Czech Republic, which are in the first instance financial offices. In addition to the bodies of the Financial Administration of the Czech Republic, the authorities of the Customs Administration of the Czech Republic are also competent to verify compliance with the obligations under this Act. [6]

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[6] *Evidence tržeb: Metodický pokyn k aplikaci zákona o evidenci tržeb* [online]. Praha: Generální finanční ředitelství: http://www.etrzby.cz/assets/cs/prilohy/Metodika-k-evidenci-trzeb_v1.0.pdf

3.4   Registration of Sales

The subject of Registration of Sales are registered sales recorded by taxpayers of personal income tax and corporate income tax payers, in all cases all those entrepreneurs subject to the Income Tax Act are obliged to register the sales.

In order for the sale to be subject to electronic registration, it must meet certain requirements. In the first place, the so-called formalities of the payment must be fulfilled. This means that the payment is made in one of the ways specified in the law. It must therefore be a payment:

- in cash,
- by check,
- bills of exchange,
- in other forms that are similar to previous forms (eg gift cards, vouchers for goods and services - including vouchers, payment via tokens and similar instruments, including virtual currencies) or
- by deducting a deposit or similar security made up by any of the payment methods described above.[7]

Until recently, the card payments were also required to register. According to the court, it is unnecessary, because there is an electronic record on these markets, so they can be traced in the case of a search. This is not only cashless payments in shops but also card payments on e-shops. The debit card obligation was terminated on February 28th, 2018. However, businessmen may voluntarily register their payments by card.

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7 Zákon č. 112/2016 Sb., o evidenci tržeb, as amended

Apart from this condition, however, revenue must be a so-called decisive income. For this, the Registration of Sales Act refers to income derived from business activity. The law, however, calculates income from business activities, which will not be among the recorded sales. [8]

Part of them is:
- income that is not subject to income tax,
- income that is unique (the entrepreneur accepts payments exclusively by transfer to the account but is unexpectedly and on a one-off basis forced to receive a cash payment),
- income taxed by withholding tax,
- income subject to tax on a separate tax base for legal persons.[9]

For example, occasional sales from the garden or rental income (unless they are run by business) cannot be subtracted below the decisive income. In § 12 of the Registration of Sales Act, many other revenues that are excluded from the electronic registration of sales are calculated (for example, government revenues, banks, pension funds, school canteens, carried on board aircraft ...) [10]

8 HAJDUŠEK, Tomáš a Milan VODIČKA. *První zkušenosti s EET - elektronickou evidencí tržeb*. Praha: Wolters Kluwer, 2017. ISBN 978-80-7552-589-5.
9 Zákon č. 112/2016 Sb., o evidenci tržeb, as amended
10 Evidence tržeb: Metodický pokyn k aplikaci zákona o evidenci tržeb [online]. Praha: Generální finanční ředitelství: http://www.etrzby.cz/assets/cs/prilohy/Metodika-k-evidenci-trzeb_v1.0.pdf

3.4.1 First connection to the system

To register the sales, you need to first request the Financial Administration for authentication data, that is, username and password, which can be used to log into the electronic registration of sales web application on the taxpayer site. You can either request by a personal visit to any tax office or through a mailbox. Once you receive the authentication information, you simply log into the web application, you must register the premises and generate a certificate for each of them or for each individual device. The certificate then simply uploads to the cash register and the entrepreneur can register. [11]

3.5 Registration of Sales "online"

"1. Entrepreneur sends an XML data message about the transaction to Financial Authority.

2. Financial Authority sends back confirmation of receipt with unique code (FIK – Fiscal indentification code).

3. Entrepreneur issues a receipt (including the FIK) and provides it to the customer.

4. The customer receives receipt.

5. Registration of the sale can be verified through the web application of the Financial Authority. The customer can verify his/her receipt; entrepreneur can verify the sales registered under his name." [12]

11 HAJDUŠEK, Tomáš a Milan VODIČKA. *První zkušenosti s EET - elektronickou evidencí tržeb*. Praha: Wolters Kluwer, 2017. ISBN 978-80-7552-589-5.
12 Finanční správa České republiky. How does the registration of sales work?..Information about registration of sales [online]. 2016 : http://www.etrzby.cz/cs/english-version-609

Picture 1: Online Registration of Sales
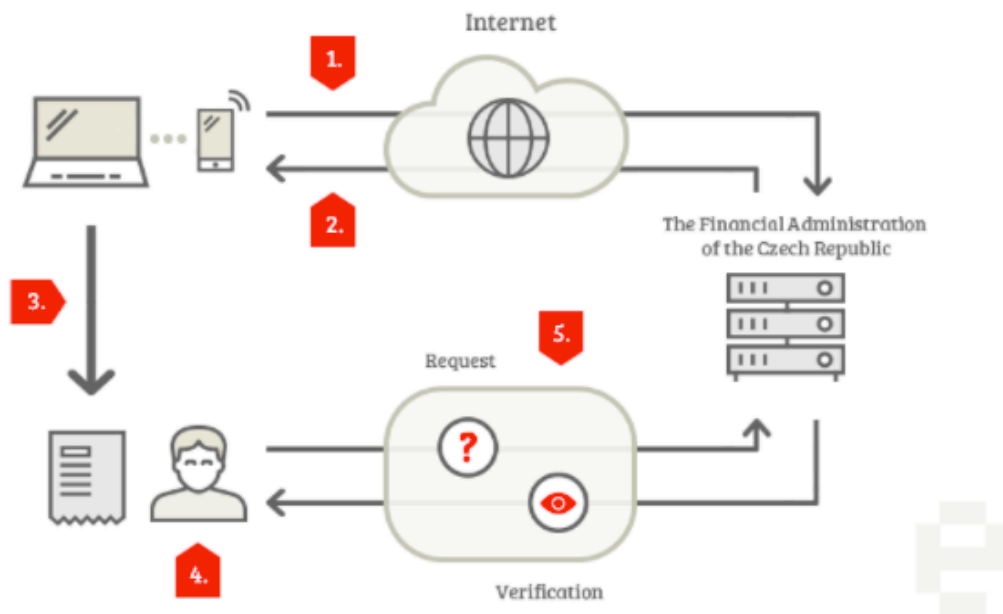
Source : etržby - elektronická evidence tržeb [online]. : http://www.etrzby.cz/assets/cs/obrazky/sp-projekt_e-trzby-o_projektu-jak_to_funguje_aj.png

3.5.1 Simplified Electronic Registration of Sales model

There is also a simplified electronic registration of sales model that will apply if, by registering in the usual way, that will make it impossible or fundamentally difficult for entrepreneurs to conduct smoothly and economically the revenue-generating activity. For some types of sales, the government determines it uniformly, so entrepreneurs can apply for permission from the tax administrator under § 11 of the Electronic Registration of Sales Act. In the simplified model, entrepreneurs will send the data of the tax administrator within 5 days of the transaction. [13]

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[13] Evidence tržeb: Metodický pokyn k aplikaci zákona o evidenci tržeb [online]. Praha: Generální finanční ředitelství: http://www.etrzby.cz/assets/cs/prilohy/Metodika-k-evidenci-trzeb_v1.0.pdf

3.6 Receipt

„A receipt is a proof of sale issued (in paper form or electronically) by a taxpayer to a person or entity making a purchase, which contains information on a registered sale defined in the provisions of Section 20 of the Act on Registration of Sales.„ [14]

Picture 2: Receipt

Source: Own input (part of the picture online : https://www.etrzby.cz/cs/zpusoby-evidence-a-uctenka)

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[14] Terminology. *Electronic Registration of Sales* [online]. Prague, 2016 :
http://www.etrzby.cz/assets/cs/prilohy/Archiv/EET_popis_rozhrani_v2.0_EN.pdf

The receipt must include:

• Fiscal identification code

• Taxpayer signature code

• Tax ID

• Sales code

• Location of the establishment where the sales are made

• Name of the cash register on which the sales are recorded

• Receipt order number

• Date and time of receiving sales or issue of a receipts if it is issued earlier

• Total amount of sale

• Tax code security

• Indication of whether the sale is recorded in normal or simplified mode

The receipt must be issued by the entrepreneur at the latest when the registered sales are realized. The customer is not obliged to take over the receipt. There is no format or method for delivering the receipts to the customer, can be displayed electronically, without printing, and passed on to the customer via e-mail, MMS or bluetooth. However, an alternative form of handover of receipts must be a match between the entrepreneur and the customer. At the tax administrator portal, anyone can verify that we have actually registered the sale.

In the future, entrepreneurs whose cash payments do not exceed CZK 200,000 are supposed to be non-VAT payers and have a maximum of two employees may be expected to register sales offline, if they so request. [15]

Those who would like to start offline and meet all conditions would have to use the paper receipts provided by the Ministry of Finance, and would quarterly send sales data to the Financial Administration.

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[15] Evidence tržeb: Metodický pokyn k aplikaci zákona o evidenci tržeb [online]. Praha: Generální finanční ředitelství: http://www.etrzby.cz/assets/cs/prilohy/Metodika-k-evidenci-trzeb_v1.0.pdf

In the context of the special regime, a businessman will have to obtain a block of receipts by the Financial Administration that he will be required to issue to customers and will not be able to use other receipts. The businessman will also have to register quarterly to the Financial Administration about sales and to have a notice on the use of the special electronic registration of sales model at the facility. At the same time, however, he will not need to request electronic registration of sales authentication data. The standard further narrows the range of receivables that are subject to registration, to sales made in the Czech Republic.

Linking of Electronic Registration of Sales with collection of Value-Added Tax and Income Tax

The revenue increase includes a combination of sales revenue itself and the associated higher value-added tax and social and health insurance, the increase in income tax from natural persons and legal entities or the reduction of unemployment benefits.

Basic description of Value-Added Tax and Income Tax

3.7 Value-Added Tax

VAT is regulated by Act No. 235/2004 Coll., On Value-Added Tax. Value-added tax is an indirect tax, which is one of the largest parts of the state budget. Value-added tax is levied by the law on the suppliers and registered VAT payers who add it to the consumer and the buyer. VAT is deductible.[16] The payment may be voluntarily or legally required by law to exceed the specified turnover.

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[16] DPH. Daň z přidané hodnoty (DPH) [online].: https://www.podnikatel.cz/n/dph/

The VAT payer is obliged to become the person carrying out the economic activity:

- After exceeding turnover for 12 consecutive calendar months worth CZK 1,000,000,
- A membership in an association in which one of the members is a VAT payer,
- Acquisition of property by privatization or sale of a business,
- Continuing to work after a deceased payer,
- And other cases listed in the VAT Act.

In the Czech Republic, the value-added tax has three rates:

- 21 % - basic VAT rate, subject to most of the goods and services,
- 15 % - first reduced rate on food, some medical aids, mass transportation, medical and nursing services and others,
- 10 % second reduced tax, subject to baby food, medicines, books and music.

Value-added tax does not include some postal services, radio and television broadcasting, financial and insurance services, health care, social care, education and education.[17]

Table 1: Evolution of VAT rates in the Czech Republic

Evolution of VAT rates in the Czech Republic		
Period	**The standard VAT rate**	**Reduced VAT rate**
1. 1. 1993 – 31. 12. 1994	23 %	5 %
1. 1. 1995 – 30. 4. 2004	22 %	5 %
1. 5. 2004 – 31. 12. 2007	19 %	5 %
1. 1. 2008 – 31. 12. 2009	19 %	9 %
1. 1. 2010 – 31. 12. 2011	20 %	10 %
1. 1. 2012 – 31. 12. 2012	20 %	14 %
1. 1. 2013 – now	21 %	15 %

Source : Podnikatel.cz.*Vývoj sazeb DPH: Daně a účetnictví* [online]. 2013:
https://www.podnikatel.cz/clanky/zmeny-v-dph-matou-podnikatele-za-poslednich-20-let-uz-sestkrat/

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[17] Zákon č. 235/2004 Sb., o dani z přidané hodnoty, as amended

The subject of value-added tax is:

- Provision of a service
- Delivery of goods
- Acquisition of goods from another Member State of the European Union
- The purchase of a new means of transport from another Member State
- Importation of goods with place of performance in the Czech Republic[18]

Prior to running the electronic registration of sales in the Czech Republic, all taxpayers were forced to file a tax return, and from the beginning of 2016 also the control statement.

3.7.1 The Control Statement

The Control Statement is a tax claim that contains the data on transactions that are shown in your VAT return. The Control Statement is largely based on VAT registration data. Amendment to Act No. 235/2004 Coll., On Value-Added Tax, effective from 1. 1. 2016 gives tax payers the obligation to submit control statement.

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[18] Zákon č. 235/2004 Sb., o dani z přidané hodnoty, as amended

Section 101d of the Value-Added Tax Act - Requirements and method of reporting

(1) In the control statement, the payer is obliged to provide the prescribed data needed for tax administration.

(a) the payer's identification and contact details,

(b) the data relating to performance and payment, where such transactions and payments give rise to the obligation to submit a control statement,

(c) data relating to the exercise of the right to deduct the tax,

(d) the identity of the customer or supplier.

(2) The control statement can be submitted only electronically to the electronic address of the registry office published by the tax administrator in the format and structure published by the tax administrator in a way allowing for remote access.

(3) If the control statement is submitted through a data message requiring additional confirmation, it must be confirmed under the conditions specified in the Tax Procedure Code within the deadline for submission of the inspection report. [19]

Control statement are required to submit:

- Legal entity
- Natural person

Legal entities submit a control statement every month. Natural persons submit control statement according to VAT payments. Monthly VAT payers submit a control statement every month, and quarterly tax payers submit their control statement quarterly. The deadline for submission of the control statement cannot be extended in any case. Sanctions may be issued for failure to report.

Starting in 2016, tax returns for value-added tax are submitted only electronically.

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[19] Zákon č. 235/2004 Sb., o dani z přidané hodnoty, §101d, as amended

Methods of electronic reporting:

- Tax Portal
- Data Box [20]

3.8 Income Tax

Income tax is, as the name implies, a tax on financial income. Income tax applies to all economically active inhabitants of the Czech Republic. Taxpayers submit a tax return every year. The tax return can be submitted personally to the tax office - a territorial workplace by a local taxpayer, by post or on the Financial Administration website and submitting an income tax return in electronic form by means of a data message provided or not by electronic signature, according to the conditions published by the Financial Administration.

Income tax is divided into two groups:

- Personal income tax
- Corporate income tax

3.8.1 Personal Income Tax

The personal income tax liability is governed by Act No. 586/1992 Coll., On Income Taxes, as amended. Personal income tax is payable by everyone whose annual earnings have exceeded CZK 30,000 unless it is a tax-exempt income or income from which the tax is levied at a special tax rate but also the one whose annual income, which are subject to personal income tax, did not exceed CZK 30,000 but showed a tax loss.[21]

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[20] Nová povinnost pro plátce DPH od roku 2016: Kontrolní hlášení. Finanční správa [online]. 2015 : https://www.financnisprava.cz/assets/cs/prilohy/d-placeni-dani/2015_KH_letak.pdf
[21] Zákon č. 586/1992 Sb., o daních z příjmů, as amended

Personal income taxpayers are tax residents of the Czech Republic residing in the Czech Republic or people with long-term stays in the Czech Republic. The tax liability for tax residents applies to income from sources originating in the territory of the Czech Republic and to income from sources from abroad.[22] The rate of personal income tax is 15 %.[23] [24]

The subject of the personal income tax provided for in § 3 of the ITA is:

- Income from dependent activity § 6 ITA
- Income from separate activities § 7 ITA
- Income from capital assets § 8 ITA
- Income from rent § 9 ITA
- Other receipts § 10 ITA[25]

3.8.2 Corporate Income Tax

The corporate income tax liability is governed by Act No. 586/1992 Coll., On Income Taxes, as amended for the relevant tax period.

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[22] Daň z příjmů fyzických osob: Obecné informace. Finanční správa[online].:
https://www.financnisprava.cz/cs/dane/dane/dan-z-prijmu/fyzicke-osoby-poplatnik/obecne-informace
[23] Zákon č. 586/1992 Sb., o daních z příjmů, as amended
[24] Zákon č. 563/1991 Sb., o účetnictví, as amended
[25] Daň z příjmů fyzických osob: Obecné informace. Finanční správa[online].:
https://www.financnisprava.cz/cs/dane/dane/dan-z-prijmu/fyzicke-osoby-poplatnik/obecne-informace

Taxation period of corporate income tax is defined as:

- Calendar year
- Financial Year
- Period from the effective date of the merger or division of a business corporation or the transfer of assets to a shareholder by the end of the calendar year or the financial year in which conversion or transfer of assets became effective
- The accounting period, if this accounting period is longer than continuous consecutive 12 months

Resident in the corporate income tax is a legal entity having its registered office in the Czech Republic or the management (address of the place) from which the taxpayer is managed. The tax liability for tax residents applies to income from sources originating in the territory of the Czech Republic and to income from sources from abroad.[26] The rate of corporate tax is 19 %. This tax rate applies to the tax baseless the items under § 34 and § 20 (7) and (8) of the ITA. [27] [28]

The subject of corporate income tax is income from all activities and the processing of all property, unless otherwise stated in Income Tax Act is determined.

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[26] Daň z příjmů právnických osob: Obecné informace. Finanční správa[online].:
https://www.financnisprava.cz/cs/dane/dane/dan-z-prijmu/pravnicke-osoby/obecne-informace
[27] Zákon č. 586/1992 Sb., o daních z příjmů, as amended
[28] Zákon č. 563/1991 Sb., o účetnictví, as amended

4   Methodology

The bachelor thesis describes the newly introduced tool to combat tax evasion in the Czech Republic called Electronic Registration of Sales. The aim of the thesis is to compare the tax collection before and after the introduction of the electronic registration of sales in the Czech Republic. Electronic registration of sales works as a tool for better tax collection of value-added tax and income tax. It is designed to create the same conditions for all entrepreneurs in the business sector.

The bachelor thesis draws largely from internet sources, mainly from the official pages of the Financial Administration and the system itself. This is due to the limited number of literary publications about the electronic registration of sales itself. For more information, I have consulted the work with the person concerned working in the field, which has enriched the whole work with other valuable information.

The thesis aims at tax collection and their contribution to the state budget before and after the introduction of electronic registration of sales. Individual taxes are analyzed and by the comparative method describes the collection of individual taxes and how much of them goes to the state budget. For finding the results are used the time series analysis and the index analysis. The most important in the practical part are the value-added tax and the income tax that are linked to electronic registration of sales. The data was provided by the Financial Administration through their official website. Data are showing the collection of taxes in the state budget gathered up from 2008 until 2017.

4.1 Analysis

Analysis is understood to mean the process of real or imaginary decomposition of an object under investigation into sub-parts. Subsequently, they become subject to further investigation. It is an analysis of properties, relationships, facts moving from the whole to the parts. The analysis expects that in every phenomenon there is a certain system (the relation between the sets that form the whole) and there are stable rules of its functioning. For this reason, the analysis allows to reveal different properties of phenomena and processes. Analysis allows to separate the essential from the insignificant, to distinguish the permanent relationships from the random ones.

4.2 Time series analysis

Time series analysis a set of methods to describe these ranges and possibly to predict their future behavior. The time series represents data that is chronologically arranged. Time series are common in everyday life in fields such as meteorology, physics, ecology, demography, and economics.

The aim of the time series analysis is to determine the appropriate model in order to understand the mechanism generating time series values and understanding the conditions and links involved in creating these data. It is also intended to model simulation and predictions of the following time series data.

4.2.1 Time series are divided according to several aspects

Based on periodicity

Long-term - Time series whose periodicity is one year or more.

Short-term - Time series whose periodicity is less than one year (quarterly, monthly, weekly, etc.)

Based on time viewpoint

Interval - Time series where the size of the pointer depends on the length of the interval at which it is tracked. It is calculated by arithmetic mean or free summation.
Arithmetic mean:

$$\overline{x} = \frac{1}{n}(x_1 + x_2 + \cdots + x_n)$$

(1)

Moment fixed - Time series when values refer to a specific time point. It is done in case of identical distances between individual moments by counting the simple chronological average. The weighted chronological average is used at different distances.
Simple chronological average:

$$\overline{x} = \frac{\frac{1}{2}x_1 + x_2 + \cdots + x_{n-1} + \frac{1}{2}x_n}{n-1}$$

(2)

There is the same distance between moments.

Time => n
Values of time series => $x_1, x_2, \ldots x_n$

Based on types of variables

Original variables - Time series containing values as recorded.

Derived variables - Time series containing values transformed in a certain way. [29] [30]

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[29] HINDLS, Richard. Statistika pro ekonomy. 6. vyd. Praha: Professional Publishing, c2006. ISBN 80-86419-99-1.
[30] Doc. Ing. Jana HANČLOVÁ, CSc., Ing. Lubor TVRDÝ, *Úvod do analýzy časových řad* [online]. Ostrava, 2003 : https://www.fd.cvut.cz/department/k611/PEDAGOG/VSM/7_AnalyzaCasRad.pdf

4.2.2 Trend

The trend we understand the main tendency of the long-term development of the values of the analyzed indicator in time. The trend may be increasing (for example, a number of data on the number of imported passenger cars to the Czech Republic after 1990), decreasing (for example, the share of final consumption of general government in GDP of the Czech Republic) or constant when the values of the indicator of the given time series during the monitored period may fluctuate around a certain, essentially unchanging level. [31]

4.2.3 Time series decomposition

$$y_t^{'} = T_t + P_t + \varepsilon_t$$

(3)

trend (T)

periodic (P) – periodic fluctuations around the trend

    – cyclic

    – seasonal

    – short-term

irregural (ε)

The least-squares method is most used method. The least squares method is used when the linear trend function is selected in the parameters. The least squares method is numerically easy and minimize dispersion of the residual component. [32]

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[31] HINDLS, Richard. *Statistika pro ekonomy*. 6. vyd. Praha: Professional Publishing, c2006. ISBN 80-86419-99-1.

[32] HINDLS, Richard, Ilja NOVÁK a Jara KAŇOKOVÁ. *Metody statistické analýzy pro ekonomy*. Praha: Management Press, 1997. ISBN 80-859-4344-1.

4.2.4 Trend component

Analysis of time series has as one of the most important tasks a description of the tendency of the development of the currently analyzed series. There is a wide range of trend function, such as linear trend, parabolic trend, exponential trend, or logistic trend. [33]

4.2.5 Linear trend function

The trend line is expressed in the form:

$$T_t = a + b.t$$

(4)

A and b are unknown parameters and t = 1,2, ..., n is a time variable. To estimate parameters a and b, is used the function that is linear in terms of parameters, the least squared method that gives the best unplanned estimates.

$$\Sigma y_i = n.a + b.\Sigma t$$

(5)

$$\Sigma y_i t_i = a.\Sigma t + b.\Sigma t^2$$

(6)

The equation of the estimated trend line has the form:

$$T_t = a + b.t \quad {}^{34}$$

(7)

4.3 Index Analysis

Index analysis compares indicators that differ in material, spatial, or temporal terms. The comparison is made by the difference (absolute) or the division (relative). The division of values is obtained by the index, the difference then the absolute difference (absolute increment) of the indicator.[35]

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[33] HINDLS, Richard, Ilja NOVÁK a Jara KAŇOKOVÁ. *Metody statistické analýzy pro ekonomy.* Praha: Management Press, 1997. ISBN 80-859-4344-1.
[34] HINDLS, Richard, Ilja NOVÁK a Jara KAŇOKOVÁ. *Metody statistické analýzy pro ekonomy.* Praha: Management Press, 1997. ISBN 80-859-4344-1.
[35] SVATOŠOVÁ, Libuše a Bohumil KÁBA. *Statistické metody II.* V Praze: Česká zemědělská univerzita, Provozně ekonomická fakulta, 2008. ISBN 978-80-213-1736-9.

Simple individual index of quantity :

$$I = \frac{q_i}{q_{i-1}}$$

<div align="right">(8)</div>

Absolute increment :

$$\Delta = q_i\text{-}q_{i-1}$$

<div align="right">(9)</div>

$$coefficient\ of\ increase\ or\ decrease = \frac{q_i}{q_{i-1}} - 1$$

<div align="right">(10)</div>

$$coefficient\ of\ increase\ or\ decrease\ (\%) = \left(\frac{q_i}{q_{i-1}} - 1 \right) x\ 100$$

<div align="right">(11)</div>

4.4 Comparation

The comparison method deals with the identification of identical and different characteristics of certain phenomena and processes by comparing them. Comparison is a basic method of evaluation, and comparative methods can be used both in knowledge acquisition and in processing. Based on the comparison, conclusions can be drawn about the properties of objects or processes.

For further work can be used basic obtained data for comparison. It is possible in two levels:

- How the object would behave under different conditions (in different environments).
- How different objects would behave under the same conditions.

The comparative method is used in many parts of this work. The comparative method is incorporated in the work where one can take into account similar investigations that took place in the similar areas under study.

In conclusion, based on all the information gathered throughout the whole work, an evaluation of the electronic registration of sales is submitted. Comparison of the tax collection before and after the introduction of electronic registration of sales in the Czech Republic, what contribution to the state budget have individual taxes from the point of view of electronic registration of sales. A collective evaluation of how much revenues have been collected to the state budget from taxes since the introduction of electronic registration of sales and the analysis of whether electronic registration of sales has achieved the expected results or not.

5   Results

5.1   State Budget

The revenues to the state budget in 2017 amounted to 1,273,644.38 million CZK. The state budget consists of tax revenues, received transfers, non-tax revenues, and capital revenues. Capital revenue means income from the sale of long-term property owned by the state. In 2017, tax revenue accounted for 91 % of total government revenue. Tax revenue is the largest part of government revenue which amounted to CZK 1,155,614.20 million in 2017.

Graph 1 : State budget - revenue
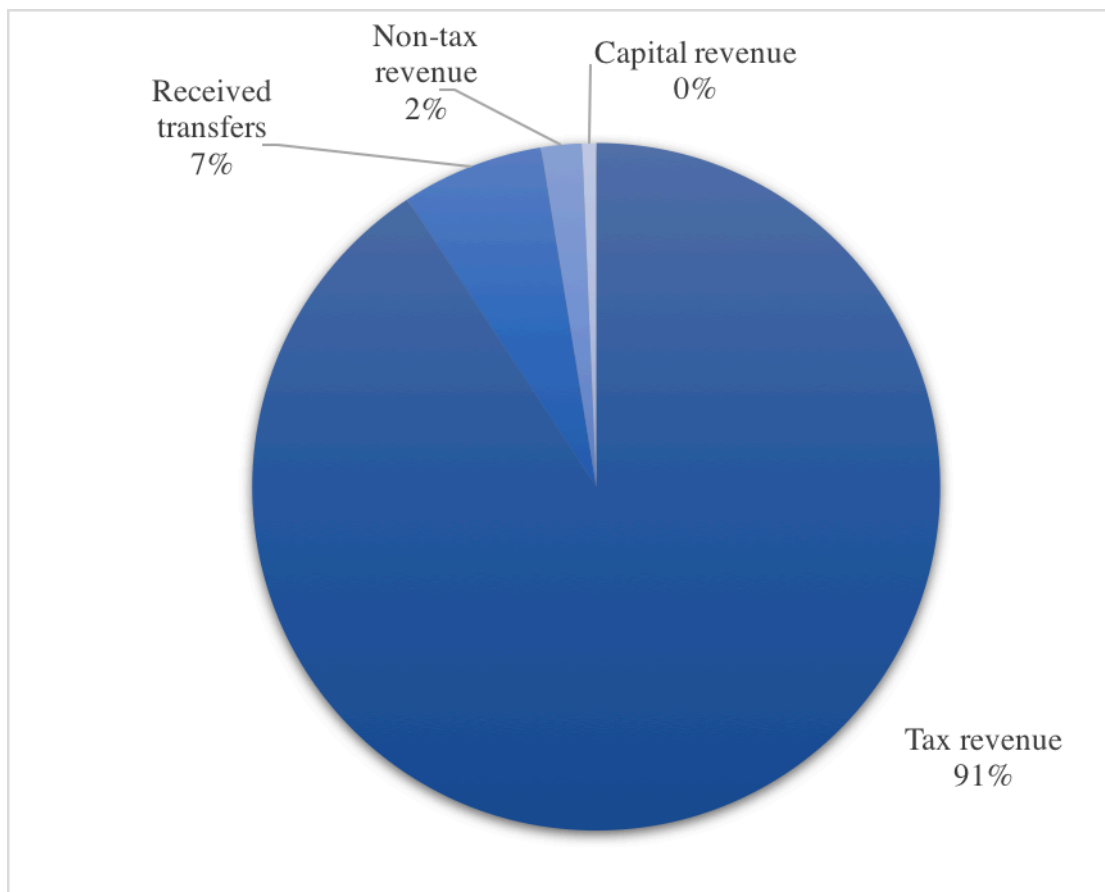
Source : Own input (data source : monitor.statnipokladna.cz, 2017, online)

Table 2: State budget - revenue

Tax revenue	Received transfers	Non-tax revenue	Capital revenue
1,155,614.20 mil. CZK	85,235.45 mil. CZK	24,428.88 mil. CZK	8,365.85 mil. CZK

Source : Own input (data source : monitor.statnipokladna.cz, 2017, online)

Value-added tax, personal income tax and corporate income tax are the only taxes that are influenced by electronic registration of sales. The state budget also includes money from other taxes. These include, for example, consumer tax, road tax, real estate transfer tax (from 1 April 2016 tax on the acquisition of immovable property), real estate tax and others. These taxes are not included in this bachelor thesis.

## 5.2 VAT

5.2.1 Index analysis of VAT

Table 3: Index analysis of VAT

Year	Yi in mil. CZK	Absolute increment in mil. CZK	Index	Coefficient of growth or fall	%
2008	255 190				
2009	253 612	-1 578	0,9938	-0,006	-0,62
2010	269 547	15 935	1,0628	0,063	6,28
2011	275 394	5 847	1,0217	0,022	2,17
2012	278 231	2 837	1,0103	0,010	1,03
2013	308 461	30 230	1,1086	0,109	10,86
2014	322 879	14 418	1,0467	0,047	4,67
2015	331 836	8 957	1,0277	0,028	2,77
2016	349 460	17 624	1,0531	0,053	5,31
2017	381 435	31 975	1,0915	0,091	9,15

Source : Own calculations (data source : Finanční správa, 2017, online)

The long-term tendency of the growth rate of VAT collection in the Czech Republic from 2008 to 2017 is explained in table no. 3. Yi shows the collection of VAT to the state budget. Absolute increment is the difference of the year with the previous year. The index is the division of the VAT collection of the year with the previous year. Using a growth or fall coefficient, we get a value in the following column, which indicates the percentage of how much VAT has increased or decreased. In 2013 there is a noticeable increase over VAT compared to 2012 due to the increase of the basic VAT rate and the reduced VAT rate to 21 % and 15 %, which has not changed until today. A large increase compared to the previous year, by 9.15 %, occurred in 2017. This year, 1st and 2nd phase of electronic registration of sales has started.

Graph 2: Collection of VAT
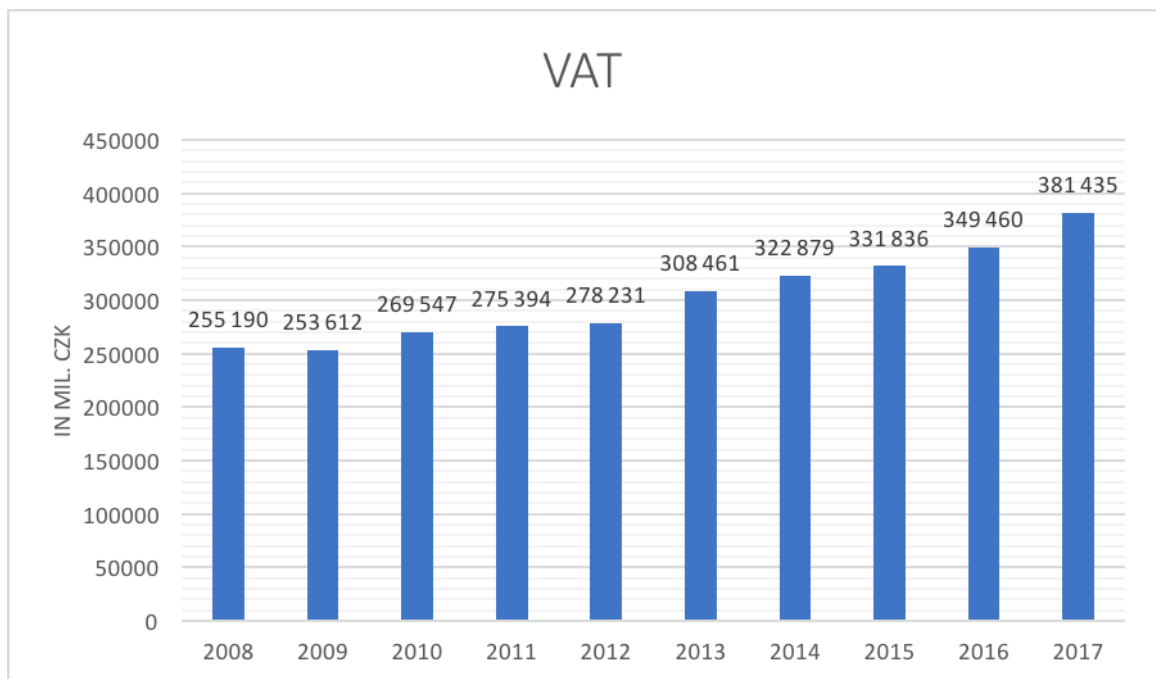
Source: Own input (data source : Finanční správa, 2017, online)

5.2.2 Time series Analysis of VAT

Table 4: Value-Added Tax

Year	Yi in mil. CZK	T	t^2	Yiti	Tt in mil. CZK
2008	255 190	1	1	255 190	240 115
2009	253 612	2	4	507 224	254 002
2010	269 547	3	9	808 641	267 888
2011	275 394	4	16	1 101 576	281 775
2012	278 231	5	25	1 391 155	295 661
2013	308 461	6	36	1 850 763	309 548
2014	322 879	7	49	2 260 151	323 434
2015	331 836	8	64	2 654 688	337 321
2016	349 460	9	81	3 145 140	351 207
2017	381 435	10	100	3 814 348	365 094
Summary	3 026 044	55	385	17 788 876	3 026 044
Average	302 604	5,5	38,5	1 778 888	302 604

Source : Own calculations (data source : Finanční správa, 2017, online)

As can be seen in table no. 4 in 2017, the figure of a total of just under 382 billion CZK of value-added tax. For the year 2017, the real added value of the electronic registration of sales was 4.7 billion CZK after offsetting the negative impact of the VAT rate cut for the catering sector and the economic growth cleaning. This implies that only 1.23% of the income tax was collected.

To the trend line equation in the form **Tt = 226,228.7333 + 13,886.48304*t** was achieved by using the set of equations:

10 a + 55 b = 3,026,043.9
55 a + 385 b = 17,788,876.3

Using the trend line equation, was calculated the values in the table in the column named Tt, which express the trend of the given line, and also the VAT collection prediction for the years 2018, 2019 and 2020. The prediction for the given years in the VAT selection is:

Year 2018: T_{11} = 226,228.7333 + 13,886.48304*11 = 378,980 mil. CZK

Year 2019: T_{12} = 226,228.7333 + 13,886.48304*12 = 392,867 mil. CZK

Year 2020: T_{13} = 226,228.7333 + 13,886.48304*13 = 406,753 mil. CZK

Graph 3 : Trend line of VAT
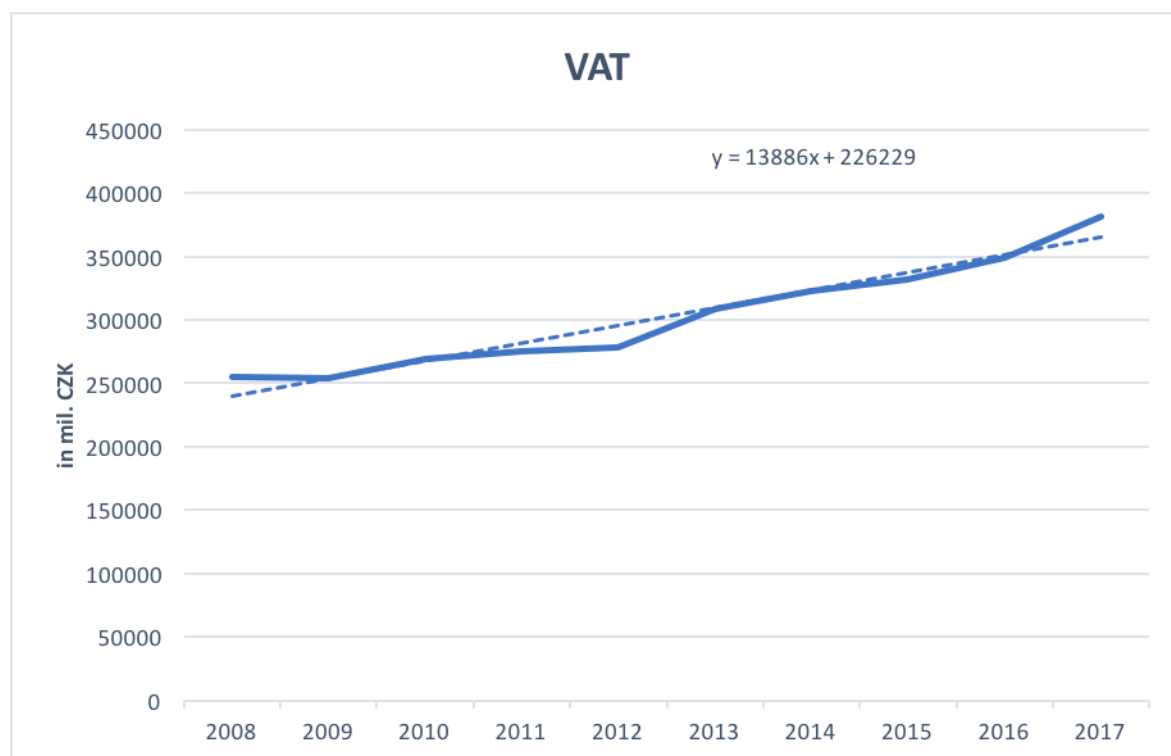
source: Own input (data source : Finanční správa, 2017, online)

5.3 Corporate Income Tax
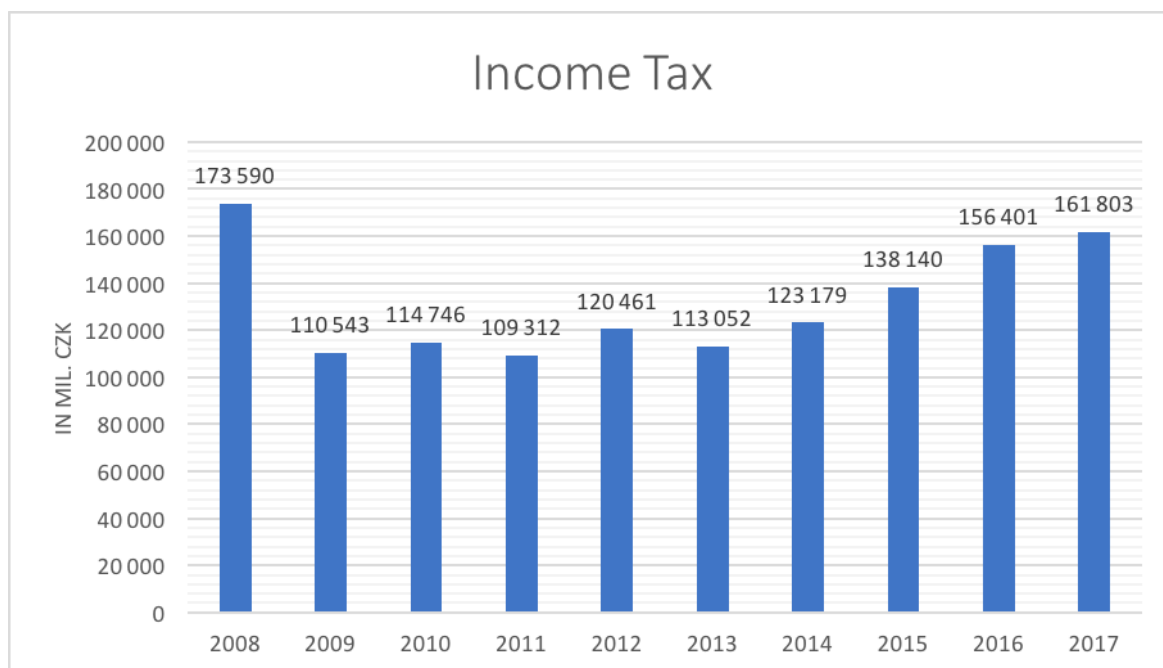
5.3.1 Index analysis of Corporate Income Tax

Table 5: Index analysis of Corporate Income Tax

Year	Yi in mil. CZK	Absolute inkrement in mil. CZK	Index	Coefficient of growth or fall	%
2008	173 590				
2009	110 543	-63 048	0,6368	-0,363	-36,32
2010	114 746	4 203	1,0380	0,038	3,80
2011	109 312	-5 434	0,9526	-0,047	-4,74
2012	120 461	11 149	1,1020	0,102	10,20
2013	113 052	-7 409	0,9385	-0,062	-6,15
2014	123 179	10 127	1,0896	0,090	8,96
2015	138 140	14 961	1,1215	0,121	12,15
2016	156 401	18 261	1,1322	0,132	13,22
2017	161 803	5 402	1,0345	0,035	3,45

Source : Own calculations (data source : Finanční správa, 2017, online)

Table no. 5 shows the growth rate of corporate income tax. In 2009, the impact of the economic crisis on the collection of corporate income tax was great. Collection against the previous year fell by 36 %. At that time, the tax rate decreased from 21 % to 20 %. In 2010, the tax rate decreased again by 1 %. Since then, the tax rate has remained the same. The collection of taxes in the following years fluctuated until in 2014 it started to grow. The growth occurs in today's time however, among the individual years is not as rapid percentage difference.

Graph 4: Collection of Corporate Income Tax

Source: Own input (data source: Finanční správa, 2017, online)

5.3.2 Time series analysis of Corporate Income Tax

Table 6 : Corporate Income Tax

Year	Yi in mil. CZK	T	t^2	Yiti	Tt in mil. CZK
2008	173 590	1	1	173 590	122 139
2009	110 543	2	4	221 085	124 357
2010	114 746	3	9	344 238	126 576
2011	109 312	4	16	437 248	128 795
2012	120 461	5	25	602 303	131 013
2013	113 052	6	36	678 310	133 232
2014	123 179	7	49	862 251	135 451
2015	138 140	8	64	1 105 120	137 669
2016	156 401	9	81	1 407 610	139 888
2017	161 803	10	100	1 618 030	142 107
Summary	1 321 226	55	385	7 449 785	1 321 226
Average	132 123	5,5	38,5	744 979	132 123

Source: Own calculations (data source : Finanční správa, 2017, online)

The set of equations that gave an estimated trend line:

10 a + 55 b = 1,321,226.2
55 a + 385 b = 7,449,785.46

The estimated trend line **Tt = 119,919.8627 + 2,218.683145*t** helps to predict the corporate income tax. The prediction of corporate income tax collections for 2018, 2019 and 2020 are given:

Year 2018: T_{11} = 119,919.8627 + 2,218.683145*11 = 144,325 mil. CZK

Year 2019: T_{12} = 119,919.8627 + 2,218.683145*12 = 146,544 mil. CZK

Year 2020: T_{13} = 119,919.8627 + 2,218.683145*13 = 148,763 mil. CZK

Graph 5: Trend line of Corporate Income Tax
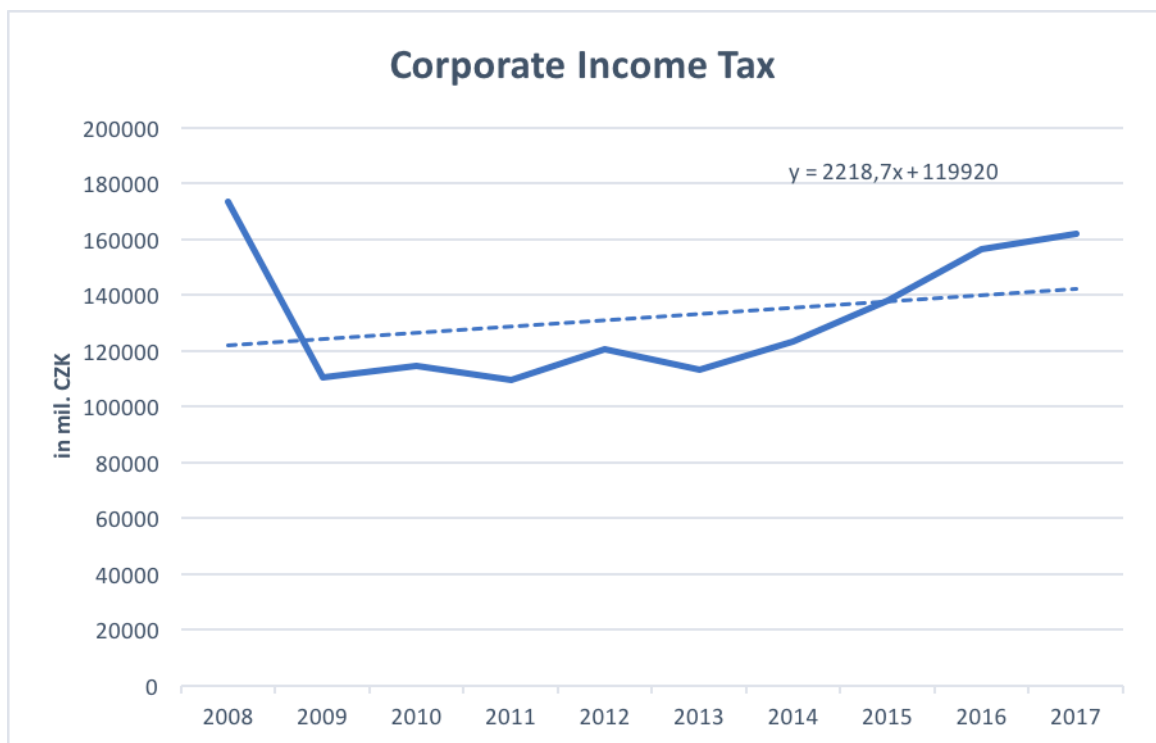
Source: Own input (data source: Finanční správa, 2017, online)

Income tax for persons is much smaller than other taxes, so the data on the money supply to the state budget are not disclosed to it.

5.4 VAT and Corporate Income Tax – the sum

The following table no. 7 contains data after summing up the two taxes that was influenced by the electronic registration of sales.

Table 7: The Sum of Corporate Income Tax and VAT

Year	Yi in mil. CZK	T	t^2	yiti	Tt in mil. CZK
2008	428 780	1	1	428 780	362 254
2009	364 155	2	4	728 309	378 359
2010	384 293	3	9	1 152 879	394 464
2011	384 706	4	16	1 538 824	410 569
2012	398 692	5	25	1 993 458	426 674
2013	421 512	6	36	2 529 073	442 780
2014	446 057	7	49	3 122 402	458 885
2015	469 976	8	64	3 759 808	474 990
2016	505 861	9	81	4 552 750	491 095
2017	543 238	10	100	5 432 378	507 200
Summary	4 347 270	55	385	25 238 662	4 347 270
Average	434 727	5,5	38,5	2 523 866	434 727

Source : Own calcutations (data source : Finanční správa, 2017, online)

5.5 All collected taxes

Revenues to the state budget for all taxes collected in the Czech Republic for the given periods.
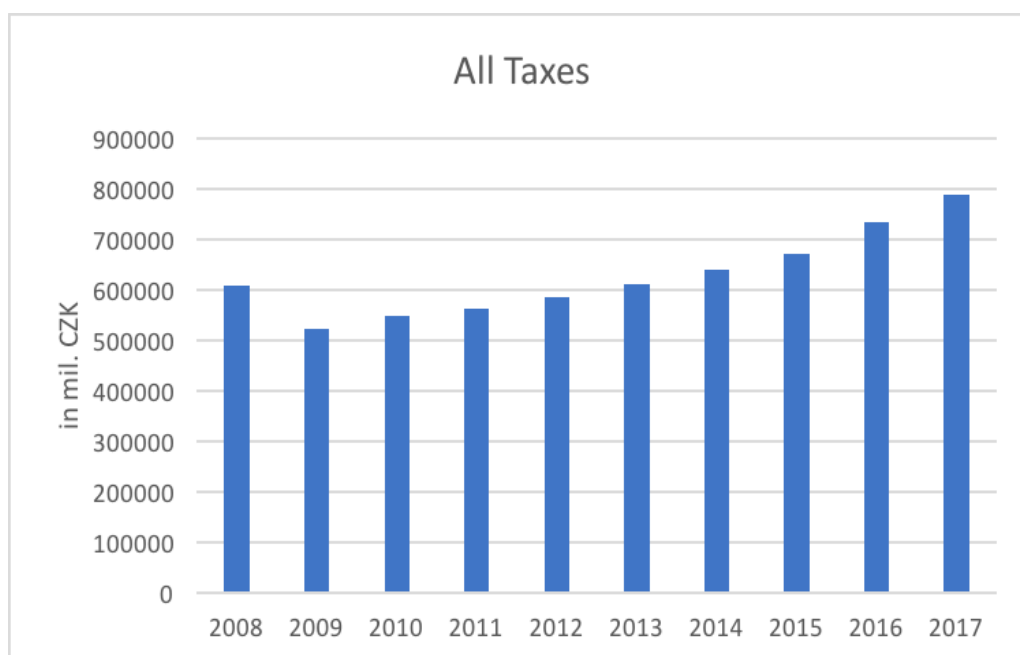
5.5.1 Index analysis of all collected taxes

Table 8: Index analysis of all collected taxes

Year	Yi in mil. CZK	Absolute inkrement in mil. CZK	Index	Coefficient of growth or fall	%
2008	606 896				
2009	522 950	-83 946	0,8617	-0,138	-13,83
2010	548 432	25 482	1,0487	0,049	4,87
2011	561 388	12 956	1,0236	0,024	2,36
2012	583 746	22 358	1,0398	0,040	3,98
2013	610 757	27 011	1,0463	0,046	4,63
2014	639 199	28 442	1,0466	0,047	4,66
2015	670 396	31 197	1,0488	0,049	4,88
2016	732 197	61 801	1,0922	0,092	9,22
2017	786 636	54 439	1,0744	0,074	7,44

Source : Own calculations (data source : Finanční správa, 2017, online)

Table no. 8 shows the long-term tendency of the growth rate of revenues to the state budget from all collected taxes in the Czech Republic. As a result of the economic crisis, in 2009, the tax revenues to the state budget fell by almost 14 %. Since 2009, tax revenue has grown regularly. In 2016, the introduction of the control statement and the 1st phase of the electronic registration of sales can be seen. In 2017, after the introduction of 2nd phase, the tax collection increased.

Graph 6 : Tax collection

All Taxes

Source: Own input (data source : Finanční správa, 2017, online)

### 5.5.2 Time series analysis of all collected taxes

Table 9: All collected taxes

Year	Yi in mil. CZK	T	t^2	yiti	Tt in mil. CZK
2008	606 896	1	1	606 896	518 460
2009	522 950	2	4	1 045 900	542 416
2010	548 432	3	9	1 645 296	566 371
2011	561 388	4	16	2 245 552	590 326
2012	583 746	5	25	2 918 730	614 282
2013	610 757	6	36	3 664 542	638 237
2014	639 199	7	49	4 474 393	662 193
2015	670 396	8	64	5 363 168	686 148
2016	732 197	9	81	6 589 773	710 104
2017	786 636	10	100	7 866 360	734 059
Summary	6 262 597	55	385	36 420 610	6 262 597
Average	626 260	5,5	38,5	3 642 061	626 260

Source : Own calculations (data source : Finanční správa, 2017, online)

Graph no. 7 shows revenue to the state budget from 2008 to 2017 on all taxes. The blue line is the sum of VAT and income tax, and the orange line shows the sum of all taxes contributing to the state budget. Looking at the graph, you can see almost exactly copying the sum of VAT with income tax and total tax collection. It is therefore clear that VAT and income tax constitute the majority of the total tax collection.

Graph 7: The sum of Corporate Income Tax with VAT vs. all collected taxes
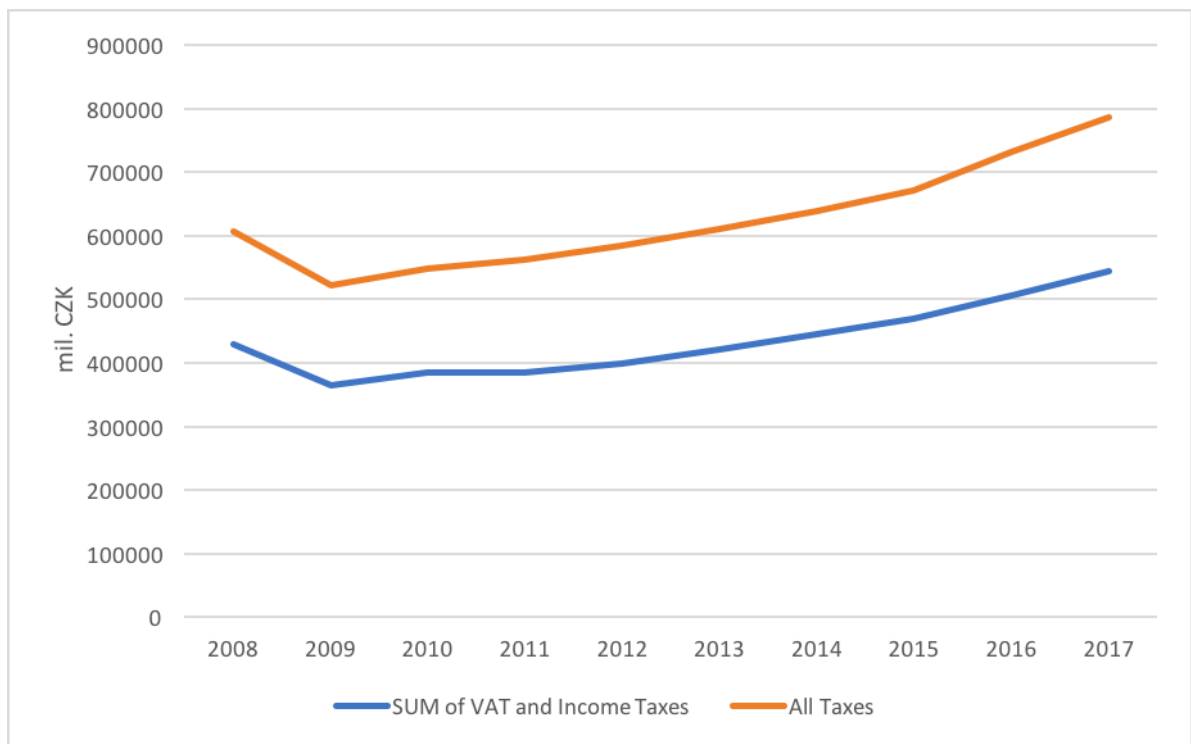
Source: Own input (data source : Finanční správa, 2017, online)

Apart from the exception in 2009, when tax collection declined due to the economic crisis, it increased evenly over the coming years. From 2016, it is clear to record the control statement and the subsequent introduction of the electronic registration of sales (1st and 2nd phase). Since that year, it can be seen that the curve is rising faster, which means higher selections and the equalization of the economic environment.

Furthermore, in the case of the introduction of the 3rd and 4th phase of electronic registration of sales, a further increase in the revenues to the state budget can be expected.

By calculating the set of equations were reached the results of estimated trend line:

10 a + 55 b = 6,262,597
55 a + 385 b = 36,420,610

From the set of equations it was found that a = 494,504.6 and b = 23,955.47273. Using the equation of the estimated trend line in the form **Tt = 494,504.6 + 23,955.47273*t**, it is possible to obtain the values in Table no. 9, As well as the prediction of revenues to the state budget of the Czech Republic from the taxes for 2018, 2019 and 2020. From the calculated values is obvious, that revenues to the state budget of the Czech Republic from taxes are constantly slightly increasing.
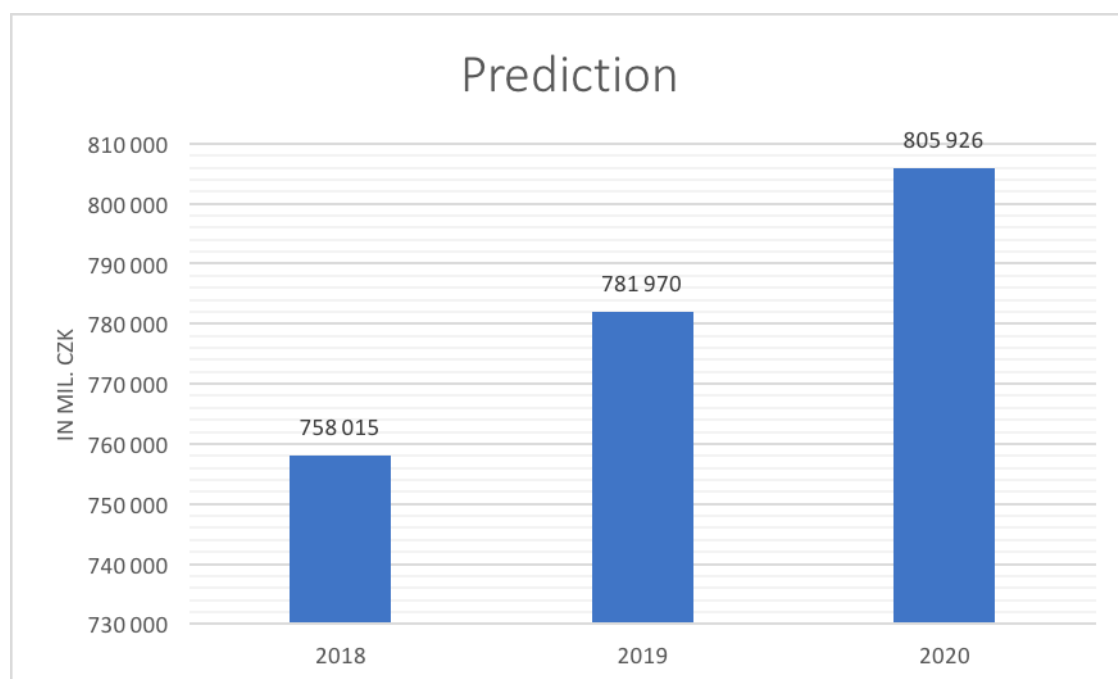
Prediction of tax collection to the state budget.

Year 2018: T_{11} = 494,504.6 + 23,955.47273 * 11 = 758,015 mil. CZK

Year 2019: T_{12} = 494,504.6 + 23,955.47273 * 12 = 781,970 mil. CZK

Year 2020: T_{13} = 494,504.6 + 23,955.47273 * 13 = 805,926 mil CZK
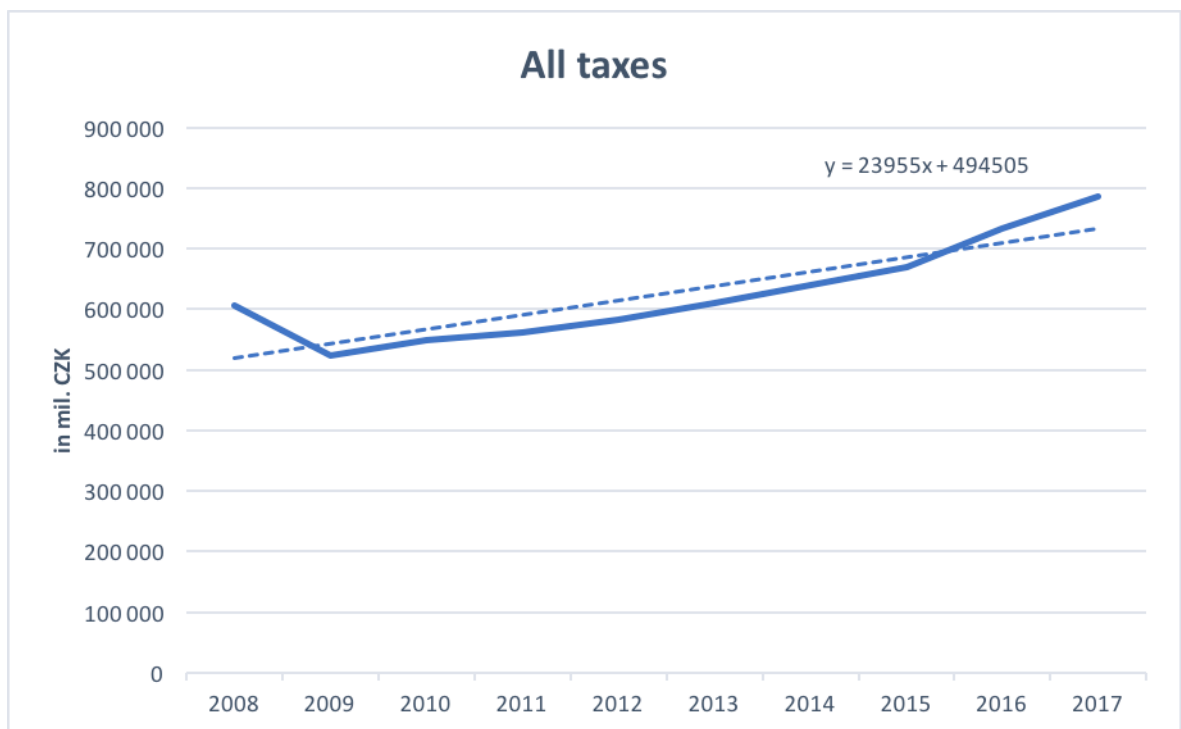
Graph 8: Prediction of taxes collection

Source: Own input (data source : Finanční správa, 2017, online)

Graph no. 8 shows the prediction of the collection of all taxes to the state budget for the years 2018, 2019 and 2020.

Graph no. 8 shows values after putting to the estimated trend line **Tt = 494,504.6 + 23,955.47273*t**.

Graph 9: Trendline of all taxes

6 Discussion and Conclusion

The aim of this bachelor thesis was to evaluate the tax collection before and after the introduction of electronic registration of sales in the Czech Republic. The comparison method, time series analysis and index analysis were used for finding the results.

First of all, it is necessary to remind what is the electronic registration of sales. The general public shares the misconception about this financial tool that it is the payment of funds to the state. The truth is different. Electronic registration of sales is an electronic system in which entrepreneurs send online details of any cash transaction. These data of each registered taxpayer are compared with the data referred in his value-added tax return (in case of the VAT payers) or with the data provided in the income tax return. Electronic registration of sales was introduced on 1st December 2016. In the bachelor thesis is taken into account only 1st and 2nd phase, because 3rd and 4th phase was already suspended in the very beginning. Its implementation is planned during the year 2019. The bachelor thesis includes real data from 2008 to 2017 obtained from the official pages of the Financial Administration of the Czech Republic.

The revenues to the state budget consist of tax revenues, received transfers, non-tax revenues, and capital revenues. The largest part of the revenues to the state budget, in this case 91 % are the taxes that the bachelor thesis deals with. In 2017 tax revenues amounted to CZK 1.155,614 million. Taxes that are affected by electronic registration of sales are value-added tax (VAT) and income tax.

The index analysis, which compared the tax collection data for the given year with the previous year, can be derived from the long-term trend of the growth of VAT collection in the Czech Republic. A substantial increase in VAT collection was made in 2013, by increasing the reduced rate and the basic rate to 15 %, 21 % respectivelly. In 2013, therefore, the VAT collection increased by almost 11% compared to 2012. A further significant increase in VAT collection, by 9 %, occurred in 2017. This year, there were already 1st and 2nd phase of electronic registration of sales. Corporate income tax has fallen sharply over the ten-year period. A noticeable drop in the collection of corporate income tax is noted in 2009 due to the economic crisis. Collection compared to 2008 decreased by 36 %. At that time, the tax rate has fallen from 21 % to 20 %. Since 2010, the tax rate is 19 %. In the following years, the corporate income tax fluctuated and since 2014 it has begun to rise. The growth has been occurring until today's time however, between the years is not so big percentage difference.

The time series analysis for VAT shows a linear trend over 10 years. It can be said that the VAT collection has been rising for whole 10 years. In 2016, the electronic registration of sales worked for only a month, so the difference is not very noticeable. Since 2016 VAT payers must also submit the control statement, which also contributed to VAT collection. In 2017, when the electronic registration of sales has begun the first two phases, it was collected almost CZK 382 billion. After offsetting the negative impact, the VAT rate cut for the catering sector and the economic growth cleaning it was found that the real benefit of the electronic registration of sales was CZK 4.7 billion, that is 1.23% of the total VAT collection. In the case of corporate income tax, real data differ from the linear trend. As a result of the economic crisis in 2009, the collection of corporate income tax has sharply fallen. From 2009 to 2015, the choice of corporate tax was below the linear trend. In 2016, the linear trend was exceeded due to the introduction of control statement and the introduction of electronic registration of sales.

When comparing the total tax collection to the state budget and the sum of the VAT and corporate income tax collection, it is clear that these two taxes form the largest part of the tax revenue. Again, there is a noticeable decline in 2009 due to the economic crisis, when tax revenues to the state budget fell by 14 %. In the following years, revenues to the state budget have continued to rise. Since 2016, there is noticeable the introduction of control statement and the subsequent introduction of the electronic registration of sales (1st and 2nd phase). Another increase is expected after the start of the 3rd and 4th phase.

For all time series analysis calculations, there are predictions for years 2018, 2019, and 2020. Hopes in their fulfillment and in the increment of predetermined values.

After all the calculations, it can be seen that the electronic registration of sales has benefit to the state budget, but not as big as was originally thought. This is also caused by the suspension of the 3rd and 4th phase. In the year 2019, these two phases of the electronic registration of sales are likely to be launched and, therefore, an increase in revenue from the collection of taxes to the state budget may be expected.

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