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MASTER'S THESIS

ON THE TOPIC:

ANALYSIS OF TAX REVENUES AS THE BASIS OF BUDGET REVENUE

Master's degree

Specialty 072 - "Finance, Banking and Insurance"

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ABSTRACT

Master's thesis: 36 p., 21 figures, 10 tabl., 25 sources.

The aim of the work is a comparative study of theoretical and practical approaches to building the structure of tax revenues of the budget of Ukraine.

The subject of research is the financial relations between taxpayers and the state, which arise in the process of forming the revenue side of the budget of Ukraine.

The object of study is the tax revenues of the Consolidated Budget of Ukraine.

Research methods. The work used concrete and abstract methods - to understand the organization and procedure of tax policy, a systematic approach to disclose the formation of tax revenues of the Consolidated Budget, methods of economic and mathematical modeling to predict the size of the Consolidated Budget revenues from basic taxes.

Work structure. The first section considers the composition and structure of budget revenues of Ukraine. The tendencies of formation of incomes of the Consolidated budget of Ukraine in 2010-2019 are analyzed. In the second section the structural-dynamic and causal analysis of tax receipts to the Consolidated budget of Ukraine in 2010-2019 and the tax changes carried out in these years is carried out. In the third section the mathematical modeling of dependence of volume of incomes of the Consolidated budget on volumes of the basic taxes is carried out. The main problems of tax policy are generalized and the ways of their solution are revealed.

REVENUES, TAX POLICY, BUDGET, TAX BUDGET REVENUES,
FORECASTING.

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INTRODUCTION

Relevance of work. One of the leading links in the financial system of society is the budget. The state budget is an integral part of market relations and at the same time an important tool for implementing public policy. Among the priority tasks of the state, the leading place is occupied by filling the revenue part of the budget, building an optimal model of the tax system and strict compliance with tax legislation.

Now the problem is to create an effective mechanism for defining new principles of formation of the state budget of Ukraine, clear functions and powers of all levels of government, and hence the main costs and revenues of each type of budget between different parts of the budget system.

The purpose and objectives of the work. The aim of the work is a comparative study of theoretical and practical approaches to building the structure of tax revenues of the budget of Ukraine.

Tasks of this work:

- consider the composition and structure of budget revenues of Ukraine;
- to conduct a structural analysis of the revenue base of the budget of Ukraine for 2010-2019;
- perform a structural and dynamic analysis of revenues from direct and indirect taxes, rents and property taxes for 2010-2019;
- to carry out an empirical study of the impact of tax revenues on the revenues of the Consolidated Budget of Ukraine from 1996 to 2019;
- to study the main problems of tax policy in Ukraine and to consider theoretical and practical ways to solve them.

The subject of the study is the financial relations between taxpayers and the state, which arise in the process of forming the revenue side of the budget of Ukraine.

The object of study is the tax revenues of the Consolidated Budget of Ukraine.

Work structure. *The first section* considers the composition and structure of budget revenues of Ukraine. The tendencies of formation of incomes of the Consolidated budget of Ukraine in 2010-2019 are analyzed. *In the second section* the structural-dynamic and causal analysis of tax receipts to the Consolidated budget of Ukraine in 2010-2019 and the tax changes carried out in these years is carried out. *In the third section* the mathematical modeling of dependence of volume of incomes of the Consolidated budget on volumes of the basic taxes is carried out. The main problems of tax policy are generalized and the ways of their solution are revealed.

Research methods. The work used concrete and abstract methods - to understand the organization and procedure of tax policy, a systematic approach to disclose the formation of tax revenues of the Consolidated Budget, methods of economic and mathematical modeling to predict the size of the Consolidated Budget revenues from basic taxes.

Factual basis of work: legislative and normative acts of Ukraine and the EU, data from the State Treasury Service, the Ministry of Finance, monographic literature, statistical yearbooks, periodicals and materials of educational literature.

1 THEORETICAL FOUNDATIONS OF THE REVENUE SIDE OF THE BUDGET

1.1 Composition and structure of budget revenues of Ukraine

Budget revenues have a great impact on the development of society and that is why revenues are the financial base of any state.

Many researchers give the definition of budget revenues, but considered writing great statement that this economic relationship arising between the state on the one hand and the other hand between corporations and individuals[2,5].

Classification of state and local budget revenues:

- ✓ *«in terms of content:* revenues of the general fund and revenues of the special fund of the budget;
- ✓ *for groups:* tax revenues, non-tax revenues, income from capital transactions, trust funds, intergovernmental transfers;
- ✓ *by types:* taxes, payments, fees, deductions, dividends, receipts, property income, administrative fees and payments, non-commercial and incidental incomes, revenues from state and confiscated property, own revenues of budgetary institutions, revenues from the sale of fixed capital, land , intangible assets, official transfers;
- ✓ *in relation to the budget system:* revenues received by the state budget, revenues received by local budgets, mixed revenues, revenues to state trust funds;
- ✓ *on the organizational structure and results of the distribution between the links of the budget system:* own, fixed, regulatory;
- ✓ *regarding the completeness of crediting to budgets:* incomes that are credited in full and incomes that are credited in part;
- ✓ *concerning methods of attraction:* incomes which are involved by a tax method, a non-tax method and a method of interbudgetary transfers;
- ✓ *for sources:* income, the sources of which are price, cost, profit, income;

- ✓ *regarding the frequency of enrollment:* systematic income, one-time income;
- ✓ *in relation to the object of collection:* income, the object of collection of which is value added, income, profit, property, land, natural resources, services;
- ✓ *in relation to the subjects of collection:* income from legal entities, income from individuals;
- ✓ *regarding the citizenship of the subjects:* income paid by residents and non-residents»[5,16].

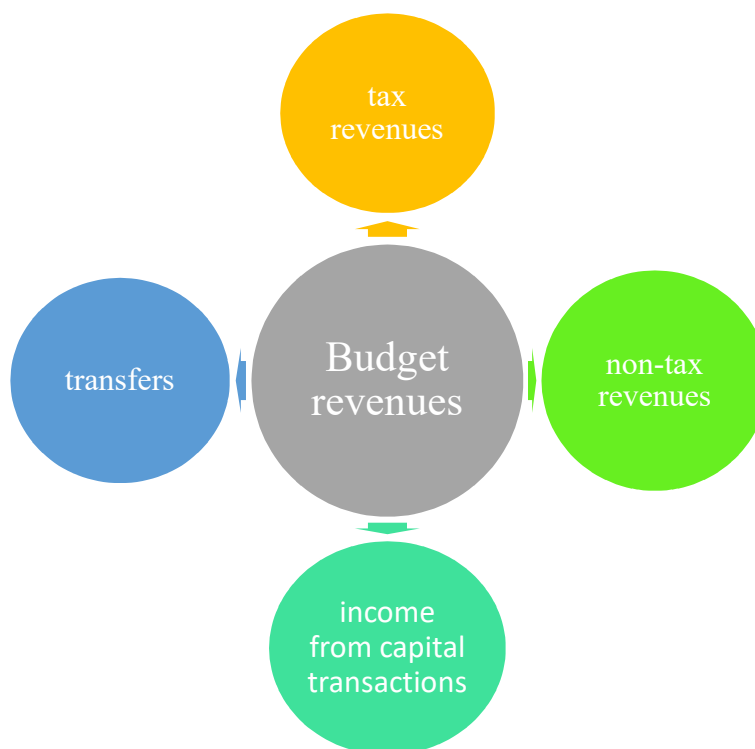


Figure 1.1 – Sections of the classification of budget revenues (formed by the author on the basis of [18])

Tax revenues are national and local taxes and fees established by the laws of Ukraine [18].

Non-tax revenues are distinguished:



Figure 1.2 – Non-tax revenues (generated by the author)

«Transfers - funds received from other public authorities, local governments, other states or international organizations on a gratuitous and non-refundable basis»[22].

There are seven main methods of generating state budget revenues:

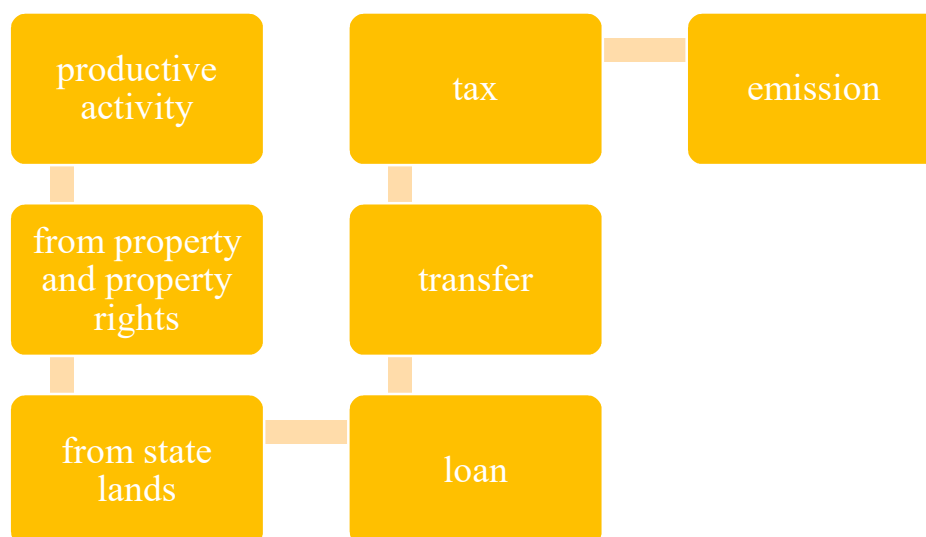


Figure 1.3 – The main methods of forming budget revenues (formed by the author on the basis of [22])

If we consider the method of generating income from productive activities, and this is entrepreneurial activity, public services, the budget includes: part of the profits of state enterprises, state duty and compensatory income[16].

Filling the budget with constant revenues from the lease of state property and corporate rights of the state, as well as such revenues as the sale of state property - is a method of formation of property and property rights [13, 22].

The process of obtaining revenues from state lands makes it possible to provide funds for resources and budgeting [5].

Using the tax method, the state fills the tax budget and pays taxes, which is% of budget revenues [10].

The need to balance budgets when it comes to intergovernmental issues has led to the use of the transfer method to generate budget revenues, which have been organized in the central transfer fund for foreign and international governmental associations [2].

The loan method of income is different, and unlike all other types of income generation, it is a temporary income that can be used as income from internal and external funds [22].

The last way to replenish revenues is the issue method, the essence of which is to attract emission funds, which are additionally issued to cover government expenditures in case of insufficient volume by all previous methods [18].

But it has imperfections because it could be the result of inflation. The Budget Code of Ukraine prohibits the use of this method.

Methods and sources of budget revenues:

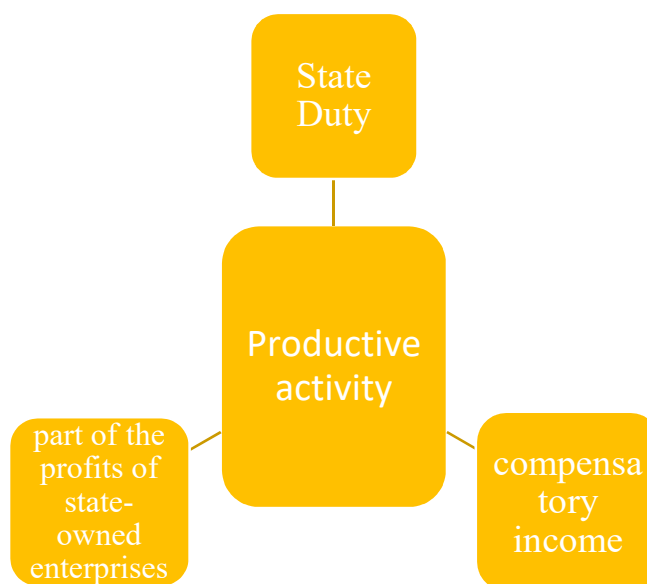


Figure 1.4. – Types of income by the method of productive activity (formed by the author)

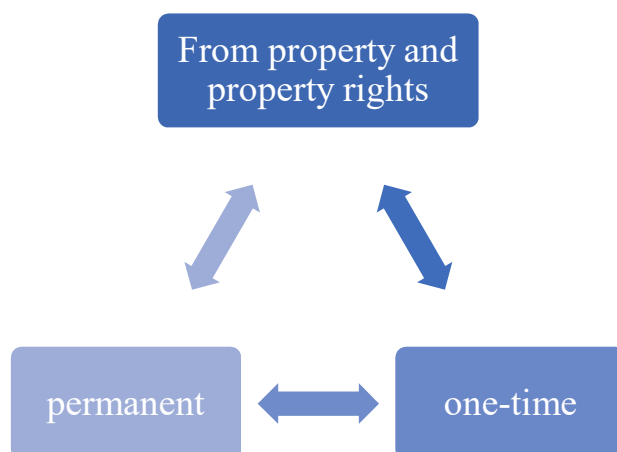


Figure 1.5 – Types of income by the method of property and property rights (formed by the author)

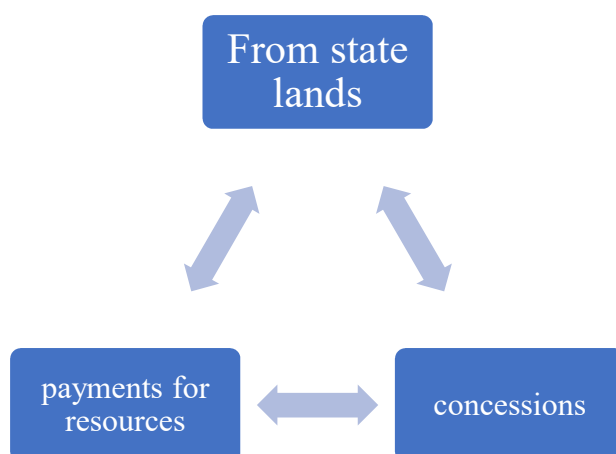


Figure 1.6 – Types of income by the method of state lands (formed by the author)

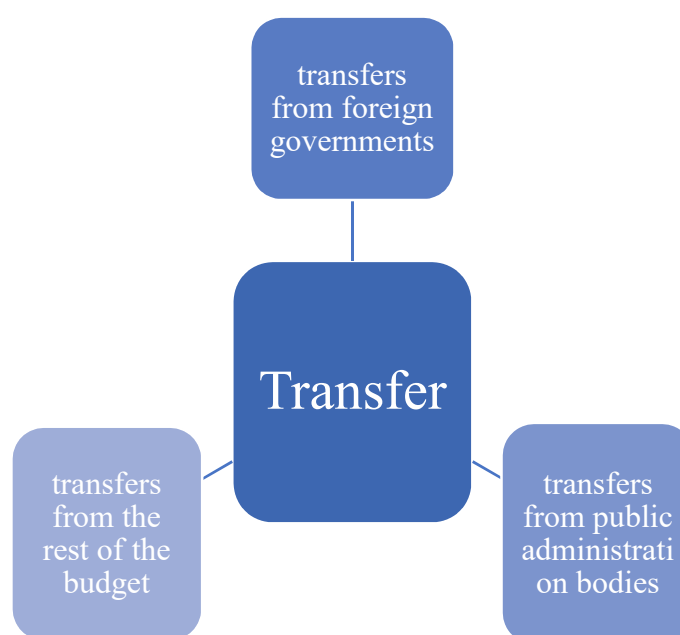


Figure 1. --Types of income by transfer method (formed by the author)

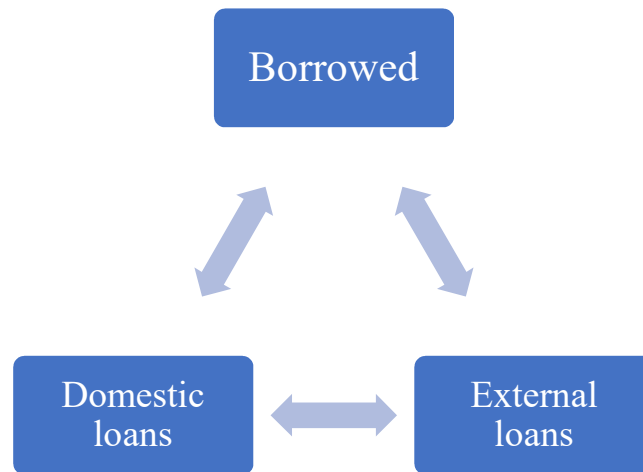


Figure 1.8 –Types of income by borrowing method (generated by the author)

According to the tax method, the type of income will be taxes, and according to the issue method - issue income [12].

Of all the above methods, the leading one is considered to be tax. But despite the variety, all of these methods are closely related.

The main amount of budget revenues in GDP. In the initial phase of GDP distribution, the government becomes a participant in material production, receives consumer taxes, which are part of the price of services and goods (VAT, excise tax, duty) [18].

Thus, budget revenue depends on the size of GDP. That is why the most important way to increase income is rapid growth.

1.2 Structural analysis of the revenue base of the budget of Ukraine

Every state needs financial resources to ensure the observance of functions by all state bodies and to solve the problems of citizens, and to ensure the stable development of the state. The Consolidated Budget of Ukraine is used to analyze and forecast the economic development of the country.

Its sources of funding are tax revenues, which according to official data is 80% of the Consolidated Budget. Thus, we will investigate the dynamics and

structure of sources of formation of the Consolidated Budget of Ukraine. To do this, we will build a table that will clearly show how much money has come to the budgets over the past 10 years.

Table 1.2 – Revenues of the state, consolidated and local budgets for 2010-2019 [6,23]

Indicators	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
State budget (excluding intergovernmental transfers), UAH billion, including	233,99	311,89	344,7	337,6	356,97	531,55	612,11	787,47	920,81	998,34
general fund	201,07	263,34	288,5	290,1	308,7	501,09	571,61	694,51	828,21	879,83
special fund	32,92	48,56	56,25	47,51	46,27	30,46	40,51	92,96	92,59	118,51
Consolidated budget, UAH billion	314,51	398,55	445,6	442,8	456,07	652,03	782,86	1017	1184,3	1289,9
general fund	268,72	334,73	369,7	375	388,93	602,66	718,26	887,18	1062,3	1148,2
special fund	45,79	63,82	75,85	67,79	67,14	49,37	64,6	129,78	121,97	141,66
Local budget (excluding intergovernmental transfers), UAH billion, including	159,39	181,53	225,3	221	231,7	294,46	366,14	502,09	562,42	560,53
general fund	140,02	161,14	195,8	198	197,01	274,77	341,35	453,95	519,14	519,53
special fund	19,38	20,39	29,44	23,01	34,69	19,69	24,78	48,15	43,28	41,01

From the table we can see how tax revenues grew each year. Since 2010, revenues in the state budget amounted to UAH 233.99 billion, and in 2015, increased by UAH 297.56 billion, an increase of 2 times. And then revenues grew even more and in 2019 amounted to UAH 998.34 billion. If we compare the growth of tax revenues in 2018 and 2019, this is an increase of 77.53 billion UAH, which is also quite a significant increase.

If we compare tax revenues to the local budget, in 2010 it was UAH 159.39 billion, in 2015 it was UAH 294.46 billion, and in 2019 it is UAH 560.53 billion.

The consolidated budget received UAH 314.51 billion in 2010, UAH 652.03 billion in 2015, and UAH 1,289.9 billion in 2019. If we compare the growth of 2018 and 2019, the revenues increased by UAH 105.6 billion.

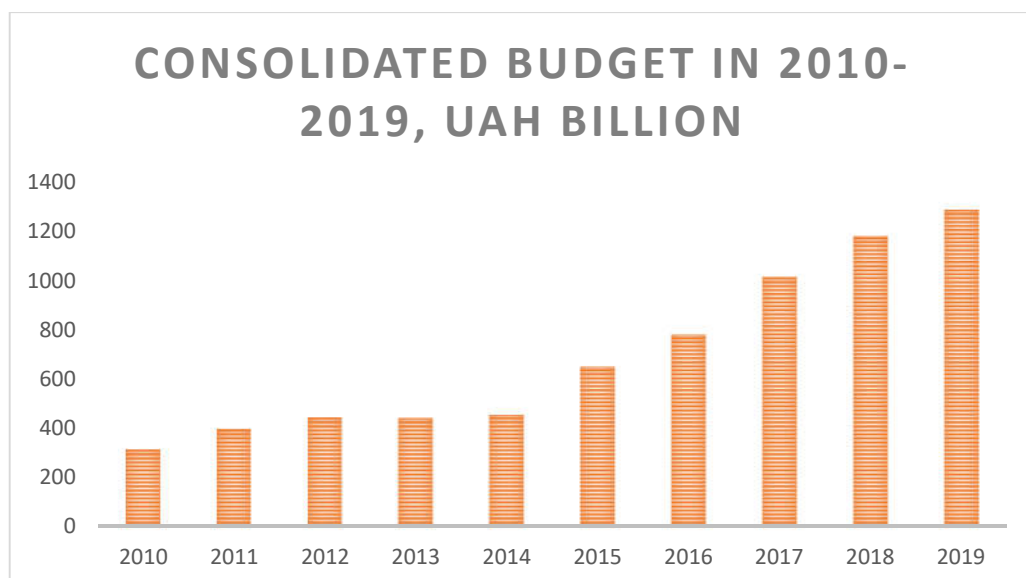


Figure 1.9 – Dynamics of consolidated budget revenues in 2010-2019 (built by the author on the basis of initial data)

2 ANALYSIS OF TAX REVENUES OF THE REVENUE PART OF THE CONSOLIDATED BUDGET OF UKRAINE

2.1 Analysis of tax revenues from direct taxes

Let's consider tax revenues separately and determine which taxes make up the majority of budget revenues. From Table 2.1 we see a rapid increase in all tax revenues to the Consolidated Budget of Ukraine.

Table 2. – Consolidated budget revenues for 2010-2019 [6,23]

Name of tax, UAH billion	Years									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Corporate income tax	40,36	55,09	55,79	54,99	40,2	39,05	60,22	73,39	106,18	117,32
Income Tax of Individuals	51,03	60,22	68,09	72,15	75,2	99,98	138,78	185,69	229,9	275,46

In 2010, the income tax amounted to UAH 40.36 billion, in 2013 we see a sharp increase to UAH 54.99 billion, but in 2014 and 2015 it fell, namely UAH 40.2 and 39.05 billion. Since 2016, we see a rapid increase and it is UAH 60.22 billion, and in 2019 it is UAH 117.32 billion (Fig. 2.1).

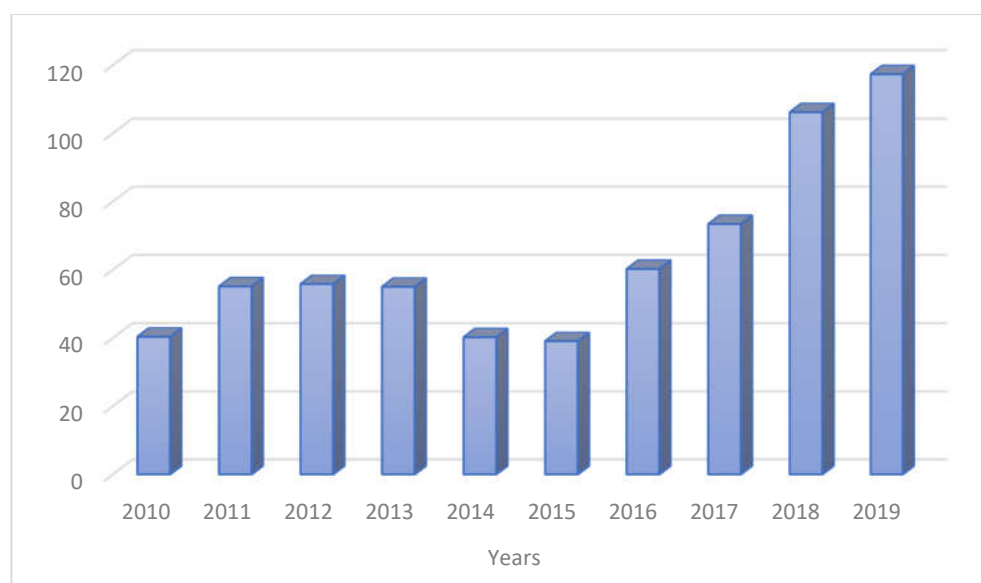


Figure 2.1– Dynamics of annual income tax revenues, UAH billion (constructed by the author on the basis of initial data)

If we follow how the personal income tax has changed (Fig. 2.2), then in 2010 it was UAH 51.03 billion and further every year, the figures are growing. In 2014 it is UAH 75.20 billion, in 2016 it is UAH 138.78 billion, and in 2019 it is UAH 275.46 billion. Most of the revenue comes from personal income tax.

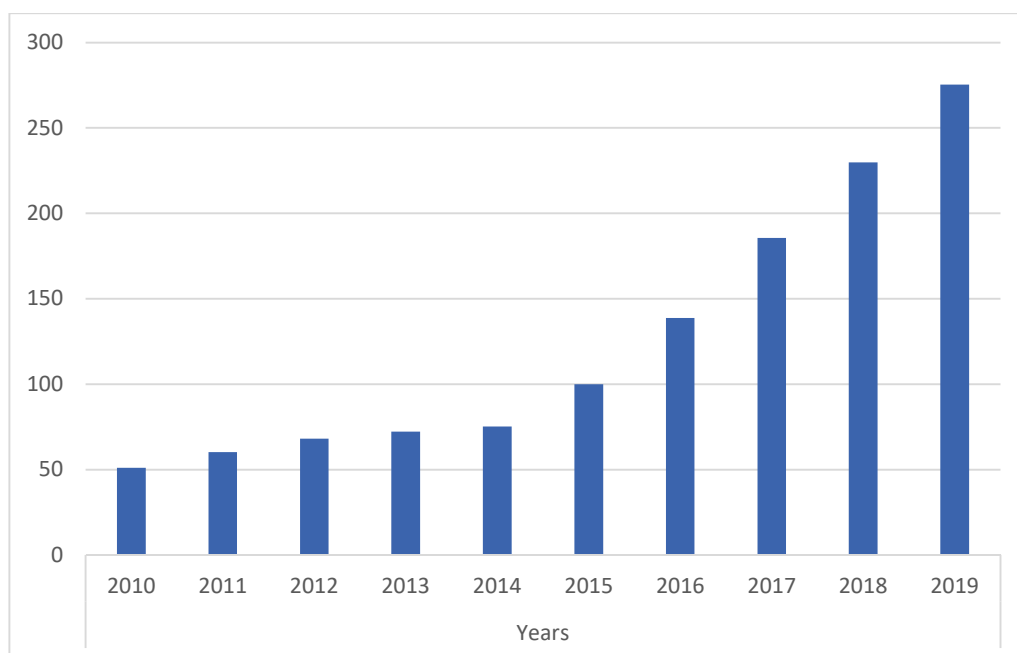


Figure 2.2 – Dynamics of annual personal income tax revenues, UAH billion
(constructed by the author on the basis of initial data)

2.2 Analysis of tax revenues from indirect taxes

Consider the dynamics of revenues from indirect taxes (Table 2.2). Among indirect taxes, the largest value is value added tax (VAT).

The data show how the value added tax has changed (Fig. 2.3), . In 2010, VAT amounted to UAH 86.31 billion, then there was an increase of UAH 52.52 billion and in 2012 it amounted to UAH 138.83 billion. In 2013, there was a slight decline to UAH 128.26 billion. But in 2017, the indicators leveled off and amounted to 313.98 billion UAH and by 2019 rose only higher.

Table 2.2 – Consolidated budget revenues for 2010-2019, UAH billion [6,17,23]

Name of tax, UAH billion	Years									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
VAT	86,31	130,09	138,83	128,26	139,02	178,45	235,51	313,98	374,51	378,69
Excise tax on goods produced in Ukraine	23,72	26,09	28,66	27,72	28,24	38,78	55,11	67,77	72,69	71,34
Excise tax on goods imported into Ukraine	4,6	7,8	9,77	8,9	16,86	24,33	35,01	47,67	54,06	59,41
Import duty	8,56	10,46	12,99	13,26	12,38	39,88	20	23,89	26,56	29,86
Export duty	0,29	1,31	0,2	0,07	0,2	0,42	0,37	0,64	0,52	0,23

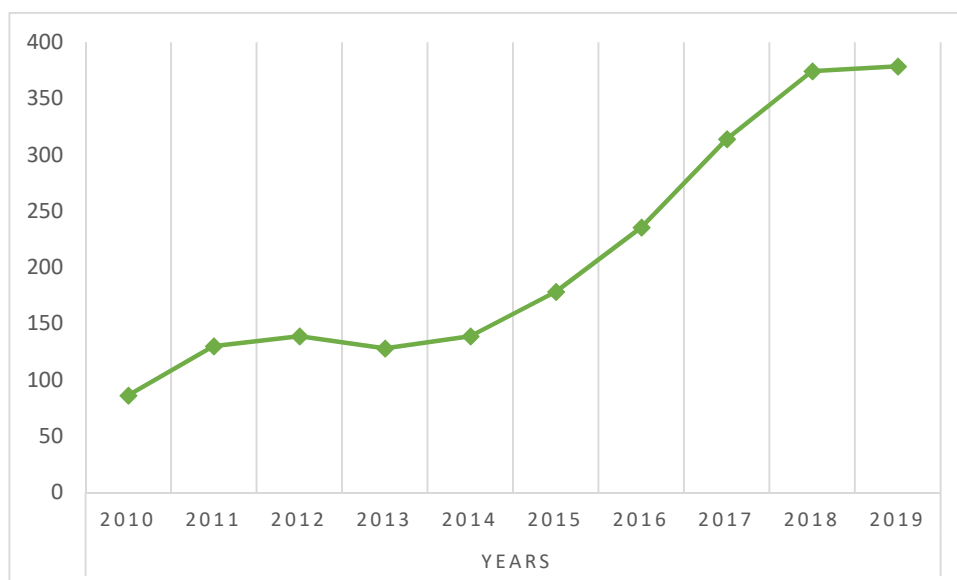


Figure 2.3 – Dynamics of annual value added tax revenues, UAH billion
(constructed by the author on the basis of initial data)

Excise tax on goods produced in Ukraine increased almost every year, except in 2013 and from UAH 23.72 billion in 2010 gradually rose to UAH 38.78 billion in 2015. And in 2016 began a rapid increase to UAH 71.34 billion (Fig. 2.4).

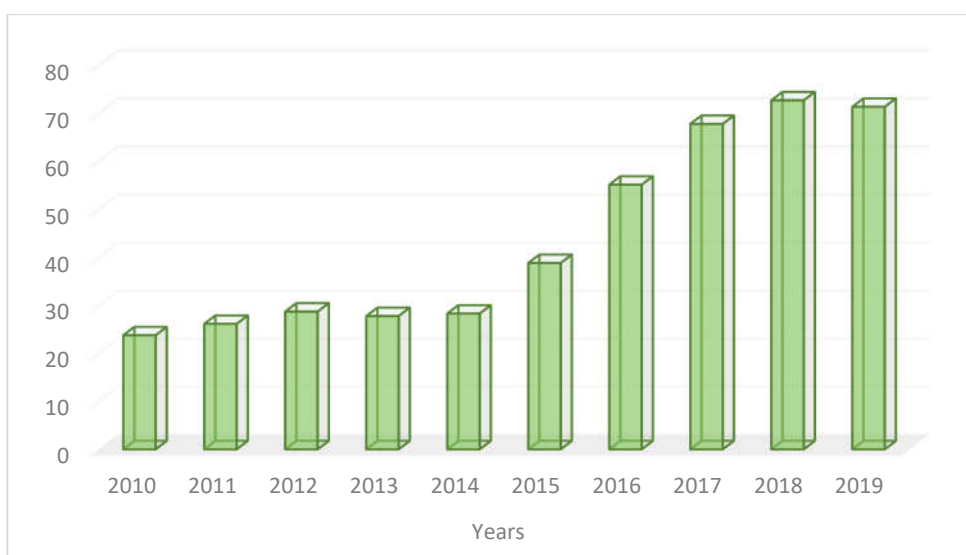


Figure 2.4 – Dynamics of annual excise tax revenues from goods produced in Ukraine, UAH billion (constructed by the author on the basis of initial data)

The structure of excise tax revenues is dominated by revenues from tobacco and tobacco products (Table 2.3, Fig. 2.5).

Table 2.3 –Structure of excise tax on goods produced in Ukraine, UAH billion

Excise tax on goods produced in Ukraine for 2010-2019										
Indexes	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Alcohol	0,05	0,05	0,06	0,06	0,06	0,08	0,09	0,16	0,15	0,18
Alcoholic beverages	5,36	5,18	5,68	5,02	5,49	5,41	6,4	6,25	6,18	6,06
Wine products	0,5	0,6	0,76	0,78	0,82	0,94	1,19	1,38	1,49	1,51
Beer	1,76	2	2,17	2,15	2,52	2,36	4,13	4,68	4,7	4,67
Tobacco and tobacco products (at a rate in fixed amounts per unit of goods sold (products))	6,56	7,6	8,48	12,1	12,11	15,44	23,5	29,11	31,82	43,04
Vehicles (except motorcycles and bicycles)	0,07	0,1	0,08	0,07	0,07	0,02	0,04	0,07	0,09	0,14

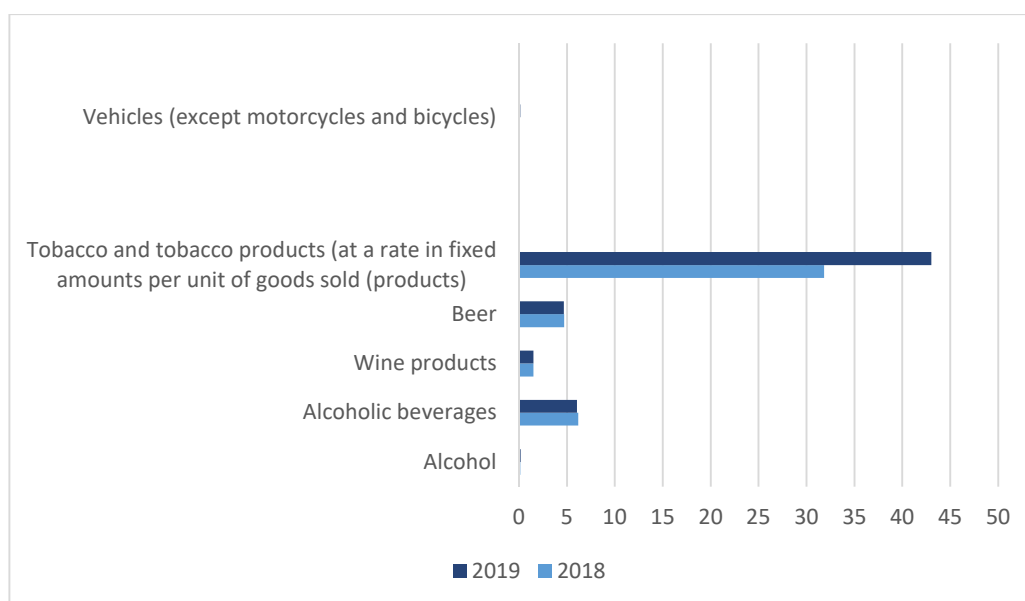


Figure 2.5 – Dynamics of excise tax indicators on goods produced in Ukraine for 2018-2019, UAH billion (built by the author on the basis of initial data)

The main factor in the increase in budget revenues is the increase in tobacco and tobacco products from UAH 31.82 billion to UAH 43.04 billion. Revenues from alcohol also increased from UAH 0.15 billion to UAH 0.18 billion and the indicator of vehicles (excluding motorcycles and bicycles). But there was also a drop in performance. Namely, alcoholic beverages decreased by UAH 0.12 billion and beer decreased by UAH 0.3 billion.

The excise tax on goods imported into Ukraine increased very gradually (Fig. 2.6). If we take 2010, it is only UAH 4.6 billion, in 2014 it amounted to UAH 16.86 billion. And in 2017 compared to 2015, it doubled and amounted to UAH 47.67 billion, then the figures only increased.

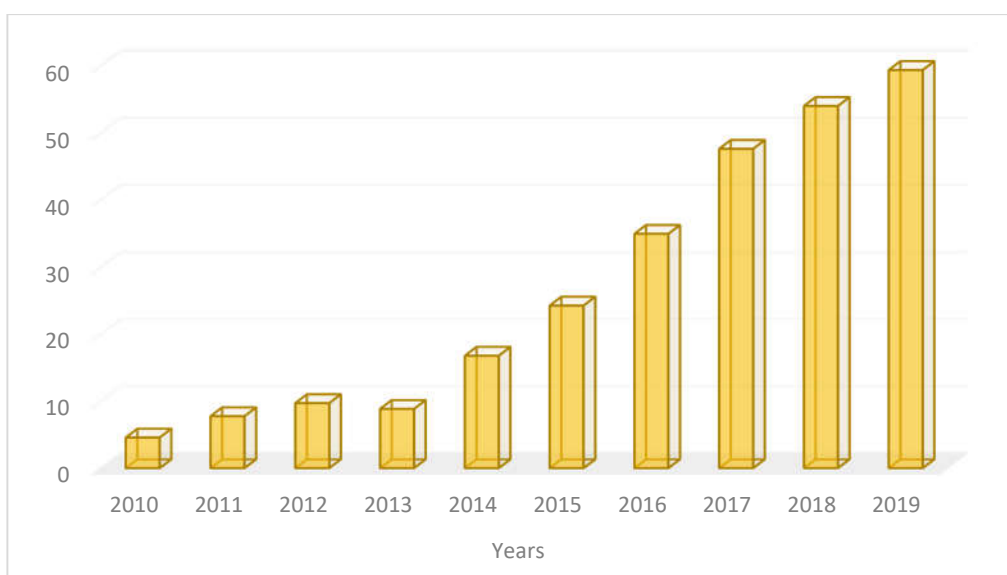


Figure 2.6 – Dynamics of annual revenues from excise tax on goods imported into Ukraine, UAH billion (built by the author on the basis of initial data)

Table 2.4 – Structure of excise tax on goods imported into Ukraine, UAH billion

Excise tax on goods imported into Ukraine										
Indexes	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Alcoholic beverages	0,18	0,38	0,49	0,7	0,55	0,3	0,48	0,68	0,98	1,19
Wine products	0,03	0,06	0,11	0,15	0,13	0,07	0,17	0,33	0,47	0,57
Beer	0,16	0,03	0,03	0,04	0,04	0,03	0,04	0,07	0,09	0,13
Tobacco and tobacco products (at a rate in fixed amounts per unit of goods sold (products))	0,43	0,3	0,35	0,7	1,18	0,88	1,05	0,41	0,56	1,1
Vehicles (except motorcycles and bicycles)	0,6	0,9	1,13	1,09	0,83	2,46	2,65	3,59	3,98	7,83

Let's show the indicators for the last year for a clear understanding (Fig. 2.7). Transport vehicles (except for motorcycles and bicycles) brought the most funds in comparison with 2018, there was an increase from UAH 3.98 to UAH 7.83 billion. Excise duty on alcoholic beverages increased from UAH 0.98 to UAH 1.19 billion. Wine production increased by UAH 0.1 billion, and excise duty on beer by only

UAH 0.04 billion. Tax revenues from tobacco increased from 0.56 to 1.10 billion UAH, which is quite a significant increase.

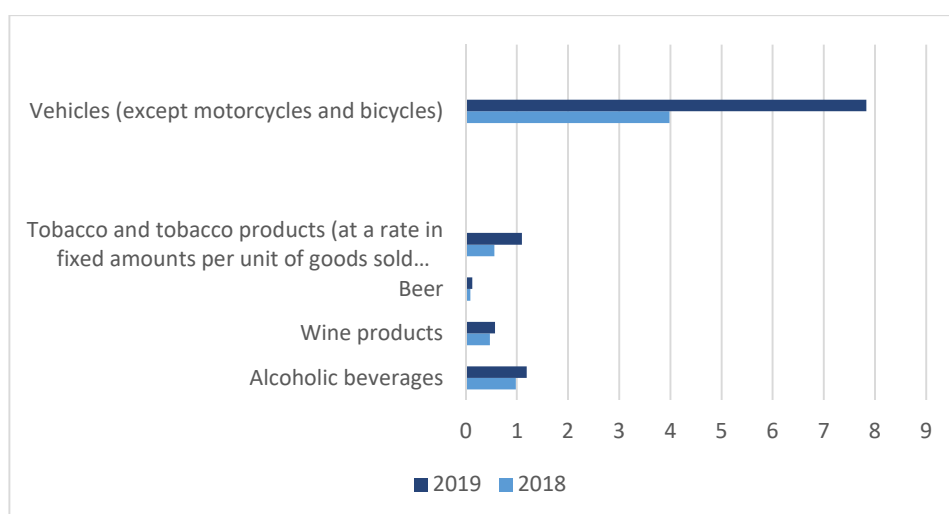


Figure 2.7 – Dynamics of excise tax indicators on goods imported into Ukraine for 2018-2019, UAH billion (built by the author on the basis of initial data)

Consider how the rates of import duty have changed (Fig. 2.8). Starting from 2010, the figure was UAH 8.56 billion and gradually increased until 2014. In 2014, there was a slight decline, after which in 2015 we can see an increase of 3 times. Namely, up to UAH 39.88 billion. But from 2016 - it is 20 billion UAH until 2019, there is a gradual increase to 29.86 billion UAH.

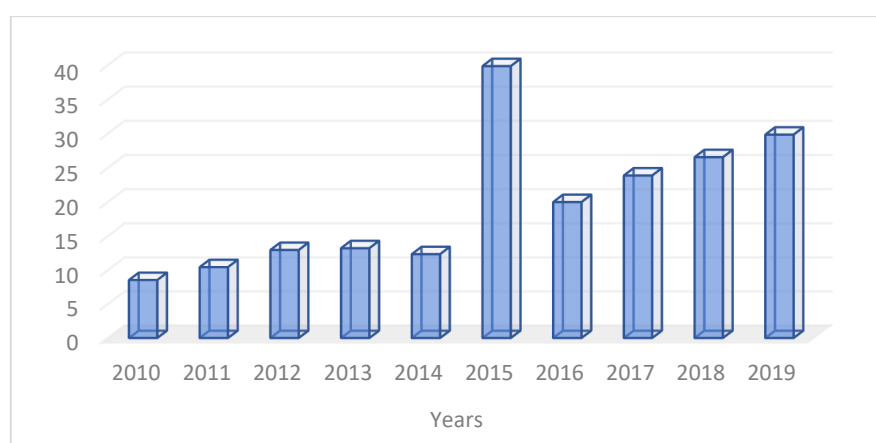


Figure 2.8 – Dynamics of annual import duty revenues, UAH billion (constructed by the author on the basis of initial data)

The situation with the export duty in 2010 is UAH 0.29 billion, but in 2011 it increased sharply to UAH 1.31 billion (Fig. 2.9). Then the situation is more or less stable, and in 2015 - an increase to 0.42 billion UAH. But since 2017, the figures are falling.

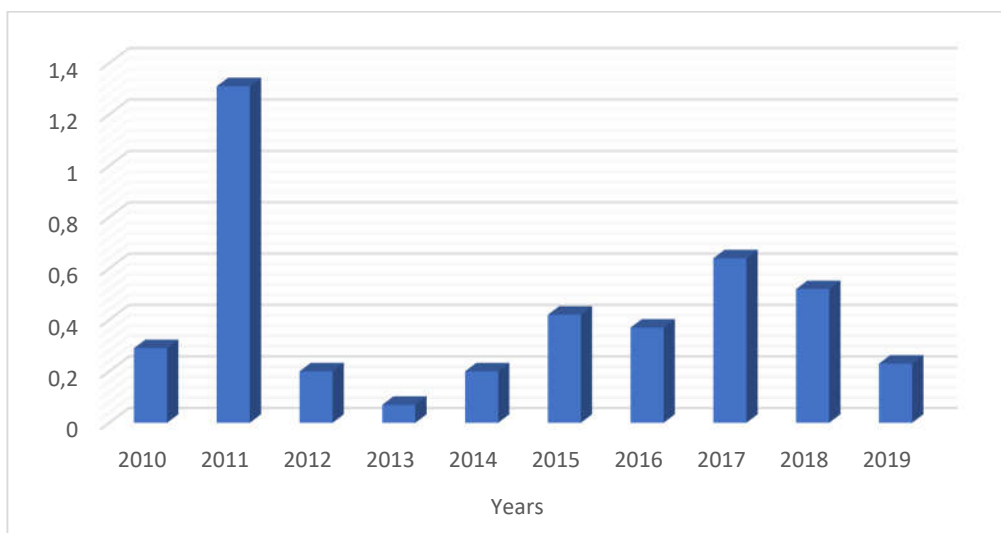


Figure 2.9 – Dynamics of annual export duty receipts, UAH billion (constructed by the author on the basis of initial data)

2.3 Analysis of tax revenues from rent and property taxes

Consider the dynamics of revenues from rent and property taxes (Table 2.5).

Table 2.5 – Consolidated budget revenues for 2010-2019 [6,23]

Name of tax, UAH billion	Years									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Rent	9,48	16,82	13,4	1,49	1,46	8,27	7,22	6,39	5,07	4,86
Property tax	9,54	10,7	12,58	12,8	12,08	16,01	24,98	29,06	31,27	37,99

In 2010, the rent was UAH 9.48 billion and increased until 2011. But after 2012, a very strong decline began up to UAH 1.46 billion. In 2015, the figure increased, but not for long. Because since 2016 it has fallen from UAH 4.86 billion in 2019 (Fig. 2.10).

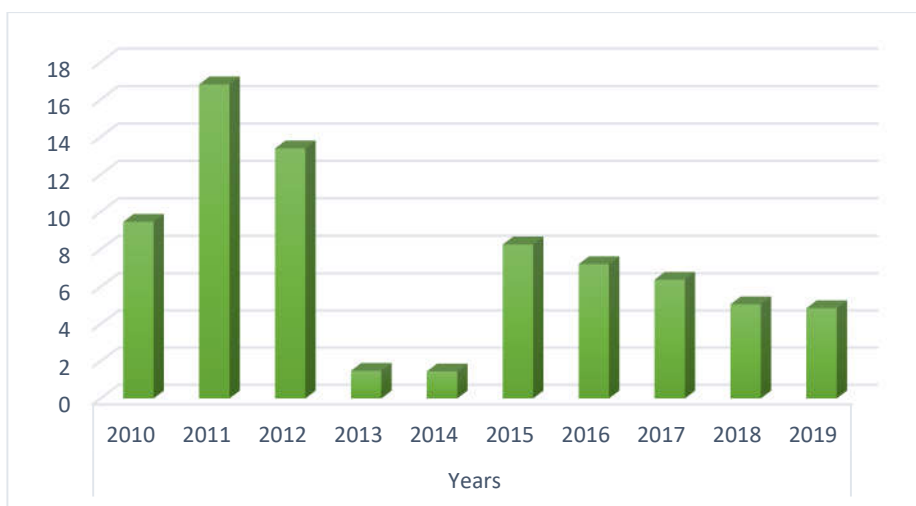


Figure 2.10 – Dynamics of annual rent receipts, UAH billion (constructed by the author on the basis of initial data)

Considering the property tax data, we can first see a gradual upward trend, namely since 2010 - it is UAH 9.54 billion, and in 2013 the figure was UAH 12.80 billion. But then there is a rapid increase, and in 2019 the figure is 37.99 billion UAH, which is 2 times more than in 2015 (Fig. 2.11).

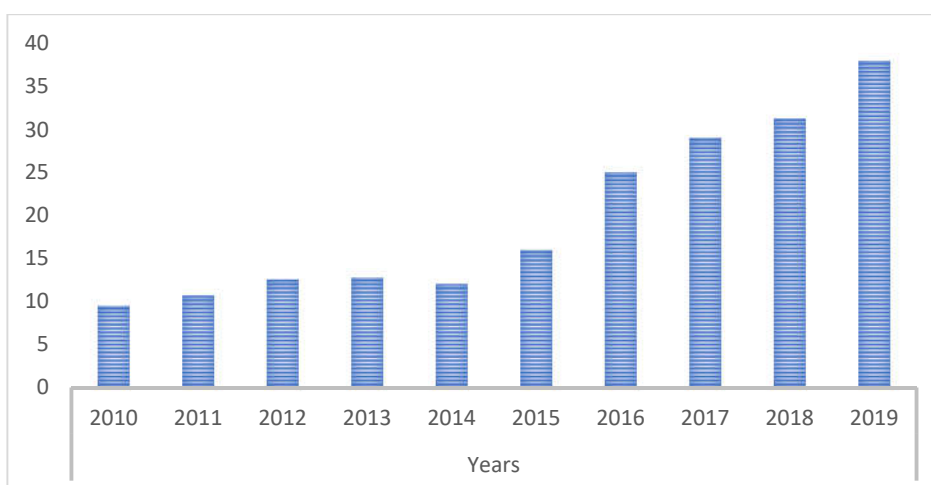


Figure 2.11– Dynamics of annual property tax revenues, UAH billion (constructed by the author on the basis of initial data)

In the course of the analysis it can be concluded that the largest revenues are personal income tax, value added tax, income tax and excise duty. Every year these taxes grew and this is what contributed to the increase in tax revenues to the budget. It is thanks to these revenues that the size of the budget increases, but the tax system still needs to be improved in order for tax revenues to increase.

3 IMPROVEMENT OF THE SYSTEM OF FORMATION OF TAX REVENUES OF THE BUDGET OF UKRAINE

3.1 Empirical study of the impact of tax revenues on the revenues of the Consolidated Budget of Ukraine

To identify the direction and strength of the impact of **tax revenues on revenues of the Consolidated Budget of Ukraine**, we will build and analyze an economic-mathematical model in the form of a regression equation.

To do this, we need to choose the indicator that we will study and it will be Y and choose the explanatory variables, with which we build a model - $X_1 \dots X_n$. Next, we build a table of initial data, namely indicators from the Consolidated Budget of Ukraine for 1996-2019.

Table 3.1– Initial data, million UAH for model construction (constructed by the author on the basis of data [6,21,23])

Years	Consolidated budget revenues	Corporate income tax (CIT)	Personal income tax and military duty (PIT)	VAT	Excise tax (ET)	Import duty (ID)
	(Y)	(X1)	(X2)	(X3)	(X4)	(X5)
	(R_t)	(CIT_t)	(PIT_t)	(VAT_t)	(ET_t)	(ID_t)
1996	30219	5497	2593	6246	646	432
1997	28112	5792	3296	8242	1208	712
1998	28916	5694	3571	7460	1289	880
1999	33785	6182	4434	8459	1790	841
2000	49118	7698	6378	9441	2240	1407
2001	54935	8280	8775	10348	2654	1777
2002	61954	9398	10824	13471	4098	2152
2003	75286	13237	13521	12598	5246	3357
2004	91529	16162	13213	16734	6704	4707

Continued table 3.1

Years	(Rt)	(CITt)	(PITt)	(VATt)	(ETt)	(IDt)
2005	134183	23464	17325	33804	7945	6809
2006	171812	26172	22791	50397	8608	8173
2007	219939	34407	34782	59383	10568	9589
2008	297845	47857	45896	92082	12783	11933
2009	272967	33048	44485	84597	21625	6329
2010	314506	40359	51029	86316	28316	8556
2011	398310	55097	60225	130094	33919	10463
2012	445525	55793	68092	138827	38429	12986
2013	442789	54994	72151	128269	36668	13265
2014	456067	40202	72668	139024	45100	12389
2015	652031	39053	99983	178452	70795	39881
2016	782860	60223	138782	235506	101751	20001
2017	1016970	73396	185686	313980	115448	23898
2018	1184291	106182	229901	374508	132650	26560
2019	1289849	117317	275459	378690	137076	29855

Now with the help of MS Excel «Data Analysis» - «Regression», we make a mathematical relationship between the revenues of the Consolidated Budget of Ukraine (y) and the taxes that we took for analysis (X1–X5).

Next, based on the analysis of data built in MS Excel table 3.2, we build a regression equation.

Table 3.2 – Results of regression data analysis (author's calculations)

	A	B	C	D	E	F	G	H	I
1	CONCLUSION OF THE RESULTS								
2									
3	<i>Regression statistics</i>								
4	Multiple R	0,999775788							
5	R-square	0,999551627							
6	Normalized R-square	0,999427079							
7	Standard error	8998,019043							
8	Observations	24							
9									
10	Analysis of variance								
11		<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
12	Regression	5	3,24887E+12	6,49774E+11	8025,428996	1,8056E-29			
13	The remainder	18	1457358240	80964346,69					
14	Total	23	3,25033E+12						
15									
16		<i>Coefficient</i>	<i>Standard error</i>	<i>t-statistics</i>	<i>P-Value</i>	<i>Bottom 95%</i>	<i>Top 95%</i>	<i>Bottom 95.0%</i>	<i>Top 95.0%</i>
17	Y-intersection	10843,32912	3830,017879	2,831143212	0,011071628	2796,76014	18889,8981	2796,760144	18889,8981
18	Variable X 1	0,895963689	0,358323873	2,500429796	0,022288099	0,14315317	1,648774211	0,143153166	1,648774211
19	Variable X 2	1,098089016	0,199115047	5,514846984	3,08947E-05	0,67976383	1,516414207	0,679763825	1,516414207
20	Variable X 3	1,544516976	0,220828628	6,994188151	1,57092E-06	1,08057324	2,008460708	1,080573243	2,008460708
21	Variable X 4	1,382243625	0,462324919	2,98976665	0,007858298	0,41093501	2,353552238	0,410935012	2,353552238
22	Variable X 5	3,1805555	0,366381918	8,680983818	7,51203E-08	2,41081565	3,950295347	2,410815654	3,950295347
23									

The equation of this regression dependence will have the following well-known form [7]:

$$Y = a_0 + a_1 x_1 + U, \quad (3.1)$$

where Y – researched (effective) indicator;

a_0, a_1 - MNC estimates (regression coefficients: parameters of the regression equation that show the quantitative change of the performance trait (gross value added) under the influence of the change of the factor trait (volume of sold innovative products);

x_1 - explanatory variable (factor feature - the volume of sold innovative products);

U – the influence of other factors on Y .

As a result of construction of modeling of dependence of the size of incomes of the Consolidated budget (y) (t - time characteristic (in the study it is a year),

$t = 1, \dots, n$) the regression equation is obtained from the size of basic taxes (3.2):

$$Y = 10843,3291 + 0,8959CIT_t + 1,5445VAT_t + 1,3222ET_t + 1,09809PIT_t + 3,1805ID_t \quad (3.2)$$

$$R^2 = 0,9995$$

To check the importance of the coefficients of the obtained mathematical regression, we use the Student's criterion under all the conditions of table 3.3. The level of accuracy is 95%. According to the table «Bilateral quantiles of Student's distribution» [7], based on the original data: $\alpha = 0,05$, $k = n - m - 1 = 24 - 5 - 1 = 18$ calculate the critical t-statistics: $t_{cr}(0,05; 18) = 2,101$

From this table 3.3, we can conclude that the coefficients are very important. This means that the regression dependence obtained in the course of work shows that there is a very strong connection between the change in the volume of revenues of the Consolidated Budget of Ukraine and the size of basic taxes.

Table 3.3 – Checking the importance of the coefficients of the obtained regression

	<i>Coefficient</i>	<i>Standard error</i>	<i>t-statistics</i>		<i>Student's criteria</i>
Y-					
intersection	10843,31	3830,03	2,831128358		
Variable X 1	0,895986	0,358325	2,500483848	>2,101	corresponds
Variable X 2	1,098077	0,199118	5,514715917	>2,101	corresponds
Variable X 3	1,544504	0,220829	6,994113771	>2,101	corresponds
Variable X 4	1,382273	0,462327	2,989818084	>2,101	corresponds
Variable X 5	3,180572	0,366385	8,680954416	>2,101	corresponds

From the constructed equation 3.2, it can be seen that the increase in revenues of the Consolidated Budget of Ukraine largely depends on:

-the amount of corporate income tax, namely the increase in revenues from this tax is the reason for the growth of total revenues by UAH 0.8959 billion;

-the amount of VAT, namely the growth of VAT revenues is the reason for the growth of total revenues by 1.5445 billion UAH;

-the amount of excise tax, namely the growth of revenues from this fee is the reason for the growth of total revenues by 1.3822 billion UAH;

-the amount of personal income tax, namely the growth of revenues from this tax is the reason for the growth of total income by 1.09808 billion UAH.

- the amount of import duty, namely the growth of revenues from this tax is the reason for the growth of total revenues by 3.1805 billion UAH.

Thus, the constructed equation 3.2 proves that equation can be considered equivalent and weighty, namely, provided that several factors are met:

- the coefficient of determination in our case is 0.9995 units, which means that the modification of the size of the Consolidated Budget of Ukraine by 99.95% is covered by the variety of sizes of the selected 5 taxes;

- the obtained coefficients do not exceed the value of the Student's criterion, and are below 2,101 units.

In conclusion, it can be confirmed that there is a close relationship between the variable size of budget revenues and basic taxes, and the change in the size of the Consolidated Budget and the size of basic taxes and is economically justified.

3.2 Problems of tax policy in Ukraine and ways to solve them

Taxes have an extraordinary impact on all economic phenomena and processes. Since the state cannot exist only through charitable donations, the budget must receive stable revenues, and this is primarily taxes.

The tax system should show the conditions in which the country is, namely: the level of economic development, social sphere, foreign and domestic policy, traditions of the people, geographical location and many other factors. And because of this, the tax systems of all countries have their differences [4].

There is probably no perfect tax system. In Ukraine, the shortcomings of the tax system are instability, complicated calculations of some taxes and complex organization of the tax system [15,19].

Consider in more detail (Fig. 3.1). The disadvantages of the current tax system are:

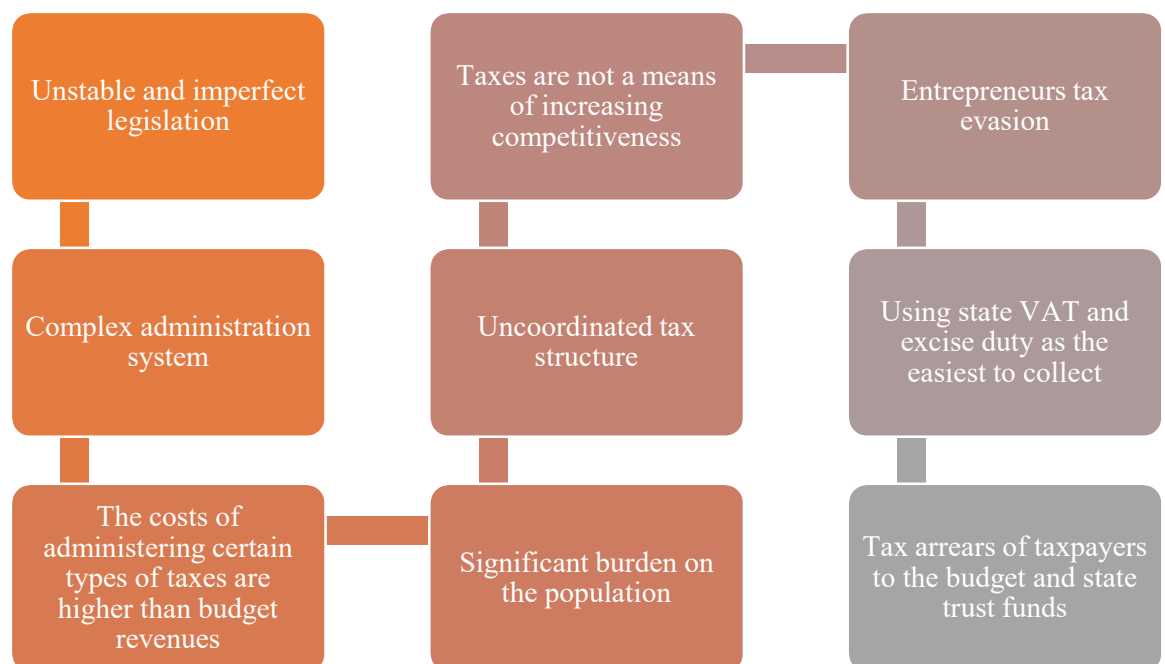


Figure 3.1 – Disadvantages of the tax system

To date, VAT provides a little less than half of all revenues to the State budget and more than a third of the Consolidated, which means that the collection of VAT has a negative impact on the future purchasing power of the population, and this is a big problem [24].

Another important problem is the uneven burden on taxpayers, and for this you need to optimally distribute the tax burden. In Ukraine, until 2016, the personal income tax rate was 15% of the tax base, and taxpayers whose income exceeded 10 times the minimum wage, the rate was 20%. And the payment of a single social contribution of 3.6%. In 2016, the rate was increased to 18%, regardless of the amount of income, but the deduction of the single social contribution for employees was abolished. For comparison, let's take 2 employees: with an average salary and a higher salary. For the first employee, there are almost no changes in the tax burden, and the second, who has a higher salary, will have a reduction in the tax burden [1,11].

If we take 2017 as an example, then consumption taxes accounted for 46.65% of total state budget revenues, which is very bad. Because consumption taxes are the kind of taxes that all citizens pay equally, regardless of their income, in other words, it is socially unfair. But unlike direct taxes, these taxes are impossible not to pay. Today, the level of shadowing of the economy is 31%, and both businesses and individuals evade taxes [9].

There are data that from 40% to 60% of employers do everything to avoid paying more taxes. A simple example is not the registration of an employee. Namely, a person receives his salary, but the employer does not pay taxes because the person is not officially registered and does not even know it. Another good example is the payment of part of the salary officially, and the other part the employee receives in an envelope. The subordinate does not lose anything from this, and the firm hides the true data on employees' salaries and does not pay the appropriate taxes to the budget. The government should introduce comprehensive measures to stop the concealment of real wages of enterprises, strengthen the system of administration and control.

Currently, companies have 3 alternatives (Fig. 3.2) [18]:

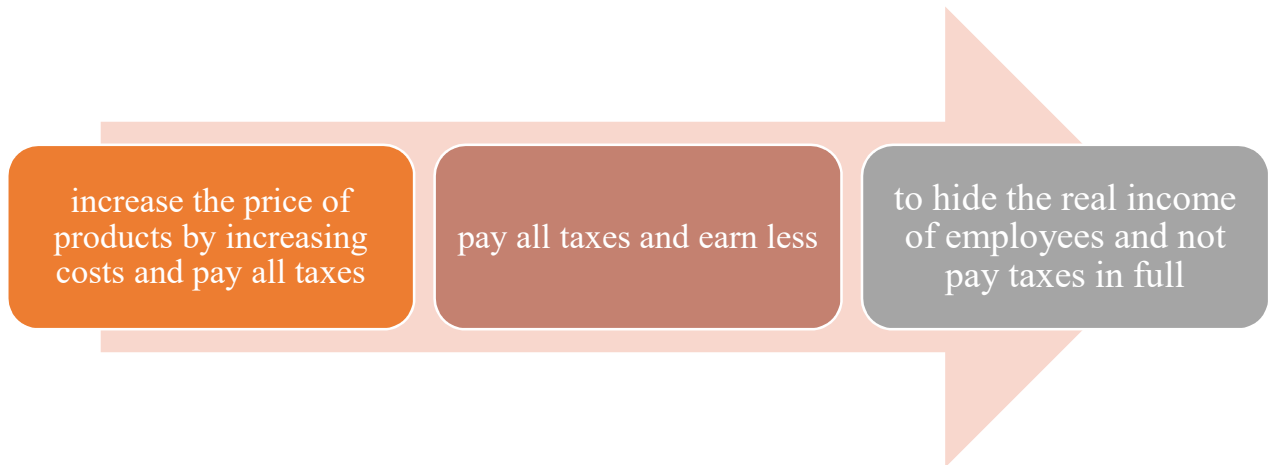


Figure 3.2 – An alternative to choosing companies to pay the tax

Unfortunately, companies are currently choosing the third option. But also because companies in the market have already chosen this option, and even if the entrepreneur chooses one of the first two options, he will receive a profit below market or will have problems with the sale of their products due to higher costs.

Examples of foreign countries that will help us with their example are:

Germany, where the base rate of value added tax is 15%. The preferential rate is 7% and applies to food (except alcohol, cafes and restaurants), public transport, media, works of art [3].

In Italy, value added tax is levied on a separate scale of rates: 2% (preferential), 9% (basic), 18% and 38% (increased), 0.8% (export). The preferential rate applies to basic foodstuffs, as well as newspapers and magazines. A increased effect on luxury items [3,25].

Property tax (property) in Germany is 1% of the value of property of individuals and 0.6% - the property of industrial companies and enterprises. Property worth up to 70 thousand marks is not taxed. When the property owner reaches the age of 60, the benefit increases to 100 thousand marks [3,22].

Tax control in France has a system of penalties and the organization of tax audits. Thus, for late submission of the declaration, the tax is levied in full with the simultaneous imposition of a fine of 0.75% per month. If the income is hidden

intentionally for the purpose of evasion, the fine is from 40 to 80% of the amount of accrued tax. If it is a systematic reduction of income, then taxes are levied compulsorily on the payer's accounts. There is also criminal liability for serious offenses and even imprisonment [3,19].

Therefore, we can offer the following solutions [8,9,14] (Fig. 3.3):

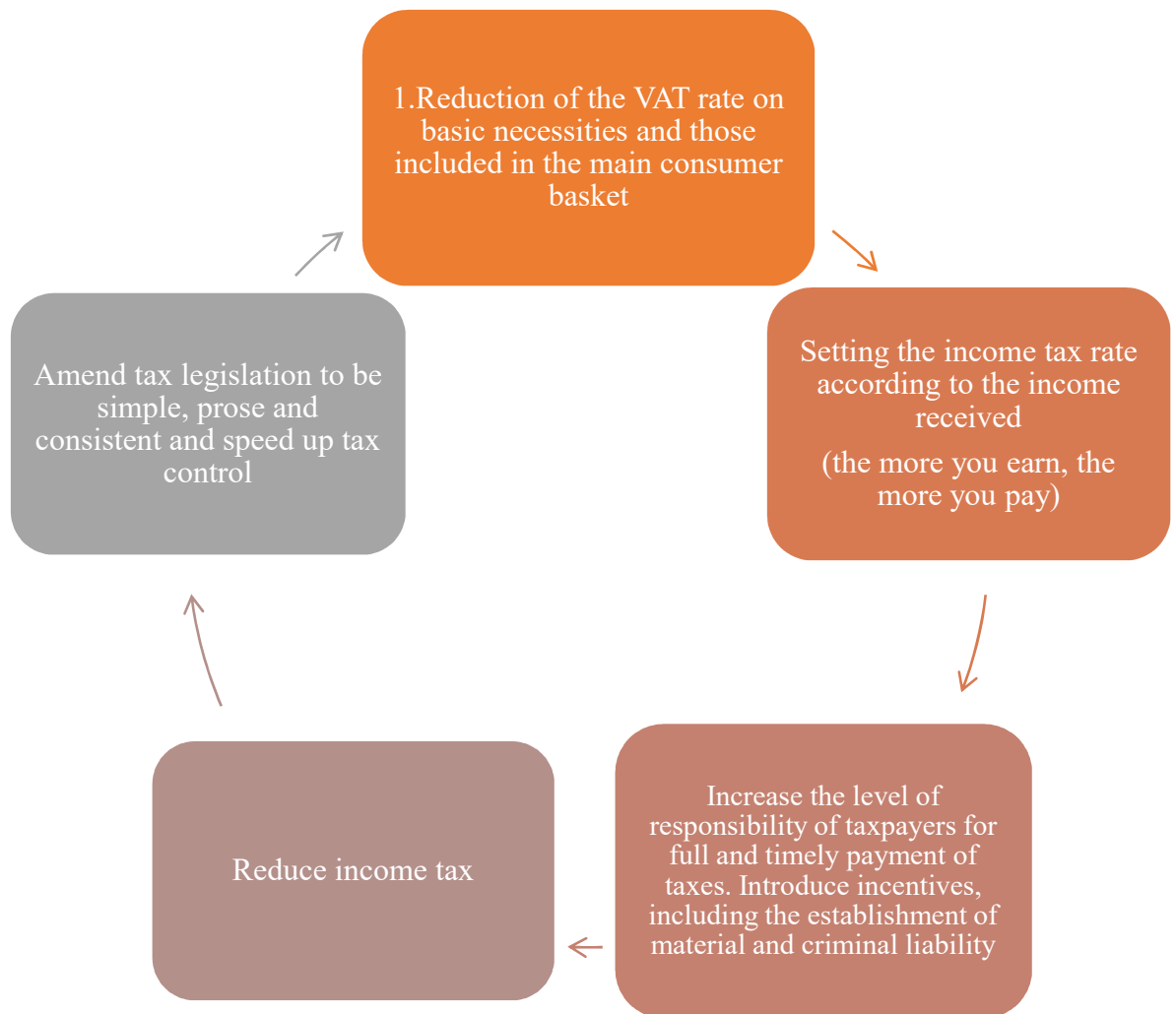


Figure 3.3 – Proposed solutions to problems

In France, the payroll tax is levied on the basis of the annual personal income tax of a certain employee in cash and in kind. There is a progressive scale of taxation: with the annual amount of sole proprietorship up to 35.9 thousand francs - 4.5%; from 35901 to 71700 fr. - 8.5%; in excess of 71.7 thousand francs - 13.5% [10].

There are also targeted training fees in the amount of 1.2% of the annual FOP of each employee, which are set to finance training at all private enterprises with more than 10 employees. If it is temporary labor, the rate is increased to 2% FOP. Also, an additional fee is charged, which is intended for the training of young people [19].

If the proposed measures are implemented, the current tax system will be able to develop and solve the main number of problems and shortcomings. If efforts are made to stop corruption, this will be one of the main problems.

If changes begin to take place, then in the future we will be able to have a perfect tax system that will contribute to the development of the state and society.

CONCLUSIONS

The classification of tax revenues of the country's budget is generalized.

The structural-dynamic analysis of the revenue base of the budget of Ukraine in 2010-2019 is carried out. It is established that since 2010, revenues in the state budget amounted to UAH 233.99 billion, and in 2015, increased by UAH 297.56 billion, ie revenues have doubled. In the following years, revenues grew even more and in 2019 amounted to UAH 998.34 billion. If we compare the growth of tax revenues in 2018 and 2019, this is an increase of 77.53 billion UAH, which is also quite significant.

An analysis of tax revenues from direct and indirect taxes, as well as from rent and property taxes. It is established that the most significant are the personal income tax, value added tax, income tax and excise tax.

An empirical study of the impact of tax revenues on the revenues of the Consolidated Budget of Ukraine in 1996-2019 and tax changes made in these years. Based on this, it is concluded that the increase in the Consolidated Budget revenues largely depends on:

- the amount of corporate income tax, namely the increase in revenues from this tax is the reason for the growth of total revenues by UAH 0.8959 billion;
- VAT amounts, namely the growth of VAT revenues is the reason for the growth of total revenues by UAH 1.5445 billion;
- amounts of excise tax, namely the growth of revenues from this fee is the reason for the growth of total revenues by UAH 1.3822 billion;
- amounts of personal income tax, namely the growth of revenues from this tax is the reason for the growth of total income by 1.09808 billion UAH.
- the amount of import duty, namely the growth of revenues from this tax is the reason for the growth of total revenues by 3.1805 billion UAH.

The problems of tax policy in Ukraine are generalized and the ways of their solution are systematized.

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