

Calculation of the Tax Burden for an Automobile Enterprises

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Abstract. For optimum tax planning and tax risks of the motor transportation enterprises need to be able to calculate the tax burden on its activities. The article presents an analysis of the methods of calculation of the tax burden. Given the author's definition of evaluation of the tax burden, absolute and relative. Considered taxation of road transport enterprises (RTE) which use rolling stock for the business. The author's method for the determination of tax burden. Highlighted the criteria for its evaluation and given them the basic characteristics upon which designed economic model for determining the tax burden of motor transport enterprise. Using computer modeling, the calculations of the tax burden and the analysis of the impact of the criteria to measure the tax burden MTE.

1. Introduction

For state tax revenues are the source of the budgets of different levels, which directly affect the viability of the state. To assess the impact on the economy of the state, private industry or business use such a figure as the tax burden (tax burden, tax burden). The tax burden – is the level of economic constraints that apply to the taxpayer in the form of a transfer of money to pay taxes, diverting them from other possible uses. [1]

In domestic science, there are many works of modern academic economists devoted to the study index the tax burden at both the macro and micro levels [2,3,4,5,6,7]. Currently existing methods for determining the tax burden on businesses tend to vary in two directions: by tax structure included in the calculation in determining the tax burden; on benchmarks with which to compare paid taxes.

The most common is the method proposed by the Ministry of Finance of Russia [8]. That it is used the tax authorities, since the calculation of the tax burden in this case is made very simple by dividing the total tax deductions for a taxpayer rescue. There's also a method FCS [9,10] developed methods for assessing the tax burden separately for enterprises and individual entrepreneurs, which are both general and specific taxation systems.

The question of determining the tax burden of businesses paid a lot of attention of Russian scientists. So, the main works in this area belong to the scientists: D. Ryakhovskiy [11] O. Kuznetsov [1] E. Kirova [12] O. Salkova [13] M. Kreynin [14] A. Kadushin [15], M. Litvin [16] S. Tsarkova [17].

Each of these authors offer a number of indicators that reflect different aspects of businesses.

But also, in state procedures (Ministry of Finance, the Federal Tax Service), and other authors often do not include all taxes and fees, due to which the real tax burden on the company artificially undervalued. Only a few authors (Salkova O., Tsarkova S.) talk about the need to integrate and indirect taxes (VAT) in the calculation of the tax burden. Practically all methodologies presented the tax burden is the ratio of paid (or accrued) of tax revenue to the business.

2. Features of tax regulation

The aggregate average effective tax rate on business in Russia is more than 54.1%, which significantly exceeds the level of the tax burden in the European Union (42.6%) and generally in the world economy (44.7%). The final assessment of Russian experts PWC received due to the summation of the three immediately effective rates of taxation – Income tax expense (7.1%), taxes on labor or wages (41.2%) and "other taxes" (5.8%). It should be noted that, in the calculations of experts was not taken into account a number of very significant for the total load on businesses other tax payments and fees in the budget. Including these charges real effective rate in the national economy reaches 65-70% [17].

From the author's point of view when considering the tax burden is not only from the point of view of the taxpayer (micro-level), it is necessary, as far as possible, take into account all paid now taxes (the so-called real tax burden) and contributions – compulsory insurance contributions to the extrabudgetary funds (fiscal burden). It is necessary to take into account the peculiarities of the industry working business.

In this study, the tax burden is considered for enterprise trucking industry. Determination of the tax burden of motor transport enterprise (MTE) it is necessary to start with the selection of tax systems which are currently used in the industry.

Application of the general taxation system (GTS) for transport companies – mostly large enterprises, with a large fleet of vehicles (over 100 units of rolling stock). The same law provides for a choice of several special tax regimes for the MTE, is a simplified tax system (STS) and the unified tax on imputed income (UTII), the patent system of taxation (PSN).

In accordance with current tax legislation in the payment of wages the employer shall remit the insurance premiums to the three non-budgetary funds: the Pension Fund (PF) – 22%; Federal Compulsory Medical Insurance Fund (HIF) – 5.1%; Social Insurance Fund of Russia (SIFR) – 2.9%. Also in the SIFR in addition, the amounts for compulsory social insurance against industrial accidents and occupational diseases (SIFR) – 2% of drivers.

Contributions to the data state non-budgetary funds (NBF) are deducted from the employee's salary by the employer and to the Foundation in accordance with the payment of wages.

$$\text{NBF} = 0.32 \times \text{PWF} \quad (1)$$

For the calculation of the tax burden, we proposed to allocate the same tax on personal income (personal income tax) paid to the composition of labor costs. The tax rate in Russia is fixed at 13% of the income of a natural person, shall be paid by the employer for the employee.

$$\text{PIT} = 0.13 \times \text{PWF}, \quad (2)$$

Where PWF – payroll-wage fund MTE (drivers) workers, rub.

Transportation tax (TT) also allocate a part of the tax burden MTE, calculated in accordance with Chapter 28 of the Tax Code and local laws. Vehicle tax is levied on owners of vehicles at the rates set depending on the engine power – horsepower, according to Art. 361 of the Tax Code.

Tax rates of the transport tax for 2016-2017 in the Khabarovsk Territory are set depending on the engine power, the thrust of a jet engine or a gross tonnage of vehicles, vehicle category, as well as the date of release of the car per horsepower output of the vehicle engine, one kilogram of jet engine thrust, one register ton vehicle or vehicle unit. The order, the rates and terms of payment of vehicle tax in the Khabarovsk Territory in 2017-2016 was established by the Law of Khabarovsk Territory from

10.11.2005 № 308 "On the regional taxes and tax breaks in the Khabarovsk Territory" (with appropriate modifications, in force in 2019). It applies to all the city's edge. Currently, the transport tax costs of commercial vehicle range from 10 000 to 20 000 rubles. The calculations assume the transport tax of 20,000 rubles.

General taxation system is also called the basic tax system. Being on OCHO addition to the immediate payment of all federal, state and local taxes have to carry quite a complex accounting and submit financial statements.

Table 1. The tax burden on organizations MTE (GTS).

Tax name	Reduction	Tax rate	Object of taxation
Transport tax	TT	rubles for hp (KW)	Power vehicle
Tax on personal income	PIT	13%	Personal income
Retirement fund	RF	22%	Labor costs
Allocations to the Social Insurance Fund	SIFR	2.9%	Labor costs
Allocations to the compulsory health insurance fund	HIF	5.1%	Labor costs
On compulsory social insurance against industrial accidents and occupational diseases	SIFR ns	2%	Labor costs
Property tax	PT	2.2%	Property
Tax on profits	NP	twenty%	Profit
Value added tax	VAT	twenty%	added value
Total tax burden (for the organization)	TTB		

Corporate property tax (CPT) is calculated in accordance with Chapter 30 of the Tax Code. The object of taxation is movable and immovable property of the ATP is recorded on the balance sheet as fixed assets. The tax base is the average value of the property. Tax rate may not exceed 2.2%.

The method proposed thus calculate CPT:

$$CPT = 0.022 \times (CB + CB - Am) / 2, \quad (3)$$

where the CB – the book value of the vehicle, rub; Am – charge for the year of depreciation, rubles.

The object of taxation of property tax Phys. only persons recognized as property, which IE uses in its business activities. Therefore, in the proposed method, this tax is equal to 0, since the movable property (vehicle), he is not charged.

Value added tax (VAT) of both organizations and for individual entrepreneurs, recognized as the most difficult for the reporting and payment of a refund. The object is recognized the added value of works (services). The total amount of tax may be reduced by the amount of tax deductions, ie VAT, presenting suppliers of works and services. The tax base is the value of services provided. To simplify the calculations, since the VAT is quite difficult to predict and depends on many variables, it is suggested in this methodology to calculate the VAT on the difference between revenues and costs, and reduce the amount of VAT received from suppliers of fuel, lubricants, tires and spare parts.

$$VAT_{\text{payable}} = VAT_{\text{accrued}} - VAT_{\text{poss}}, \quad (4)$$

where accrued VAT – VAT calculation, ie calculated based on the activity of the enterprise, using a simplified approximate calculation, the tax base of businesses accept income

Table 2. Tax loading on IE (GTS).

Tax name	Reduction	Tax rate	Object of taxation
Transport tax	TT	rubles for hp (KW)	Power vehicle
Tax on income of physical persons (employees)	PIT	13%	Personal income
Retirement fund	RF	22%	Labor costs
Allocations to the Social Insurance Fund	SIFR	2.9%	Labor costs
Allocations to the compulsory health insurance fund	HIF	5.1%	Labor costs
On compulsory social insurance against industrial accidents and occupational diseases	SIFR ns	2%	Labor costs
Individual income tax	IIT	13%	Physical person income from commercial activities
Personal property tax	PPT	2%	Property nat. persons employed in business
Value added tax	VAT	20%	added value
Total tax burden (for IE)	TTB		

$$VAT_{\text{accrued}} = 0.2 \times D, \quad (5)$$

where VAT_{poss} – VAT which the company can offset, the company has the right to pay the difference between the VAT accrued, net of refunds, which is charged with VAT purchased material costs, in our case the variable costs (for fuel, tires, spare parts).

$$VAT_{\text{poss}} = C_{\text{var}} \times 0.2, \quad (6)$$

where C_{var} – variable cost (fuel, lubricating oil and materials, tires and spare parts).

Tax on profit (TP) is calculated and paid in accordance with Sec. 25 of the Tax Code. The object of taxation of the taxpayer recognized gain. Profit recognized income, reduced by the amount of expenses incurred. The tax rate is 20%. The methodology taxable profit is equal to gross profit (GP):

$$GP = D - C_{\text{GTS}} - VAT_{\text{payable}}, \quad (7)$$

where D – MTE income, rub;

C_{GTS} – for transportation expenses deductible for taxation purposes, rub.

$$TP = 0.2 \times GP \quad (8)$$

For the carrier – IE, the difference in the calculations is 2 taxes: property tax physical person, which will be equal to zero, and the tax on personal income from business activities (PPT). For the calculation of personal income tax u use the same method to calculate the income tax for organizations.

$$IIT (IE)=0.13 \times GT \tag{9}$$

3. The tax burden of MTE

Analysis tax burden performed using two groups of economic indicators:

1. Performance evaluation tax burden absolute – in monetary terms and relative – is the ratio of the absolute tax expenditures to the amount of business profits.
2. Absolute and relative (traffic margin) net income of the taxpayer.

Absolute tax burden (ATB) of road organizations located in the general tax regime, is calculated as follows:

$$ATB_{GTS MTE}=TT+NBF+IIT+VAT+PPT+TP, \tag{10}$$

$$ATB_{GTS IE}=TT+NBF+IIT+VAT+PPT_{IE}+IIT_{IE}, \tag{11}$$

where ATBGTS MTE – an absolute tax burden for MTE (GTS), rub;
 ATBGTS IE – an absolute tax burden for individual entrepreneurs (GTS), rub.

$$TB_{GTS MTE}=\frac{(TT+NBF+IIT+VAT+PPT+TP)}{(D-C_{GTS})}, \tag{12}$$

$$TB_{GTS IE}=\frac{(TT+NBF+IIT+VAT+IIT_{IE})}{(D-C_{GTS})}, \tag{13}$$

where TBGTS MTE – the tax burden for MTE on GTS;
 TBGTS IE – the tax burden for individual entrepreneurs to GTS.
 The second group of indicators, it is the net profit margin (NPV) and transportation are

$$NPV= D - C_{GTS} - TP, \tag{14}$$

$$R=NPV/C_{GTS}, \tag{15}$$

Table 3. Performance of rolling stock.

Indicator	What is measured	Value
Vehicle capacity	t	10
Lifting capacity utilization factor	–	one
Technical speed	km / h	26
Coefficient of run of haul	–	0.5
The attire of the time	h	8.2
Balance number of vehicle	PC	4.00
Auto-hours operation of the park for a year	AH	12 424.36
Auto-days operation of the park for a year	AD	1375
The total mileage of the park for a year	km	134750
Number of working days	days	365
The rate of work (AH)	rub.	1 700.00

Transportation costs were obtained as follows (Tab. 4).

To determine the tax burden on enterprises and individual entrepreneurs engaged in transportation we have described above, and the mathematical model, a program using Microsoft EXCEL software. The computer system (hereinafter CS) is a collection of interrelated information tables and built based on these diagrams designated for input and storing input data and for carrying out analytical calculation of parameters used in the analysis of tax burden.

Next, we present data obtained by computer simulation with single shift operation of rolling stock. Transportation of cargo were chosen, urban route, the pendulum. For further analysis, the following parameters of operation of the park them were selected.

Table 4. Cost of transportation.

Name of expenditure	Value, rubles
Wage fund drivers	2 126 984
Contributions to the state non-budgetary funds (drivers)	680 635
Fuel costs	1 525 524
The costs of operating and lubricating materials	137 297
The costs of maintenance and repair of rolling stock	647 447
The cost of tires	231 101
Amortization of rolling stock	1 356 164
Other expenses	2 235 051
Total cost of transportation	8 940 202

Articles The cost structure is shown in Fig. 1.

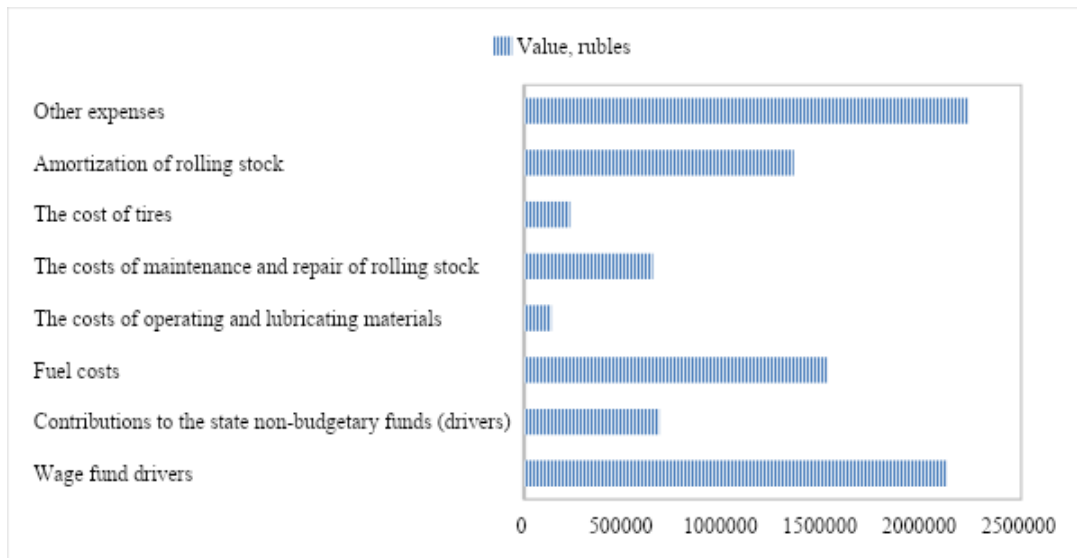


Figure 1. Cost of transportation.

For organizations to GTS tax burden is as follows Fig. 2.

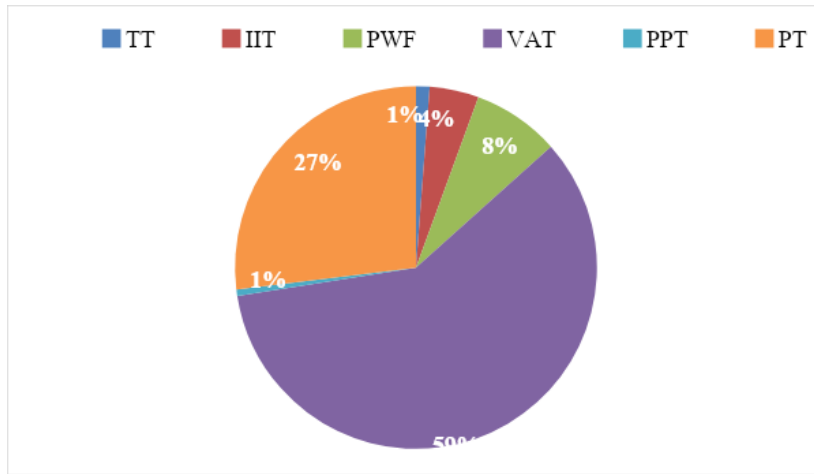


Figure 2. The tax burden for organizations (GTS).

As seen from the figure represented by the maximum load creates a VAT tax, which is 60%. Followed by corporate income tax – 27% and PWF – 8%. Transport tax and property tax in total occupy about 2%.

When applied to IE (GTS) tax structure similar to organizations (Fig.3.). Maximum load creates a VAT – 66%, followed by the IIT with business activity – 19% and PWF – 9%. Completely absent from property tax as SP exempt from paying the share of the transport tax of about 1%.

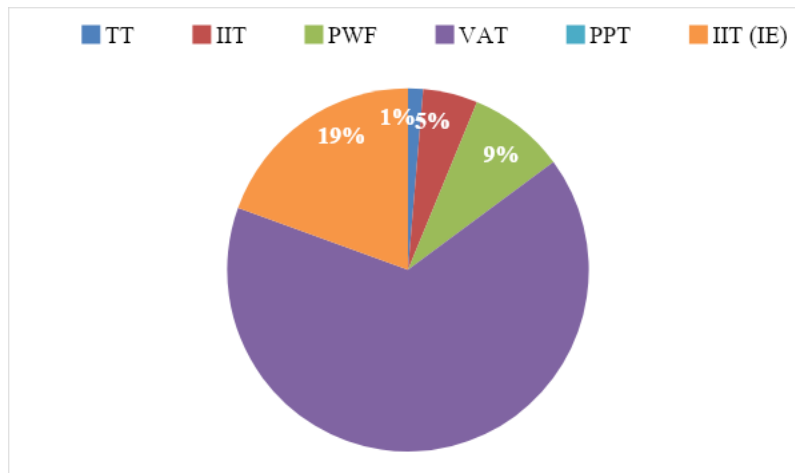


Figure 3. The tax burden for individual entrepreneurs to GTS

When applied to IE (GTS) tax structure similar to organizations (Fig.3.). Maximum load creates a VAT – 66%, followed by the IIT with business activity – 19% and PWF – 9%. Completely absent from property tax as SP exempt from paying the share of the transport tax of about 1%.

Property tax and motor vehicle tax account for less than 1%, and further analysis of their impact is not considered.

Fig. 4, we can conclude that the application of GTS choice of organizational form as an individual (as IE) has the advantage of the tax burden – it is below 16%. Reduction is achieved mainly due to the decline in personal income tax rates for IE rate of 13% compared with the tax on corporate income, which amounts to 20%, despite the fact that the tax base is almost the same. And due to the lack of property tax for individuals.

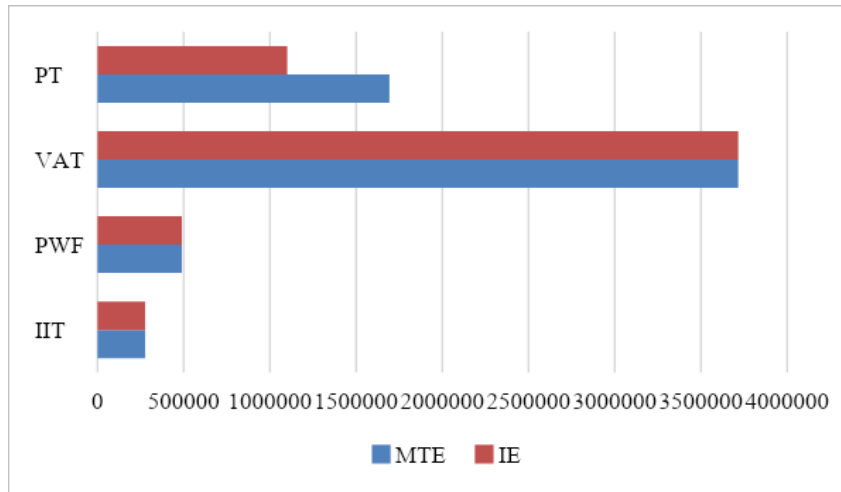


Figure 4. Comparison of the tax burden on GTS for businesses and individuals (for example).

When applied to IE (GTS) tax structure similar to organizations (Fig.3.). Maximum load creates a VAT – 66%, followed by the IIT with business activity – 19% and PWF – 9%. Completely absent from property tax as SP exempt from paying the share of the transport tax of about 1%.

Property tax and motor vehicle tax account for less than 1%, and further analysis of their impact is not considered.

Table 5. Comparison of the net profit (NPV) for organizations and individual entrepreneurs on GTS.

Indicator	Dimension	MTE	IE
Income from the carriage	rub.	21 121 410	21 121 410
Cost carriage for GTS	rub.	8 940 202	8 940 202
Gross profit	rub.	8 465 199	8 465 199
Net profit	rub.	6 772 160	7 364 724
Profitability traffic	%	75.7	82.4
The tax burden (the ratio of net income taxes)	%	92.0	76.1

4. Summary

In this case, the tax burden on GTS for legal persons and a maximum of 92% for the IE 76%. Thus, the use of IE to reduce the tax burden rate by 16% and increase net profit by 9% and profitability to increase traffic by 6.6%.

Tax optimization allows the taxpayer legitimately avoid or reduce the required payments to the budget or to obtain a deferral of required payments to the budget, produced in the form of taxes, fees, duties and other charges and, therefore, does not entail adverse consequences for the taxpayer. In the application of the general tax system (GTS) the ability to affect the rate of the tax burden from MTE is significantly lower than in the selection of special tax regimes provided for small and medium-sized businesses in Russia, which, often, are MTE. Disadvantages of legal tax optimization techniques are manifested in its high cost for the MTE, as is required with a set of specialist expertise and the possibility of tax audits.

The main factors affecting the level of tax burden are as follows:

1. The choice of the tax system. If necessary, use GTS is limited to the possibility of reducing the tax burden, but still there is scope to reduce it.

2. The choice of the legal form of the company. Since the use of IE as compared to the legal entity will reduce the tax burden by 16% and increase the profitability of transport by 6.6% and net profit by 9% at one shift operation of the vehicle.

3. Development of an optimal accounting policies for legally prescribed tax reduction options.

For example, an increase in depreciation by applying a multiplying factor or the use of bonus depreciation or select a non-linear method of depreciation or the use of the production method of calculating depreciation, will reduce the property tax and receive free deferment of payment of income tax.

4. VAT deductions. Often used for large transactions, can also have a decisive influence in the selection of the supplier (whether or not the VAT payer).

5. Replacement of contracts of sale of fixed assets on lease contracts –savings on income tax, property tax, VAT refunds.

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