Features of Factor Analysis
in Tax Consulting

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Abstract

A distinctive feature of factor analysis in tax consulting is that some of the parameters of taxation or all of them together serve as influencing factors or performance indicators. Therefore, factor analysis requires using the traditional characteristics of financial and economic activities of an economic entity as well as the indicators characterising the taxation parameters.

Keywords

taxation parameters; factor analysis; tax level; taxpayer; cash; methods of factor analysis

1   Introduction

For any state, taxation is one of the main sources of the revenue budget. In addition to having strictly a financial function, taxes also serve as a governmental tool of economic influence on public production, its structure and dynamics, as well as scientific and technological development. The levying and payment of taxes and fees (mandatory charges) are reflected in tax reporting documents. Tax levels may be calculated for separate taxes or for a combination of several taxes.

Methods of economic analysis have been actively applied in managing cash used by an economic entity to pay taxes. Optimisation of the taxation process should not result in a conflict of interests between the state and the taxpayer, and therefore one of the aims of financial management of an economic entity is to make sure that it does not happen.

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2 Economic Analysis

Economic analysis allows for the evaluation of current and expected changes in the taxation of an economic entity and their influence on the financial management of the entity. Therefore, it does not only focus on the reduction of tax rates and payments. Economic analysis of tax expenses includes assessment of the type, structure, and dynamics of tax payments.

The economic analysis performed in this article focuses on the influence of taxation and expected managerial decisions concerning the management of cash flows of a taxpaying organisation. It is aimed at studying the correlation between the parameters and factors of taxation and the results of financial and business operations of a taxpaying organisation.

2.1 The aim of factor analysis

We believe that the aim of factor analysis is to reduce the risk of obtaining inadequate information about the level and parameters of taxation, as this information is important for maintaining budget effectiveness, optimisation of tax calculations, and improvement of the quality of managerial decisions concerning the tax policy of an economic entity. In order to achieve this aim, the following objectives were set.

- Achieving effective cooperation between economic entities in the sphere of taxation by optimising the tax policy, making regular tax payments to the budget, and reducing the risk of tax offences.
- Determining disputable tax situations and factors that may cause them; developing suggestions and recommendations on eliminating the negative effects of these factors through managerial decisions taken in order to solve any arising problems.
- Systematising the tools of economic analysis in order to achieve the desired results (reduction of tax payments, prevention of tax penalties).
- Enhancing the role of economic analysis as an information basis for adequate managerial decisions aimed at tax optimisation and prevention of unjustified tax payments.
- Improving the methodology of factor analysis in taxation by developing economic forecasting, strategic economic analysis, and ecological economic analysis.
- Suggesting complex solutions to tax problems taking into account social, ecological and human resources issues, as well as the policy of use and capitalisation of net profits of an economic entity.

Factor analysis plays an important role in determining the effect of various factors on the resulting performance. The major factors that influence the financial and economic performance of a taxpaying organisation are:

- total tax expenses;
- cash used to pay taxes and charges, and the amount of refunded taxes;
- tax liabilities to the government.

Factor analysis tools allow reducing the ambiguity of information about the taxation parameters, improve the quality of managerial decisions concerning the optimisation of taxation and implementation of the tax policy of a taxpaying organisation.

The main source of information for factor analysis are tax reporting documents used by both internal and external subjects of the economic analysis. One of the major subjects of economic analysis of tax reporting are tax authorities, who use the information from tax returns to control the adequacy and accuracy of payments of taxes, fees, and other mandatory charges.

2.2 Tax indicators and performance indicators

To determine the correlation between the tax indicators and the results of financial and business operations of economic entities, it is necessary to analyse cause and effect relationships between the taxation indicators and the performance indicators of the organisation. Among the major characteristics of taxation indicators which may be analysed in comparison with performance indicators of economic entities, are tax level and tax structure.

We believe that tax level can be characterised by the following indicators of the tax structure (*Financial and Economic Analysis for Tax Consulting,* 2008):

- the share of tax charged over the current (previous) reporting period in the total amount of all taxes charged over the current (previous) period;
- the share of tax paid over the current (previous) reporting period in the total amount of all taxes paid over the current (previous) period;
- the share of tax asset or liabilities in the current (previous) reporting period in the total amount of tax assets or liabilities in the current (previous) reporting period;
- the share of tax accrued in the current (previous) reporting period in the total amount of all taxes accrued in the current (previous) period.

The above parameters can be used to determine the following indicators of the structure, dynamics and structural dynamics of taxes:

- absolute deviation of the amount of taxes in the current period as compared to the previous one;
- the growth ratio of taxes in the current period as compared to the previous one;
- the share of taxes allocated to expenses in the total amount of accrued taxes;
- the share of taxes not allocated to expenses in the total amount of accrued taxes;
- the dynamics of the structure of accrued taxes in the total amount of accrued taxes in the reporting period.

The economic analysis should also focus on the indicators of the dynamics of taxation of an economic entity which include the following:

- the structure of accrued taxes in the current period as compared to the previous one;
- the structure of paid taxes in the current period as compared to the previous one;
- the structure of taxes within the asset and liability items of the balance sheet in the current period as compared to the previous one.

We should note that influencing factors used in factor models gave the resulting indicators. The amount of tax expenses depends on the tax rates and the taxable property for each of the accrued taxes. The relative tax level can be evaluated based on the correlation between the tax payments and the expected economic effect.

We consider tax reporting to be a set of actions performed by the taxpayer (or their authorised agent) and the tax authorities to form, process and submit certain documents containing the information about the economic performance of the taxpayer and their financial status. These documents should also regulate the process of tax calculation and reserve a certain amount payable to the state budget.

Tax return may be prepared by taxpayers themselves, by their authorised agents, or by a tax agent. Tax return is prepared using the data from the balance sheet and specific calculations. The Tax Code of the Russian Federation does not give any definition to the term "tax return" (The Tax Code of the Russian Federation). Therefore, in this article we use this term as defined by the official website of the Federal Tax Service of Russia (Official website of the Federal Tax Service of Russia). According to the website, a tax return is "a set of documents containing the information about the calculation and payment of taxes by individuals, private entrepreneurs, and organisations".

Let us note, that financial statements contain information about the tax indicators (Order of the Ministry of Finance of the Russian Federation No. 66) which should be used in an economic analysis to determine the level of tax indicators. This is demonstrated in Table 1.

Table 1. Tax indicators in accounts (financial statements)

Type of the financial statement	Tax indicator
1. Balance sheet	deferred tax assets VAT on the purchased material assets deferred tax liabilities taxes and fees payable
2. Financial performance statement	current income tax, including permanent tax liabilities (assets) changes in deferred tax assets changes in deferred tax liabilities
3. Group Cash Flow Statement	other income from current operations other payments on current operations

Source: Compiled by the author based on the Order of the Ministry of Finance of the Russian Federation No. 66.

The information from financial statements can be used to calculate the following indicators:

- tax assets;
- tax liabilities;
- net tax payable as the sum of tax liabilities excluding the tax assets;
- net tax flow as the difference between the tax paid and tax refunded for previously overpaid taxes.

Therefore, using the indicators of the tax level based on the information from the financial statements (Sapozhnikova et al., 2018: 360) we can calculate the amount of tax expenses of a taxpaying economic entity.

We performed the analysis of the taxation level using the data from an independent auditor's report on the financial statement of PAO Novolipetsk Steel (NLMK) for 2017 (PAO NLMK financial statements). The results of the analysis are presented in Table 2.

Table 2. Taxation level of PAO NLMK

Indicator	As of the beginning of the reporting period, thousand roubles	As of the end of the reporting period, thousand roubles
Deferred tax assets	153,987	161,667
VAT on the purchased material assets	6,486,168	3,037,696
Deferred tax liabilities	11,341,530	10,954,069
Taxes and fees payable	1,411,715	3,743,118
Tax assets	6,640,155	3,199,363
Tax liabilities	12,753,245	14,697,187
Net tax payable	6,113,090	11,497,824
Deferred tax assets	7,680	
Deferred tax liabilities	387,461	
Permanent tax liabilities (assets)	−11,372,600	

Indicator	As of the beginning of the reporting period, thousand roubles	As of the end of the reporting period, thousand roubles
Tax payments	7,569,942	
Income tax accrued in the reporting period	3,741,224	
Effect of the temporary difference on the financial result	−379,781	
Effect of the permanent difference on the financial result	−11,372,600	
Total effect of the temporary and permanent differences on the financial result	−11,752,381	
Net tax flow	7,569,942	
Convergence of the deferred tax assets in the balance sheet and the financial statement	153,987 + 7,680	161,667
Convergence of the deferred tax liabilities in the balance sheet and the financial statement	11,341,530 − 387,461	10,954,069
Calculation of tax expenses and the income accrued tax	11,497,824 − 6,113,090 − (−11,752,381) − (−7,569,942)	24,707,057
Tax expenses	24,707,057 − 3,741,224	20,965,833

Source: Compiled by the author based on the Financial statement of PAO Novolipetsk Steel (NLMK) for 2017.

The data presented in Table 2 demonstrate that the tax expenses amount to 20,965,833 thousand roubles and are comparable with the amount of accrued taxes (calculated by the tax-paying organisation, not a tax agent) plus the amount of penalties and interests accrued in the reporting period.

The current income tax of PAO NLMK is calculated using the data from the financial statement and the contingent expense (contingent income) adjusted according to the permanent tax liability (asset), deferred tax asset, and deferred tax liability for the reporting period. PAO NLMK also takes into account permanent and temporary differences, determined using the analytical data by comparing the data on income and expenses from the financial and tax statements.

The frequency and the time of tax reporting depend on the organisational and legal basis and the taxation scheme. This can be accounted for by the fact that business owners want to optimise their expenses, reduce the time spent on reporting, and ensure a high level of quality of accounting (Panina, 2014: 39–48). This is especially important in cases when an organisation does not perform any activities in the reporting period, but still has to submit all the reporting documents.

To analyse and assess the level and the dynamics of the taxpayer's performance, the following indicators can be used:

- sales revenue (less VAT, excise taxes and other mandatory charges);
- production costs (including selling and managerial expenses);
- employee compensation (labour costs);
- number of employees;
- average compensation to an employee per month;
- work output per man (calculated using the sales revenue);

- financial results of the economic entity;
- payments to the budget (actual tax payments, amount in arrears, deferred payments).

The analysis of the subjects of tax reporting demonstrated that the tax information and tax reporting system are closely related to other systems of economic data, which means that the number of entities and individuals using this information cannot be restricted to tax authorities only, as defined by law.

Information about the financial status of an economic entity and the way it performs its liabilities to the budget is of great interest to a lot of users who may provide feedback to the reporting entity and influence the parameters of the tax reporting. There are two types of information users in the system of tax reporting: external and internal. Internal users are the administration of the organisation. External users are tax authorities and tax consultants.

To compare the tax indicators and their dynamics to the major indicators of financial and business performance, we should consider the correlation between these indicators, which we do in Table 3.

Table 3. Types of correlation between the tax indicators
and the major indicators of financial and business performance

Varieties of correlations between the tax indicators and the major indicators of financial and business performance		
Value of the real property	Elements of property tax	Accrued property tax
Labour costs	Elements of income tax	Accrued income tax
Accrued and paid taxes	Changes in tax liabilities	

Source: Compiled by the author.

The data presented in Table 3 demonstrates that typical correlations occur between tax factors, non-tax performance indicators of an economic entity, factor tax indicators and the resulting indicators of taxation.

According to regulatory agencies, if the expenditure growth ratio is higher than the income growth ratio, it means that the economic entity either overestimates the expenditure or underestimates the income. However, the growth of expenses can be caused by various reasons, such as:

- reduction of sale value of goods, or insignificant growth not in line with the increase in the cost of raw materials and components;
- increase in employee compensation and cost of utility services;
- payment of interests on acquired loans.

If any of the economic performance indicators is lower than average, federal regulatory agencies send a formal letter requesting an explanation for the low level of tax burden. Tax authorities usually request the following information:

- information about the structure of the organisation (its operations, type of economic activities, specifics of delivery of the goods, works and services);
- statement of income and expenditure for the last three years;
- turnover balance sheets on all accounts and sub-accounts;
- tenancy contracts;
- staff list.

Tax authorities also require the head of the organisation and the chief accountant to give explanations in person. Such requests are usually illegal, as the tax legislation clearly names the cases when tax authorities are entitled to require explanations, for example, if the office audit reveals errors, discrepancies and controversy in the presented data (Art. 3.88 of the Tax Code of the Russian Federation). Tax authorities are only entitled to require documents from taxpayers who enjoy tax inducements or want to get VAT refunded (Arts. 6 and 8.88 of the Tax Code of the Russian Federation). A request for an explanation of a low level of tax burden is therefore not legal. The taxpayer may or may not provide the requested data to the tax authorities at their own will.

Factor analysis should determine the main types of correlation between the resulting indicators and the variables (factors) (Gilyarovskaya, 2006: 360) that influence this indicator. The results of such an analysis are presented in Table 4.

Table 4. Types of correlation between factors and indicators in factor tax models

Type of the model	Description of the model
Additive	taxes allocated to expenses are used in calculating the financial results prior to taxation; factor tax indicators and other factor non-tax indicators are used
Multiplicative	taxation basis and tax rate are correlated and considered as factor tax indicators
Divisible	used to calculate the indicators of the structure and relative dynamics and allows to compare the amount of taxes to the interrelated performance indicators of an economic entity
Mixed	relations between defined tax and non-tax indicators and factors

Source: Compiled by the author based on Gilyarovskaya, 2006: 360.

The most frequently used tax factor models are models of taxation level indicators, taxation dynamics indicators and factor models of VAT dynamics. These models are used for the external financial control of an economic entity.

Users and subjects of the results of factor analysis in the tax consultation are the participants of the tax process. The range of users of tax information is significantly limited in comparison with the users of economic information, as a limited number of people are interested in using the results of factor analysis for management decisions

in the field of tax optimisation and organisation of tax accounting. This group of persons can be divided into internal users of the taxation process, which include the heads of the economic entity, employees of economic services, responsible for decision-making in the field of optimisation of tax policy, affecting the indicators of taxation of the economic entity, and external, represented by the state control bodies in the field of taxation. The group of users also includes specialists who are involved in the preparation of information to justify management decisions in the field of tax planning and optimisation of tax payments. In the formation of this information, the tax adviser plays the role of the performer and user of economic information. In the framework of the implementation of duties, the tax consultant works with specialists of internal structural divisions of the organisation and external information from a variety of sources. Financial control bodies as external subjects of factor analysis are interested in the data of tax accounting and reporting of an economic entity, primary documents confirming the legality of the facts of economic life, the degree of completeness of the implementation of legislation governing the aspects of taxation of economic entities. Internal subjects of tax legal relations are interested in the business activity of an economic entity, the level of financial stability and solvency, the volume, structure and dynamics of tax payments to the budget, their share in the volume of monetary turnover of the organisation, types and characteristics of tax risks, their impact on the financial results of the economic entity. The most important issue is the assessment of the impact of the management decision in the field of tax optimisation on the financial condition of the economic entity.

The most important ways of information processing in the framework of factor analysis can be a comparison and grouping. As part of the factor analysis in the tax consultation, the comparison is most often carried out in the framework of identifying the impact of individual factors, comparing the tax data of the reporting period with the previous, the actual values with the planned data. When using the grouping method in factor analysis, groupings based on the elements of the indicator and the selection of influencing factors to change its generalised value are used. As part of the use of analytical groups, causal relationships between tax and non-tax indicators are identified. Significant attention should be paid to the analysis of the impact of tax cash flows on its aggregate value from the perspective of optimisation of tax payments in the reporting financial period.

It should be noted that within the framework of the development of recommendations in the field of optimisation of taxation of an economic entity, its tax strategy may be changed, which will depend on changes in the organisational and legal form of the organisation and the mechanism of implementation of the facts of economic life. Management tax decisions will affect the tax base, the selected method of taxation, the timing of the emergence and payment of taxes by the economic entity (deferral, investment tax credit, instalment payments).

The methodological apparatus of the tax analyst will depend on the methods they apply, the proposed rational ways of optimising the parameters of taxation on the results of the factor analysis.

3   Conclusion

Our study demonstrated that providing accurate and timely information about the activities of an economic entity be means of tax reporting is very important. It helps the organisation to avoid penalties or, for instance, the freezing of bank accounts. Tax reporting includes approved tax return forms. Tax returns are submitted by taxpayers separately for each tax payable, unless otherwise explicitly set forth in the laws of taxes and charges.

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