
Accounting Engineering Tools in the Research of Economic Costs and Benefits

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Abstract:

The article deals with some particular transformations of scientific categories as costs, expenses, profits in the system of accounting and analytical coordinates. The main idea of the article is the need for harmonious combination of the linguistic, regulatory and engineering approach to solving the problem of improvement of the quality of information provision to define key financial and economic indicators. The era of economic globalization requires finding the most suitable ways of combining national and international accounting and analytical systems.

Moreover, the rapid development of IT - technologies involves their widespread introduction of the system of accounting and information support of businesses that can be achieved through a variety of engineering tools. However, practical implementation of these tools requires a deep adaptation to the characteristics of the existing accounting and economic procedures, allowing preserving and strengthening the analytical and practical possibilities of information files, to combine them with the legal norms and requirements. From this perspective, the authors consider it necessary to further diversify the financial science and strengthen the role of strategic accounting and analysis.

The study authors have concluded on the need to preserve the integrity in the use of accounting and economic procedures for determining financial performance, which should be carried out by a combination of modern engineering tools based on IT-technologies, while meeting the most important principles, gowns (particularly legal) and terminological apparatus of accounting science.

Keywords: *Expenses and income, costs, accounting and economic profits, professional judgment, accounting engineering*

JEL Classification: D24, M40, M41

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1. Introduction

The strengthening of economic ties of Russia and the EU depends on a common understanding of key financial and economic indicators, which increases the level of business confidence. The main source of information for objective and accurate determination of indicators, such as costs and profits, is accounting data. However, there are still a number of major scientific and methodological problems complicating qualitative determination and data integration to comply with these criteria, thus being not conducive to the growth of business and investment activities.

The purpose of this paper is critical analysis and research of ways to improve the reliability of the financial information regarding the costs and profits in a variety of accounting systems and ways of their optimization (Angelakis *et al.*, 2015; Averina *et al.*, 2016; Carstina *et al.*, 2015; Thalassinou and Politis, 2012; Thalassinou and Dafnos, 2015; Havlíček *et al.*, 2013; Břečková and Havlíček, 2013; Vovchenko *et al.*, 2017; Suryanto, 2016; Anikina *et al.*, 2016; Theriou and Angelakis, 2014).

To achieve this goal and to solve identified scientific problem, we have firstly conducted behavior terminological analysis of the conceptual apparatus in terms of categories of expenses, costs, accounting and economic profits (Tsamis and Liapis, 2014; Thalassinou and Liapis, 2014; Thalassinou *et al.*, 2012; Liapis *et al.*, 2013; Kalanotnis *et al.*, 2014). Secondly, the article shows features of the understanding of costs and benefits in different scientific concepts and their accounting interpretation. Third, we consider possibilities, prospects and problems of the use of predictive tools to assess financial performance based on IT - technologies and accounting engineering tools aimed at adapting Russian accounting traditions to the international financial reporting standards system (Nechaev and Antipina, 2016).

2. Theoretical, Informational, Empirical, and Methodological Grounds

Considering the microeconomic aspects of business processes optimization, we handle the costs concepts. In this case, the information base for their calculation is usually the accounting data. There is still no clear understanding of such categories as costs, expenses and expenditures. Most economists of accounting profile draw an express line between these concepts, although there are such economists as professor Sokolov (2007), who consider them closely, related concepts. These differences are provided by the English-American, German and French schools of accounting that can be clearly seen from the following table.

Table 1. Terminology units of expenses capacity

Russian	English	German	French	Italian
Издержки	Costs	Kosten	Depense	Costs
Затраты	Outlay(Expenses)	Senkd	Costs	Costs

Расходы	Expenditure	Reiekasten	Frais	Costs
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The table shows that only Italian accounting school uses an identical interpretation of expenses, even though this concept is the most diverse for all the above-mentioned countries, since even in German, they recently began to use such a term as *Aufwendung* (expenses, expenditures) to describe expenses.

There are certain common places between the expenses and expenditures, which are primarily related to asset retirement or creation of business obligations, although there are different underlying causes. Expenses appear when a business unit obtains goods, assets and material resources, as well as upon payment for labor, formation of social obligations, etc. This predetermines the necessity of payments, the emergence property relations, reducing of accounts receivable and increase in business obligations of the enterprise. However, expenses are characterized by the fact that benefits in the form of decrease in assets of the enterprise or growth of its obligations are not reduced on them. In fact, elimination of an asset class or a business obligation increase only leads to structural changes allowing to increase other assets at the same rates.

However, managers and executives often need information about the costs value for obtaining any product, work or service. In this case, according to R. Anthony, the costs are a certain monetary determination of the amount of resources used for some purpose. However, neo-liberal economic thought deals with resources in terms of factors of production, which include labor, capital and natural resources, and, perhaps most importantly, the entrepreneurial ability of a businessman. Beginning with J. Schumpeter, entrepreneurship is considered as a special independent factor of production, along with capital, labor and natural resources. Moreover, it is recognized that the first three factors of production themselves have no independent value.

Efforts should be made for the establishment and operation of continuous logistic schemes, financial flows, and legal coverage of coordination and management of administrative functions. Optimum connection and combination of production factors complying with the conditions and forms of economic activity with a purpose of profit receipt is the essence and function of the entrepreneurship. A list of such functions is quite broad and includes the creation of new features, significant technological renewal of production, more efficient use of the resource base and management schemes, strengthening of positions in the market, including even its monopolization. Innovative and creative nature of the entrepreneurship, giving a push to any economic process, has long been a popular point of view.

Implementation of the entrepreneurial business is largely connected with the concomitant appearance of a variety of risks, which constantly follows an entrepreneur and which he should take on. It is recognized that the risks can be

insured and non-insured, and the latter present the greatest threat to the entrepreneurship. This refers to losses and damages due to unpredictable fluctuations in supply and demand, prices and exchange rate. Major risks and uncertainties characterize processes of innovative renewal of the business process. Possible neutralization of non-insurable resources is considered an important source of economic profit of an entrepreneur, because it allows significant reanimating and expanding of the scope and quality of economic management. The very expectation of economic profit contributes to more efficient use of resources, increases their productivity by adopting new technologies, optimization of various logistics schemes. Focused attention of business entities to economic profit and costs is a kind of measure of the effectiveness and most importantly the prospects of existing business processes, and it is an important source of funding of the production, its organization and modernization.

However, it can perform such a function only in case of a sufficiently accurate split of economic and accounting profit, because the latter, in terms of classical economic theories, is only a means of compensation for its business abilities. At the same time, from the point of view of supporters of the labor theory of value, profit is a surplus product, a part of unpaid labor of employees, appropriated by a capital owner. Criteria of distinction between accounting and economic profit is either an average rate of profit for invested capital (classical economic views) or an average rate of surplus value in the labor theory.

Consequently, it is the portion of profit that exceeds the standard value and is a surplus profit in its economic interpretation. Dualistic understanding of the profit nature imposes a significant imprint on the classification of certain types of expenses and income, which is very clearly seen in the context of small commercial enterprises. For example, in a family trading company, the owners of which simultaneously perform current job duties, one can't clearly resolve an issue regarding whether to consider the owners' income as salary or as entrepreneurial income. In this case the enterprise members carry out unpaid works, and the entrepreneur and the owner are the same person. In this regard, employment income is inseparable from the owner's income that gives rise to a so-called mixed income.

The latter is understood in economic literature as income of non-corporate enterprises owned by households individually or in partnership with others, and where the owners and the members of their households can work without getting payment for it. It is interesting that income of farmers, private practicing doctors, lawyers, etc. include elements of remuneration, profit, rent and interest income. Therewith it is considered inappropriate to allocate interest, rental and other income from the use of material and financial assets of an aggregate of mixed income. The main issue here is a possibility to cover the assumed costs allowing providing for more or less effective reproduction process.

A significantly different situation is observed in determining remuneration of owners in large or medium-sized businesses. In the current accounting system of remuneration for labor, entrepreneurs' remunerations are put beyond the expenditures and are not considered to be expenditure as such. In accordance with the applicable IFRS and Russian accounting standards, the latter is understood as a decrease in economic benefits as a result of receipt or obligation leading to corresponding changes in a capital.

Moreover, it is necessary to comply with a number of conditions aimed at the recognition of expenditures. In particular, the expenditures are undertaken under specific contractual relationships based on legal acts; one can actually determine their amount; there must be a certainty that after a particular business transaction the specific economic benefits of the company will decrease with a simultaneous absence of uncertainty regarding an asset transfer. Failure to comply with these conditions leads to a transformation of expenditures in an effective debt.

Expenditures should be recognized within specific reporting periods, which allow providing for the comparability with the value of income from product sales. Absolute priority is a documentary evidence of the determined expenditures associated with the technology of products obtaining of the performed services, as well as maintenance and production management, and an original document must be prepared either at the time of the transaction, or immediately thereafter.

Approximately the same criteria are used in the framework of the existing rules of IFRS, though with certain, but, in our view, significant difference, which consists in a different significance of legal and economic mantles. Importance of documentary evidence of the facts of economic life in Russia is well known, which results from the historical evolution of accounting in the country. At the same time, the continental, especially the English-American accounting model, pays significant attention to the professional judgments that can even replace documents. In Russia, unlike IFRS, expenditure can't be recognized, based only on a professional judgment of an accountant confirming decrease in economic benefits. With this approach, the range of transactions relating to the expenditure in the Russian accounting practice is less than provided in IFRS.

With this approach, there are differences in final income data, including those represented in the report forms. For example, recognition of the expenditures on awarding employees is approved in Russian companies only by the middle of the year following the reporting year, i.e. after the decision-making. In practice, however, an IFRS accountant must estimate an approximate amount of bonuses as part of his professional judgment already in the reporting year, including the fact that he must rely on this amount already in the reporting period of the current year. The difference between actual amount and accounting valuation amount is shown upon the adoption of this decision and payments value, but already in the reporting period with inclusion of these data in the profit and loss statement already in the next year.

However, the adjustments range is usually not too large, which allows to confirm the compliance of accounting information with the validity criterion; although with certain probability assumptions. For practical implementation of emerging situations it is necessary to use modern tools of the adaptive accounting. Formation of the modern adaptive accounting and related subsystems of financial, managerial and strategic accounting (situational, functional, hedging, network, etc.) reasonably leads to a change in the accounting regularity. Until the end of the last century the accounting was characterized by two measurements, which were time and score. Then the third and fourth measurements began to appear in the accounting, which were associated with the introduction of business situations, events and temporary flows of investment order resources, in the accounting coordinates.

According to J. Sorter, O.I. Kolvakh, V.I. Tkach, (2010) such changes can significantly extend the objects, purpose, functions and tasks of the accounting. In terms of objects and purposes it is referred to a transfer of accent from the enterprise and assessment of its property and financial result to the information about significant events, segments and time horizons. The main tasks in this case are not the preservation of property and summary of the company activities, but event and fractal forecasting. According to the supporters of the adaptive direction of the accounting, the forecasting is a doubtless advantage (along with a fair valuation of assets and obligations) in the modern transformation of the accounting procedures. The main methodological tool is a semantic derivative balance instrument, being a variety of computer programs, revealing the relationship between accounting, forecasting and strategic balance valuations and adaptive events groups, as reflected in the accounting framework by aggregated transactions. This approach allows calculating the performance of the net assets and liabilities, as well as determinations of the economic adaptation in the form of its active, passive and neutral forms.

Accounting procedures are limited to several successive stages in the derivative balances: a) initial operator; b) semantic accounting transactions; c) output information provided by semantic accounting, forecasting and strategic balances; d) hypothetical transactions in the form of transactions on price disposal of assets and price debt extinguishment in the market price; e) hypothetical balance with the value of net liabilities and uniform money supply in the asset.

3. Results

Despite a quite high level of perspective of using the elements of accounting engineering in the adaptive accounting, we should mention a large framework of problems and eternal questions related to the implementation of this scheme, its ultimate reliability.

In particular, forecasting and implementation of adaptive measures and their effectiveness are very important issues. The latter, in our view, has the most

important significance. Introduction of different forecasting blocks and situations to accounting procedures automatically leads to the imposition of a number of new uncertainties related to the reliability and objectivity of certain situational events on the traditional accounting problems, which we have discussed earlier. As a matter of fact it is referred to the synergy in accounting procedures, which certainly offer a lot of opportunities to reflect many aspects of the organization and planning of production and financial activities of managing residents. Specific examples of such situations include the development and expression of innovative technologies and products, opening of new outlets, development of types of finished products and services, possible price changes, exchange rate fluctuations, etc.

Determining the final control points for each situation has quite various natures. A number of positions is based on the budgeting system, where information about the factors that limit output appears in the form of predictive values: demand limitation of production systems of products sales; production system and estimated level of inventories, including the use of basic materials; labor budget; main production and general economic overhead expenses; short-term and long-term credits and loans; changes in the dynamics of accounts receivables; investments. In case of usage of the most appropriate methods and ways for solving specific problems of budgeting, it is possible to get a decent level of objectivity of the relevant data related to the economic profit and economic costs.

However, implementation of adaptive engineering tools based on probabilistic forecasting bases leads to a significant distortion of the accounting internal structure. It is commonly known that the core strength of the accounting is a harmonious combination of its three layers: economic, mathematical and legal. The essence of the legal layer is legal significance of the recorded economic life facts registered in the system of primary accounting records and registers.

Moreover, in accordance with the Byzantine accounting traditions, which continue to live in Russia in one form or another, the legal form continues to weigh upon the economic substance. The use of the professional judgment elements, which are so common to the English-American accounting views, is significantly narrowed in Russia. These circumstances together with the methodological difficulties will have a restraining influence on attempts to use the tools of accounting engineering in the assessment of economic costs and economic profit, bringing them to the level of strategic account that, in our view, allows saving the dignity of the initial advantages of accounting information.

4. Conclusions

As a result, the authors of the study have concluded on the need to reflect terminology features in the understanding of such categories as expenses, and costs - it allows to more deeply consider the characteristics of the different concepts of

income assessment, first of all, its labor and neo-liberal interpretations. The features reflect the profit system of coordinates in the accounting of large, medium and small businesses in accordance with IFRS and in accordance with the Russian accounting standards; confirm the importance of the legal costs and difficulties that arise in the context of widespread use of professional accounting judgments.

Modern trends associated with the transfer of emphasis from property and financial results on significant events, segments and time horizons, lead to the need to actively use the accounting of engineering tools based on semantic derivatives of balances and computer programs.

However, the use of accounting engineering tools in the assessment and forecasting of efficiency leads to significant deformation of major structural components of the accounting science, a sharp decrease in the importance of the legal component. Therefore, operational harmonization of methodological tools relating to improvement of the quality of accounting and information business support is required.

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