

## Analytical and management approaches to modeling of the accounting balance sheet

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**Abstract.** The suggested methodological approaches to increase the analytical properties of the balance consist in synchronization of analytical and management aspects of information relevance rise. The first approach is based on determination of such balance structure, which provides the substantiation of main standard (criteria) indicator values of companies' activity on one common methodological base, using the balance method, the content of which consists in the development of structure of main and current assets in interconnection with the balance liability structure. The second approach allows neutralizing the existing immanent research and information delimiters of using the initial balance, as a source for analytical actions, due to its transformation into the balance sheet statement. [Bobryshev A.N., Uryadova T.N., Lyubenkova E.P., Yakovenko V.S., Alekseeva O.A. **Analytical and management approaches to modeling of the accounting balance sheet.** *Life Sci J* 2014;11(8):502-506] (ISSN:1097-8135). <http://www.lifesciencesite.com>. 66

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### Introduction

In modern economic situation, when Russian economy exists in conditions of institutional-economic transformations, conditioned by the WTO accession, and depressive processes in some sectors of economy, escalation of which, in its turn, is generated by the accumulated system problems and influence of world economic crisis, resulting in significant intra-branch transformations [1, 2, 3, 4, 5], the approaches, increasing the analytical and prognostic potential of the elaborated information for management decision-making, become more significant.

In these conditions, a great role is given to the quality of information, based on which the relevant calculations are made. The change of information-analytical inquiries of main categories of accounting statement users stimulates the searching process of optimal information-analytical base for decision-making in even-changing conditions. In this context, let us fix our attention on the characteristic of management and analytical aspects of accounting balance sheet, as a main source for elaboration of information, promoting the effective management decision-making.

The problematic of data transformation of the accounting balance sheet into more convenient form for the analyst, anyway, is revealed in the works of many scientists [6, 7, 8, 9, 10, 11, 12, 13, 14], however, some aspects of increasing the relevance of the produced information, to make the corresponding management decisions were left behind the theory and practice of financial analysis, in particular, the development problem of criteria values of economic,

financial indicators, taking into consideration the specificity of definite economic entities, remains understudied. Besides, a quiet high potential belongs to the investigations in the sphere of architectonics and structuring of accounting-analytical procedures, in order to transform the accounting balance sheet data into the balance sheet statement report, what requires the additional conceptual-theoretical elaboration in view of fragmentary study.

The present investigation rests on and in whole does not contradict the heritage of fundamental epistemological-retrospective theories of native financial analysis school, the scientific-methodological bases of which, in particular, are revealed in the following works: [15, 16, 17, 18, 19, 20, 21, 22 and others].

### Procedure

In the executed investigation, the authors used a modern instrument-methodological apparatus for collection, processing and economic interpretation of source information, what shows the substantiation of the obtained scientific results. There was used the effective complex of devices and methods of economic survey, the complex of which was determined in accordance with the requirements of system and subject-objective approaches. To substantiate the scientific provisions of the article, there were used the results of bibliographic and retrospective analysis of Russian and foreign scientists in the sphere of economic analysis and management accounting. The conclusions are based on combination of complex of fundamental methods of scientific

cognition: detalization and generalization, analysis and synthesis, systemacity and complexity.

### Main part

The suggested standard balance method can serve as one of the most effective instruments in the system of strategic management for economic entities, as it is based on elaboration of reference property structure and sources of its formation, the observance of which guarantees high financial strength and stable financial state to the business entity. At that, in the course of analytical actions on implementation of standard-criteria approach, the balanced structure is recorded in the view of customary accounting balance sheet and reflects the standard asset and liability structure by means of correction of reference structure of non-current and current assets and sources of their formation (PHI balance).

PHI balance represents such a structure of accounting balance sheet, which correlation of sections corresponds to the PHI (1,618) number or the square root from the relation of PHI number to the unit– 1,272. It is in keeping with the order and beauty of the world and nature in whole. The number PHI, the value of which corresponds to the value1,618, was named as "Divine proportion" by the scientists of ancient times, as, in their opinion, it was a kind of brick in foundation of everything constructed on earth. All plants, animals and people are endowed with physical proportions, approximately equal to the square root from the relation of PHI number to the unit - 1,272.

These investigations are relevant due to the fact, that they cover the undiscovered aspects of transfer of the structure principle for everything alive to the financial statement structure [11, 12].

It shall be noted that there are four types of PHI balance. We consider the first two types, which are the more adequate from the viewpoint of levels of values of standard indicators and the balance structure itself.

**Table 1 – PHI balance - 1 (PHI balance of the first type)**

Asset	Relative share, %	Liability	Relative share, %
1.Non-current assets	44,7	3. Capital and reserves	61,8
2.Current assets	55,3	4.Long-term liabilities	38,2
including: - stock and costs	27,7		
-accounts receivable	17,1		
-monetary assets and short-term financial investments	10,6		
Total	100,0	5. Short-term liabilities	
		Total	100,0

PHI balance of the first type reflects such activity of the company, for which the internal funds, short-term borrowed and attracted resources are used (Table 1).

In practice, the PHI balance of the first type, as distinguished from the PHI balance of the second type (Table 2), can be conventionally considered as a

balance, where the long-term liabilities were not used as a source of the company's funds [12].

**Table 2 – PHI balance - 2 (PHI balance of the second type)**

Asset	Relative share, %	Liability	Relative share, %
1. Non-current assets	44,7	3. Capital and reserves	50,0
2. Current assets	55,3	4. Long-term liabilities	19,1
including: - stock and costs	27,7		
- accounts receivable	17,1		
- monetary assets and short-term financial investments	10,6	5.Short-term liabilities	30,9
Total	100,0	Total	100,0

The correction is made taking into consideration the branch peculiarities of activity of companies and other factors, influencing on the functioning of economic entity. The standard structure of the company's balance forms the basis for substantiation of standard values of economic indicators of its activity. The economic indicators, calculated by means of standard balance, are taken as standard values of indicators, considering the branch specificity of the activity.

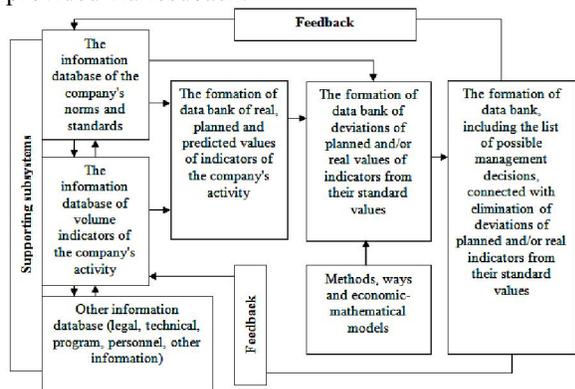
The economic mechanism of standard indicators in the activity of economic entities can be presented in block-diagram (Figure 1). This approach presents a system of regulation and planning of the company's activity, using the standard indicators, ways and methods of their application. Its purpose is to provide the information, necessary to make the management decisions, aimed at the increase of financial results of the company, based on the cutout of costs on manufacture and sales of products and the efficiency improvement of use of main and current assets.

The essence of economic mechanism of standard indicators in the companies' activity consists in the fact, that the number of standard indicators, the monitoring of which provides an opportunity to make predictions, is used in the development of plans. The system of internal control intensifies as a result of management of planned and predicted indicators.

The obtained deviations of indicator values from the standard ones are the object of further monitoring and comparison with the data of correlation-regression analysis, to form the database with the list of possible management decisions.

A feedback is implemented in terms of several aspects: firstly, the information database, involving the system of company's norms and standards, is to be reviewed and reconsidered; secondly, the information database, undoubtedly, can be developed and changed, both in the number of volume indicators, and in their types and levels of their significance. Thirdly, any system presupposes the implementation of control function, which, as per the principles of system building, is reflected in diagrams in the view of feedback. In other words, the

control of compliance with norms and standards is provided via feedback.



**Figure 1 - Block-diagram of economic mechanism of standard indicators in the analysis and planning of the company's activity**

The substantiation of standard values of indicators provides the development of structure of main and current funds, as well as the standard structure of sources of their formation. This structure results from the analysis and synthesis of average and reference structures (PHI balance), development peculiarities and tendencies of activity of the economic entities.

As per our suggested methodological approach, the planned rate of earnings growth is determined at the initial stage. If the further calculations show, that the planned rate of earnings growth does not provide the correspondence of planned indicators to the standard ones, the plan is revised. Then, using the calculation technology for planning of the percent from earnings, the increment of company's property is determined in comply with the planned increment of earnings. Knowing the total cost of property and standard structure of main and current assets, the standard cost of resilient and dead assets is determined. The executed calculations are verified for compliance with the provisions of "Golden Rule of Economy", "Rules of Effective Use of Labor Resources". In comply with them, the property growth rate shall exceed 100%, the earnings growth rate shall exceed the property growth rate, the profit growth rate shall exceed the earnings growth rate, the earnings growth rate shall exceed the growth rate of main funds. If the terms of rules are observed, based on the obtained data, the indicators of effective use of main and current assets are calculated, as well as the effective use of labor resources, which are accepted as standard indicators for this company [23].

The studied provisions on extension of information-analytical field for effective management decision-making due to regulation of structure of accounting balance sheet items mainly refer to the

elements of strategic management. However, in conditions of constantly required diagnostics, operational control and current management of the activity of the economic entity, these analytical data can be insufficient for decision-making in the sphere of management of the company's separate business-processes. Thus, following the logics of the executed investigation, it is necessary to reveal the essence of transformation of accounting balance sheet into the balance sheet statement, to increase the relevance of primary information during the analytical actions.

Let us note, that the necessity in transformation of accounting (primary) balance sheet into the derivative (balance sheet statement) is explained by the influence of the whole number of information-analytical delimiters in use of the initial balance, as an instrument of effective operational management of the economic entity's activity and as a source to elaborate the relevant information:

1. The information of the initial balance can have the disorient influence on the decision-making due to the impact of the following factors: historicity and retrospective character of the balance, which results in temporal mismatch of the evaluation moment of separate assets and liabilities, distorting the value of property; the presence of some garbling conventionalities, such as reservation, amortization and others; the presence of off-balance sheet assets and inner goodwill, non-reflection of which in balance results in the distortion of property value; ambivalent (conditional evaluation) of financial results due to execution of calculating-guiding function by them; the distortion of real evaluation of accounting items under the impact of inflation.

2. A balance in the initial view, being essentially the synthesis of non-closed accounts, provides only 20% of information for financial analysis, as the data about circulation on the accounts are more valuable;

3. A comparative analysis is difficult due to the use of different variants of evaluation of accounting objects, the use of heterogeneous variants of accounting policy, branch specificity of economic entities;

4. The requirements of users of the accounting information constantly transform, the adaptive potential of accounting balance is turned out to be insufficient in these conditions, what requires the use of informal approaches and instruments in the financial analysis, including the ones, that allow considering the factors without cost estimate (political, social, outwardly conjunctural and others).

As the main methodological peculiarities of creation the balance sheet statement, let us distinguish only key aspects, which will characterize the essence of transformation processes:

1. The first transformation direction is the grouping of items in the format, most convenient for the user. To identify and further analyze the most "volatile" assets and liabilities, which significantly influence on the financial state of the economic entity, all items are grouped not as per principle of increasing liquidity and urgency of repayment, but as per the dynamics of absolute or relative variation [7, pp: 32-37].

2. For the purpose of liquidity analysis and company's paying capacity, the item "Noncurrent nondelinquent accounts receivable (that are due beyond 12 months)" is reasonable to be considered in the first section of the balance under the item "Other non-current assets", as these means cannot be considered as the source to repay the current debt.

3. It is reasonable to show the short-term accounts receivable in the balance sheet statement, taking into consideration the time of its emergence and recoverability. In this context, it is purposeful to distinguish separately the doubtful debt, with approximating limitation expiry, which essentially is the "no-seller". For the purpose of liquidity analysis, "monetary assets" and "short-term financial investments" shall be joined into one item, because of their equal use as payment instrument.

4. The balance, where the value of joint invested capital is reflected, gets the additional analytical value. For these purposes, the debts of participants (founders) of the share capital payments are deducted from the sum of over the item "Authorized capital". Here belongs the value of paid-in capital in excess of par of the joint-stock company, and also the stocks, formed in comply with basic documents. The item "Accumulated capital" can involve: "the stocks", formed in comply with legislation", "the undistributed profit (negative return) of the account years", "the prepaid incomes", "the provisions for future expenses". It is also reasonable to detach the property increment value as per reevaluation into the separate item, what will increase the precision of the indicator "the effectiveness of invested capital".

5. All assets shall be reflected in the balance taking into consideration their real liquidity. Thus, as per the items "goods" and/or "ready products", the sums are reflected taking into consideration the evaluation of their quality and storage life, in order to exclude the liquid funds of products out of product range. The sums as per the items "capital assets" and "fictitious assets", for which the term of beneficial use expires, or which have the preservation status, are also subject to correction, as their liquidity is minimal.

6. For the internal users, the reflection of the indicator, characterizing the relation of value of the specific balance sheet item to the sum of maximal or

average balance for the current account (accounts) for the accounting period, what points at the potential of one or another item in conditions of strong influence of the seasonal factor. The additional characteristics of the balance sheet statement also can be "the number of analytical divisions of the control account", what characterizes the degree of accounting detalization (the number of sub-accounts to the main control account, reflected in the balance) or its analyticity.

### **Conclusion**

The present article shows that at modern genesis stage of economic mind in the sphere of accounting-analytical procurement of the activity of economic entities the use of accounting in the initial view does not always provide the qualitative analytical information for effective management decision-making. In this connection, the authors suggest to use the economic mechanism of standard indicators in the analysis and planning of the company's activity, which is the instrument of strategic management. This procedure provides the implementation of system-situational approach to the development of integral scientifically-grounded system of standards of the economic entity's activity, taking into consideration the specificity of its functioning. At that, the standards have the single base for determination of their levels, providing the precision and understanding of economic content, which they contain. The standard indicators act as guidelines or vectors for development and provide making of one or another decisions. Apart this, the article formulates the methodological recommendations on data transformation of the accounting balance sheet into the balance sheet statement, increasing its informative value in the system of operative management and control over the activity of economic entities.

### **Summary**

1. The use of the accounting balance sheet in the initial view does not meet the information inquiries and interests of main accounting user categories, testifying about the necessity to execute one or another balance transformation. 2. The use of standard balance method, combined with the adaptation of standards to the company's specific character of functioning allows increasing the predicting and analytical potential of the balance. At that, the suggested approach is based on the use of single methodological base at the substantiation of standards, taking into consideration the interconnection and interdependence of standard indicators, and providing the level determination of values of each standard indicator not separately, but through the interdependence of its value by the values of another standard indicators, significantly extending the apparatus of strategic management of the

economic entity functioning. 3 The structure of predicted value of property, in the context of standard balance method use, will be in comply with all features of "positive" balance, and take into consideration the positive financial result, what is especially important in conditions of unstable external market situation and impact of economic crisis. 4. The use of the accounting-analytical procedures on data transformation of the accounting balance sheet into the balance sheet statement, described in the investigation, provides the analyst with the additional possibilities to elaborate relevant information, as the operation data allow neutralizing significantly the disorient impact on the financial reporting, made by the existing immanent research and information delimiters of using the initial balance as a source for analytical actions.

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