

# ACCOUNTING AND ANALYTICAL PROCUREMENT OF BUSINESS PERFORMANCE IN AN INFLATIONARY ENVIRONMENT

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***Abstract:** Problems of accounting and analytical procurement of business performance in an inflationary environment require appropriate procurement of adequate methodological tools. Inflation affects both accounting information and methodology of accounting for the enterprise as a whole; thereat its impact is differentiated with respect to various categories of users and objects of accounting monitoring. In inflationary economy various reporting elements lose their value at different pace, it means that inflation has different impacts on the same balance sheet items, in particular in view of the fact that the rate of increase in the raw materials prices may not match the growth in prices for finished products. In this situation, the dynamics of income and expenditure will be unbalanced, causing increased expenses. In some cases, when there is a loss of monetary assets value, inflation reduces the economic benefits, in others when experiencing a growth in monetary liabilities and an increase of liabilities maturities, the economic benefit is increased.*

*The study identified consistent patterns and conclusions, reflecting conceptual and methodical peculiarities of the inflation factor when making management decisions. Expedience of activities selection on reporting adjustment at the level of inflationary impact of an independent business process is justified. Its characteristics are given in the context of planning, implementation, monitoring and adjustment, in accordance with the conceptual provisions of Deming's cycle theory. List of techniques for the effective implementation of inflation and adjustment activities in a process-oriented management is formed.*

***Keywords:** Accounting, expenses, management accounting, economy crisis, inflation, business process.*

## 1. INTRODUCTION

Inflation often accompanies economy crises and is expressed in the increase of general price level, which significantly distorts the accounting data. Inflation characterizes decline of the monetary system of a state, increases the imbalance of key parameters for the functioning of the economy due to the uneven growth of prices for goods and services, which ultimately breaks the logic of

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the process of national income reallocation. At the micro level, it distorts the accounting data, which leads to incorrect managerial decision making by various stakeholders.

Methodology of management accounting and economic analysis in modern companies is largely determined by their operation environment, in this context, the application of adjustment methods of accounting information on the prevailing rate of inflation becomes increasingly popular.

Considering that all objects of accounting are evaluated in money terms, inflation affects the indicators of financial and economic activity and the amount of property that loses its purchasing power. This significantly complicates the comparison of economic activity facts in time and should be taken into account when carrying out analytical actions for making efficient managerial decisions.

There is now a clear conceptual, methodological and practice oriented challenge of improving the system of accounting and analytical procurement of business performance in an inflationary environment.

## **2. METHODOLOGY**

### **2.1. General Methodological Approaches**

Methodological framework of the research is formed taking into account the results obtained by Russian and foreign authors during the study of the impact of inflation on accounting and reporting system, legislative and normative acts of the Russian Federation on the development of financial accounting and management accounting systems. Research methodology is based on the set of fundamental methods of scientific knowledge: analysis, synthesis, dialectical unity of the qualitative and quantitative evaluation, system and hierarchical approaches, induction and deduction. In the research process a diverse set of tools and techniques were used: abstract-logical, monographic, calculation and constructive, economic and statistical methods, methods of system and comparative analysis, analytical, graphical, balance and etc.

Information and empirical base is represented by the data of the Federal State Statistics Service of the Russian Federation, the regional body of the Federal State Statistics Service in Stavropol Territory, data of field and questionnaire sociological researches, academic sources, information from printed periodicals, expert assessments and the results of the authors' calculations.

The research has examined various aspects of economy crisis impact on methods and techniques of accounting, economic analysis, budgeting, internal control system

of the organization, as well as financial resources management. It should be noted in this context the following results obtained by domestic and foreign authors: the special role of external environment in business management was identified (Shirokova G., Bogatyreva K., T. Beliaeva T. 2015); accounting and analytical tools to seek ways of balanced development of firms were studied and improved (Yakubiv, V 2015); methodical approaches for management accounting in a down economy were recommended (Bobryshev 2015); the concept of business model formation of the enterprise under the influence of various macroeconomic factors was disclosed (Magretta, Joan 2002); Russian and international experience in inflation regulation was systematized (Krasavina L., Pischik V. 2009); two method groups of adjustment for inflation were described: sample methods, when applying for individual items of accounting information and global methods, in which the initial values of most elements of financial accounting are adjusted (Matthews M.R., Perera M. Kh. B. 1999); a method of financial reporting updating in dollars of constant purchasing power was offered (Needles B. 2000); new classification attributes of adjustment under the influence of inflation were highlighted (Kaspina R.G. 2008). The following works are devoted to the description of methodological peculiarities of inflationary processes accounting: (Robson, K. 1994); (Küpper, H.-U., Mattessich, R. 2005); (Davis-Friday, P.Y., Rivera, J.M. 2000); (Konchitchki, Y. 2011).

An important aspect was the study of the differentiation of the territories at the macro level, under the impact of crisis factors (Litvin, D.B. et al. 2015). The works of M. Yu. Kazakov are devoted to the problems of finding ways of balanced development of socio-economic systems in conditions of crisis processes in the economy (Bobryshev, A.N., Y.V. Golchenko, M.Y. Kazakov 2014), O.V. Elchaninova (Elchaninova O.V. et al. 2014), A.N. Gerasimov and E.I. Gromov (Gerasimov A.N., Gromov E.I., Gulay T.A. 2015); (Elchaninova O.V., Tatarinova M.N., Grishanova S.V., Germanova V.S., Debeliy R.V. 2014). In the work (Fischer, S. 1993) it is proved that high inflation is not consistent with sustainable economic growth.

Transformation processes problematics of accounting and analytical procurement of economic entities management in unstable economic conditions is also disclosed in the writings of J. Burns (Burns J. Scapens, R.W. 2000.) S.A. Butler (Butler, S.A. Ghosh, D. 2015), V. Nagar (Nagar, Venky, and Gwen Yu. 2014), M. Walker (Schleicher, T., Walker, M. 2015), J. A. Smith (Smith J.A., Morris J., Ezzamel, M. 2005.) (Davison J. 2015); (Ezzamel M., Willmott H. and Worthington F. 2008); (Kharlamova, O. 2015).

Scientific studies on a number of associated problems show the complexity of managerial decision-making process amid inflation and hyperinflation processes in the economy.

## **2.2. Algorithm to Conduct a Study**

At the initial stage of the research the process of scientific thought development on techniques and methods implementation for adjusting financial statements data was examined as well as the characteristics of inflation accounting in different countries, then in this research the authors answer the question about how definite balance sheet items “react” on inflation. The important result was grouping of inflation processes influence on the system of accounting and analytical procurement of an economic entity. In this part of the research negative developments of inflation impact on the macro level have also been allocated. Characteristics of inflationary effects on the system of accounting and analytical procurement of an economic entity activities has made it possible to form a semantic profile of an enterprise with high/low risk of negative impact of inflation that characterizes the reporting options, the impact of inflation on which will have the most negative and the least negative impact. During the next phase the classification of the most common methods and ways of accounting data adjustment in an inflationary economy was carried out, based on what it was suggested to allocate inflation-adjustment activities into a separate business process, the methodology of which was described in the categories of “Deming Cycle”.

## **3. RESULTS**

### **3.1. The Grouping of Inflation Processes Influence on the System of Accounting and Analytical Procurement of Business Performance**

As part of the study the authors conclude that inflation affects differently on accounting users, for some, in the short term, it can bring a potential “benefit”, but generally in an inflationary economy, there is a substantial misrepresentation of data that leads to acceptance of wrong management decisions, or direct economic losses, in the long run affect the functioning of all economic entities. It is also noted that the main effects of inflation are: undervaluation of assets, distortion downward the costs decrease of an economic entity and the production cost of products, works and services, registration of the “fictitious” sum of profits and, as a consequence, overstating profitability ratios, as well as different profitability level of payment transactions.

Table 1 shows the grouping fragment of inflation influence on processes of the system of accounting and analytical procurement of enterprise performance. All factors are additionally grouped depending on the nature of the impact on accounting (financial accounting), accounting (management accounting), tax accounting, economic analysis, accounting for the factors of the direct and indirect impact.

**Table 1**  
**Characteristics of inflationary effects on the system of accounting and analytical procurement of the economic entity performance**

	<i>Impact of inflation on the system of accounting and analysis procurement of business performance</i>	<i>Nature of impact</i>	
		<i>direct</i>	<i>indirect</i>
Financial accounting	1. The role of accountant professional judgement is increasing when deciding on adjustments of the reporting data under conditions of high inflation		+
	2. Valuation on average historical cost (which is more in line with the need to respect the principle of prudence) makes accounting information irrelevant, reduces the comparability and reliability of accounting information. However, the use of valuation on current cost significantly increases labour intensity and expenses for the elaboration of necessary information		+
	3. If you use FIFO, the impact of inflation on the data of the balance sheet is levelled out, but the impact on the data in the report on financial results increases		+
Managerial accounting	1. Under the influence of inflation the relevance of the information for decision-making regarding inflation risks coverage increases		+
	2. In the cost structure of an economic entity new items of expenditure appear, such as the «inflationary risk insurance	+	
	3. Impossibility of determining the real value of assets and the amount of the financial result does not allow to generate adequate development strategy for an economic entity, as well as to choose the optimum business model		+
	4. Inflation complicates the process of pricing and often leads to sale of goods at reduced prices	+	
	5. Existing Forms of financial statements do not provide the ability to reflect the effects of inflation, causing the need to develop special forms of management reporting		+
Tax accounting	Due to the effects of inflation, current expenses (depreciation, material costs) underestimated resulting in distorted values of the cost price of goods produced and as a consequence an increase in profits tax. So-called inflationary profit appears amid simultaneous lack of own sources of funding.	+	
Economic analysis	1. Balance sheet in accordance with the Russian legislation is formed for a period of three years, which raises the need to bring historical data to comparable with reporting year mind for analytical action		+
	2. Undervaluation of property cost along with over valuation of financial results volume under the inflation processes influence increases the value of the performance indicators, notably profitability		+
	3. Conservative indicator of production cost comparable with revenue		+
	4. In view of the distorting of assets value and liabilities, the amount of liquidity and solvency ratios also does not match the actual situation of an economic entity		+
	5. Inflation causes undue increase in stock prices that could mislead an analyst to assess the financial condition of the economic entity		+
Accounting statements	1. The same assets are accounted for during the reporting period, in monetary units of varying purchasing power		+
	2. In an inflationary economy financial statements reflect better situation than it actually is		+
	3. Adjustment of reporting data makes it necessary to develop forms of management reporting	+	

It is noted that the direct impact worsens the company's financial condition, determines "consuming" of working capital and means the emergence of financial losses. In this context, inflation affects the accounting function such as ensuring the safety of property. In turn, under the indirect influence, the authors understand the impact of inflation on managerial decision-making algorithm due to distorted information, i.e., the impact of inflation on the realization of functions of accounting information.

Based on the results of semantic profile of an enterprise formation with the risk of negative impact of inflation (highlighted signs of high and low risk of inflation impact) concluded that inflationary economy in varying degrees affects virtually all of the enterprise's operating parameters, influencing its business model and key business processes that causes the need to develop practical approaches that take into account the impact of inflation on accounting data.

### 3.2. Classification of methods and techniques of adjustment of accounting data in inflationary economy

Existing methods and techniques of adjustment of accounting data according to the effect of inflation can be differentiated into two large groups: overall, in which all objects are subject to adjustment of financial accounting, affected by inflation and selective (not global) techniques when only individual objects of accounting and statement items are adjusted. In addition, there are methods introduced by international and domestic laws and regulations. The complex of adjustment methods of accounting data in an inflationary economy according to immanent characteristics was systematized and grouped (Figure 1). The choice of the techniques of adjustment of the accounting data depends on the specific economic conditions, inflation, qualification of employees accounting and analytical services, regulatory and methodological framework and many other factors. Table 2 provides an example of how inflationary processes affect the assessment of the performance of economic entity (Table 2).

**Table 2.**  
**The example of the effects of inflation on the assessment of the results of the economic entity**

<i>Condition</i>					
1. Trade Organization acquired 2000 units of goods cost 80 rub. per 1 unit. Then they were sold on an instantaneous basis		2. Let us suppose that by the end of the year under the impact of inflation the price of the same product increased up to 95 rub.		3. Let us suppose that by the end of the year under the impact of deflation the prices have fallen up to 70 rub. for 1 unit	
Accounting on actual cost method, thous. rub.		Accounting on contemporary value method, thous. rub.		Accounting on contemporary value method, thous. rub.	
Revenue	220	Revenue	220	Revenue	220
The actual cost of the purchase of goods	160	The actual cost of the purchase of goods	190	The actual cost of the purchase of goods	140
Profit	60	Profit	30	Profit	80



*Notes:* When using the method of actual cost accounting, the company after increasing prices up to 95 rub. could afford to purchase goods worth 160 thousand rub., as 60 thousand rub. aimed at other purposes, in number 1684 items, instead of the required 2000 units. Contemporary value accounting would allow spending for other purposes only 30 thousand rub. and thus to retain the amount of stocks in 2000 units. In turn, in deflation environment, the company could use 80 thousand. rub. for other purposes with the persistence of the previous volume of commodity stock.

<i>Use of adjustments</i>					
<i>1. The method of constant purchasing power</i>		<i>2. The method of adjusting for leverage</i>			
		<i>Constant purchasing power</i>		<i>The real cost</i>	
Revenue	220	Revenue	220	Revenue	220
The actual cost of the purchase of goods	184	The actual cost of the purchase of goods	184	The actual cost of the purchase of goods	190
		Operating profit	36	Operating profit	30
		Adjustment to the amount of borrowed funds	13.2	The actual increase in the cost of goods	6
Profit	36			Adjustment to the amount of borrowed funds	13.2
		Profit	49.2	Profit	49.2

*Notes:* (1) When using the method of constant purchasing power, the requirement for the capital is recalculated according to the actual rate of inflation, which is 15% in this example. (2) The method of adjusting for Leverage assumes that some part of the funds for the procurement of goods is levered, suppose it is 40%, then the amount of the loan (interest-free) will also influence the inflation that would result in inflationary income for the firm. (3) Increase of the value of the goods in our example is amounted to 18.75%, thus to reflect the value, adjusted according to the leverage, the sum of realized capital gains (190 thousand rubles-160 thousand rub.) is multiplied by the leverage ratio, which is 0.4 in this example. As a result, the income adjusted for leverage will be 42 thousand rub. (30 thous. rub. + 12 thous. rub.)

The methodology of the process approach is based on the implementation of the provisions of the Deming cycle (circle of quality), it means the cycle of PDCA (Plan-Do-Check-Act) (Deming W. 1966), (W.A. Shewhart 1939). Considering the Deming cycle as a constant circle of improvement of a business process, "inflation-adjustment activities" were described in its categories. PDCA enhances the quality of implemented business processes through continuous auditing and identifying of weaknesses. In the course of investigations, we have developed a list of tool-software means, contributing to the effective implementation of the inflation-adjustment activities for each phase (of Deming cycle). These activities are the input of business process, whether any of the documents or actions in the area of accounting, analysis and control.

#### 4. DISCUSSION

General resume of discussion in scientific and expert community the methodical aspects of accounting of inflationary processes and their correlation with the results

of most cited researches in this area (Robson, K. 1994); (Küpper H.-U. 2005); (Davis-Friday P.Y., Rivera J.M. 2000); (Konchitchki 2011) confirm the point of view of the authors about the need for permanent accounting of inflation factor when making management decisions; as well as the selection of inflation-adjustment activities into a separate business process. The study does not contradict the fundamental works in the field of accounting (Burchell S., Clubb C., Hopwood A., Hughes J., Nahapiet J. 1980); (Bushman R.M. Smith A.J. 2001); (Hopwood A.G.T 1987); (Barth M.E., Landsman W.R., Lang M.H. 2008); (Otley D.T. 1980); (Hines R.D. 1988); (Fields T.D., Lys T.Z., Vincent L. 2001); (Roberts J., Scapens R. 1985).

## 5. CONCLUSION

The carried out research, at this stage, has shown the following results:

1. The factors of influence of inflation processes in the economy on accounting and analytical procurement of the economic subject were systematized, they were grouped in terms of their direct and indirect influence on the system of financial accounting, management accounting, tax accounting, economic analysis, accounting reports, the system of internal control and audit that made it possible to form a semantic profile of enterprises with high/low risk of negative impact of inflation;
2. The methods and techniques of adjustment of accounting data in an inflationary economy were classified. They have justified new economic category such as "inflation-adjustment activities", interpreted by authors as the process of levelling influence inflationary and deflationary phenomena in the economy to a system of accounting and analytical procurement of activities of the economic entity through a holistic set of measures, procedures and methodological approaches in the system of financial and managerial accounting, analysis and control, resulting in the user receives "clean" data from inflationary impact;
3. By comparing the inflation-adjustment activities with immanent features connected with the main, serving and managing business processes, the expediency of their allocation in independent business process was justified;
4. The structure and the characteristic of sections of business process passport "Inflation-adjustment activities" has been proposed; its use will increase the efficiency of the system of budgeting, will provide an opportunity to calculate the efficiency of a business process, will contribute towards strengthening control and analytical functions in taking appropriate decisions;
5. It has been noted that the crisis budgets should be developed on the principles of continuous planning; when according to the results of budgeting of the 1<sup>st</sup> quarter, the budget for the 2<sup>nd</sup> quarter is reviewed, depending on the external market conditions.



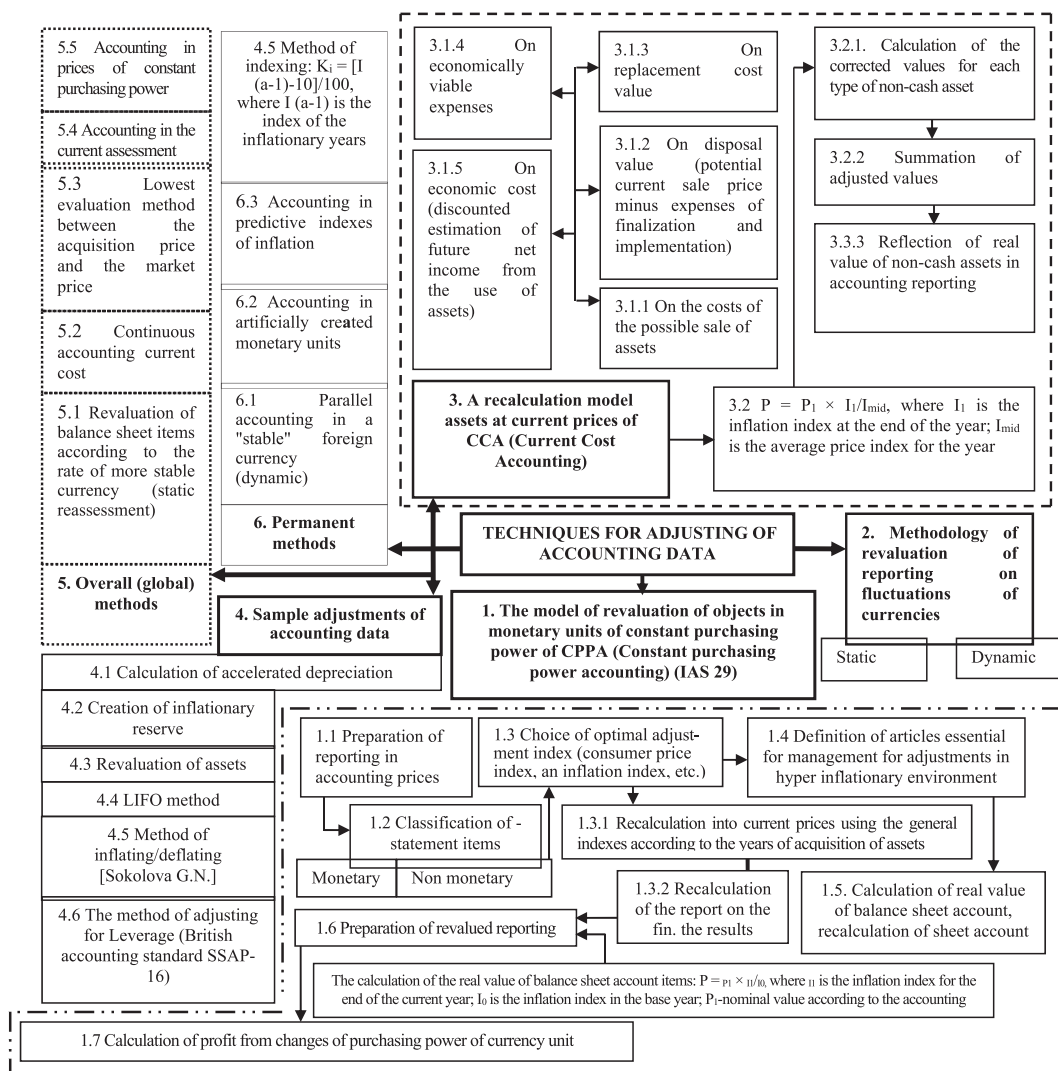


Figure 1: Classification of methods and techniques of adjustment of accounting data in an inflationary economy

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