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INFLATION AS UNCERTAINTY FACTOR IN STRATEGIC FINANCIAL PLANNING SYSTEM OF INDUSTRIAL ENTERPRISES

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ИНФЛЯЦИЯ КАК ФАКТОР НЕОПРЕДЕЛЕННОСТИ В СИСТЕМЕ СТРАТЕГИЧЕСКОГО ФИНАНСОВОГО ПЛАНИРОВАНИЯ ПРОМЫШЛЕННОГО ПРЕДПРИЯТИЯ

The article discusses the importance of financial planning in the strategic planning of an industrial enterprise; observes the causes of inflation in the Russian economy, forms of its manifestation, and their mutual influence. The article proposes to complement the discounted cash flow method by moving average indicators that would take into account the inflation rate in the development and implementation process of strategic financial planning of an industrial enterprise.

INFLATION. STRATEGIC PLANNING. FINANCIAL PLANNING. CASH FLOW DISCOUNTING. MOVING AVERAGE.

Раскрывается значимость финансового планирования в системе стратегического планирования промышленного предприятия. Рассматриваются причины инфляции в экономике России, формы ее проявления и их взаимное влияние. Предлагается дополнить метод дисконтирования денежных потоков применением показателей скользящих средних, которые учитывали бы темпы инфляции в процессе разработки и реализации стратегических финансовых планов промышленного предприятия.

ИНФЛЯЦИЯ. СТРАТЕГИЧЕСКОЕ ПЛАНИРОВАНИЕ. ФИНАНСОВОЕ ПЛАНИРОВАНИЕ. ДИСКОНТИРОВАНИЕ ДЕНЕЖНЫХ ПОТОКОВ, СКОЛЬЗЯЩИЕ СРЕДНИЕ.

Planning financial resources and sources of their coverage is one of the essential elements of the strategic planning of an industrial enterprise. The value of financial planning for businesses is as follows: it realizes strategic goals in the form of specific financial indicators, provides financial resources for the input in production plan, provides the possibility of determining the viability of the company in a competitive environment, and serves as an instrument of financial support from external investors.

On the one hand, planning prevents erroneous actions in the areas of finance, on the other hand, it reduces unused opportunities.

The main objectives of financial planning at the enterprise are:

– providing production, investment and financing activities with the necessary financial resources;

– identifying ways of effective capital investment and the assessment of its rational use;

– finding internal reserves to increase profits by means of economic use of funds;

– establishing rational financial relations with budget, banks and counterparties;

– safeguarding the interests of shareholders and other investors;

– controlling the financial condition, paying capacity and creditworthiness of the company.

The financial plan is intended to provide financial resources for the entrepreneurial plan of the business unit; it has a big impact on the economics of the enterprise. This is due to several circumstances.

Firstly, the financial plan compares the planned expenditure with the implementation of the real opportunities, and, as a result, is achieved by adjusting the material and financial balance.

Secondly, the articles of the financial plan are associated with all the economic indicators of the enterprise and linked to the main sections of the business plan: production of goods and services, research and technology development, production and management improvement, production efficiency, capital construction, logistics, labor and personnel, revenue and profitability, economic incentives, etc.

Kolbachev E.B. stresses the importance of the financial condition of the company and the indicators characterizing it in the modern production system. «The financial condition of the company is the result, on the one hand, of its production and economic activity, on the other hand, of the external environment (to which the production and business activities of the enterprise should be adequate). In addition, the financial figures are, in essence, one of the many information resources available to the enterprise, and should be considered as part of the overall resource system. This approach does not contradict the fundamentals of the modern market economy» [4].

Thus, financial planning influences all the aspects of activities of a business unit by selecting the objects of financing, transferring funds and promotes the rational use of manpower, material and financial resources.

Financial planning is inextricably linked with the use of indicators of monetary value. In terms of money circulation when the monetary unit is a unit of account and measurement of commodity prices and subject to inflationary depreciation, plan figures can acquire a high degree of conventionality.

Inflation is a complex multifactorial socio-economic process determined by the interaction of the sphere of production and the sphere of circulation, disproportion between different spheres of the national economy: accumulation and consumption, supply and demand, revenues and expenditures of the state, money supply in circulation and money needs of the economy.

Typical manifestations of modern inflation are a general rise in commodity prices and the depreciation of the national currency against major foreign currencies. In a market economy, the crisis of monetary circulation can be judged only by the dynamics of prices, so inflation is both a monetary and price phenomenon.

Modern inflation may be caused by both internal and external factors, the most important of which are:

– excessive emission of currency;
– loss of confidence in the national currency;
– off-balance country pay balance.

Excessive emission of currency is determined by a number of factors:

– imbalance of public expenditure and revenue, budget deficit, widespread use of domestic borrowing to cover the budget deficit which increases the money supply, and therefore leads to higher prices;
– increasing the mass circulation of credit instruments which result in the expansion of the credit system;
– releasing into circulation means of payment which are not completely state-controlled (e.g. finance bills);
– excessive investment which leads to the overproduction of some goods and, at the same time, to a deficit of others, which increases the imbalance in the economy and monetary system;
– faster growth of wages in comparison with an increase in labor productivity (this phenomenon can take place in the public sector as a result of populist policies to increase the incomes of the population), etc.

Non-monetary causes of inflation define it indirectly, but ultimately lead to higher prices and the depreciation of money. Therefore, it is advisable to allocate the following non-monetary causes of inflation:

1. The deformation of the structure of the economy. In the case of excessive development of heavy industry and mining, their employees come to the consumer market with a high level of income without producing non-production goods. In this case, excessive demand is formed alongside the gap in supply of necessary consumer products. In addition, it provides the basis for cost-push of the latter. Adverse effects are also observed in the case of growth of the service industry which unjustifiably exceeds reasonable limits. The fact is that the service industry is characterized, on the

one hand, by the slower growth of labor productivity compared to the sectors of material production, and on the other hand, by a large proportion of wages in total production costs.

2. The militarization of the economy. State funding of military spending will inevitably lead to an increase in money supply at relative impoverishment of the market of consumer goods and services.

3. Monopolism in economy. Natural, economic, artificial monopolies are able to raise their prices without corresponding increase in consumer qualities. The prices are usually set by the principle of «allocable costs of production plus guaranteed profit». This leads to a lack of interest in reducing costs and cost based management. As a result, in particular, new technology which leads to reducing costs is scarcely used in a natural monopoly. In contrast, capital-intensive technologies are actively implemented.

4. The extraordinary circumstances of socio-political and economic nature (union demands for wage growth, strikes, growth of political and economic instability).

5. Errors in the conduct of monetary, fiscal and pricing policies of the state. In particular, in the Russian Federation the taxation is emphasized on indirect taxes. But indirect taxes are directly included in the price structure. Thus, the Russian practice of taxation leads to higher prices and requires corresponding growth in the money supply.

Among the external causes of inflation we should highlight the following:

– the inflow of foreign currency into the country in exchange for domestic currency, which demands additional issue of national means of payment;

– the falling rate of the national currency leads to an increase in import prices and promotes the growth of the general price level in the country;

– high demand for imported goods which are more expensive in comparison with similar national products, which promotes the rise in price of the latter through the mechanism of «pulling» the price level.

As a complex, multifaceted phenomenon, inflation can be classified from different perspectives. The factors determining inflation can be classified into two types.

The first group includes the factors that cause excess demand (for money supply) over supply (commodity weight), which results in the violation of the laws of monetary circulation. Eventually, demand pull occurs. The logic circuit is as follows. Excess of demand over supply causes an increase in price. Higher prices at fixed costs provide profit growth and growth of workers' income. This growth leads to the next round of increase in demand, a new level of pricing up. Typically, this type of inflation is most often seen at full employment.

The second group consists of the factors that lead to the initial increase in costs (the costs of salaries, materials, energy, etc.) and the prices of commodities, supported by further pulling of the money supply to a higher level. There is cost-push inflation. The logic circuit: the growth of the prices of factors of production (production costs) determines the reduction in supply of goods and, therefore, increases in commodity prices. An increase in nominal wages, however, does not mean an increase in real wages, as prices rise faster. The increase in wages, increasing costs of raw materials, components, fuel, energy, etc. gives a new impetus to the growth of production costs, which leads to a new rise in prices. If the money supply does not increase quickly, does not adapt to the increased level of prices, a cash flow problem arises. There is a danger of business interruption, reducing community weight.

Cost inflation can induce the so-called inflationary spiral of prices and wages. Wage growth in the revision of the tariff agreement between employers and employees under certain conditions is a source of aggravation of cost inflation. Originally, a new level of wages is established in the relevant segment of the labor market, then a change in the general level of wages in the whole country. If this process is not balanced by countervailing factors, such as labor productivity growth, the increase in unit costs of production leads to a reduction in production. With the increasing demand, reduction in the supply leads to higher prices. Rising prices, in turn, give impetus to the beginning of the next negotiation of workers and employers about the changes in earnings. Thus, the situation is repeated at a new level, the next turn of the spiral «wages – price».

Proposal inflation is a variety of cost-push inflation. This type of inflation is associated with underutilization of production capacities, for example, in connection with the technical

reconstruction and modernization of fixed capital. Underutilization of the available capital leads to a reduction in output, and hence to a decrease in the economies of scale. This is expressed in the growth of unit costs. A higher cost per unit of output reduces profits and volume of production, which the firm is willing to offer at the current price level. If the degree of price elasticity of demand can shift the increased costs to the consumer, it may lead to a decrease in supply of goods and an increase in prices.

Demand pull and cost-push inflation are linked. Excessive money supply in the economy creates increased demand, in response to which prices growth occurs. Being a product of unbalanced monetary circulation, demand inflation spreads further, increasing irregularity and disproportionate development in various areas of management, ultimately leading to cost-push inflation.

In modern Russia, the fight against inflation is the prerogative of the Bank of Russia (Russia is no different from other countries in the formulation of the key objectives of the Central Bank), in line with global trends following the ideas of monetarist concept of state economic regulation. However, unlike in developed countries, the causes of inflation in Russia are not so much determined by monetary factors as by the tariff policy of the natural monopolies. So it's hard to expect the desired result of inflation targeting only by the Bank of Russia.

In connection to this, the subjects of economic relations that are not directly related to the monetary authorities should contribute to the reduction of the rate of inflation and forecast of its level in the future. This approach to the problem of inflation fits into the concept of shared values of business and society.

Here we vindicate the position of Akmaeva R.I. «Like in Western companies that have adopted the idea of shared values, the leaders and managers of Russian companies will also require new knowledge and skills for better identification the pressing needs of society, the understanding that business and society need to reunite and business should take the initiative, and government agencies must learn to work so that common values came in the foreground in their activities» [1].

Thus, the rate of inflation not only should be taken into account when planning internal indicators of individual industrial enterprises, but also when assessing the innovative potential of the industrial cluster.

Babkin A.V. identifies the following groups of parameters of estimation of innovative potential of enterprises of the industrial cluster [2]:

- financials indicators;
- indicators of workforce potential ;
- indicators of inventory and logistics management;
- information resources indicators;
- organizational and managerial indicators;
- indicators of market position;
- innovation indicators of the company.

Each of the above groups of indicators involves the prices of inputs or finished products, which in the course of time are subject to adjustments that take into account inflation rate.

The amount of money in different time periods are brought to the desired point in time now and in future by means of two basic methods – the method of compounding interest rates and interest discount. At that, the interest rate (interest rate – r) is a standard. In our case, the interest rate represents the rate of inflation.

Accretion is understood as the process of increasing the initial amount as a result of interest increase. Economic meaning of the accretion method consists in determining the quantity which is or may be obtained from an initial (current) sum as a result of conducting the operation. In other words, the method allows determining the future value (future value – FV) of the current amount (present value – PV) after a certain period of time based on the given interest rate r.

Operations of money accretion at an interest rate are more simple and fairly well understood, since we have to face them quite often when borrowing or lending money. However, discounting of cash flows is not less important, as well as bringing their future value to the current time point to ensure the comparability of time–phased payments.

Discounting is the process of computing the value at a given time by its known or perceived value in the future.

In economic rationale, the discounted value of PV shows contemporary (from the current time point) value of the future value FV.

It is obvious that discounting, in its essence, is a mirror image of accretion. The interest rate r used is called the discount rate.

Depending on the conditions of financial transactions both accretion and discounting may be carried out with simple and complex interest.

As a rule, simple interest is used for short-term financial transactions that last less than a year. In this case, the basis for interest calculation for each period is the original (initial) amount of the transaction.

In general, accretion and discounting at the rate of simple interest is carried out according to the following formulas:

$$FV = PV(1 + rn),$$

$$PV = \frac{FV}{(1 + rn)},$$

where n is the number of periods; r is interest rate.

Compound interest is widely used in the long-term financial operations which last over one year. However, they can be used in short-term financial transactions, if specified by the terms of the transaction or due to objective necessity (for example, high levels of inflation, risk, etc.). Here the basis for interest calculation for the period includes both the original amount of the transaction and the amount of interest already accumulated by that time.

$$FV = PV(1 + r)^n,$$

$$PV = \frac{FV}{(1 + r)^n}.$$

In effect, depending on the terms of a financial transaction, interest may be charged several times a year, for example, monthly, quarterly, etc. In this case, the ratio to calculate the future value will be:

$$FV = PV\left(1 + \frac{r}{m}\right)^{mn},$$

where m is the number of interest periods per year.

There is often a need to compare the conditions of financial transactions that involve different interest periods. In this case, interest rates should be reduced to their annual equivalent:

$$EPR = \left(1 + \frac{r}{m}\right)^n - 1.$$

The resulting value is called an effective interest rate (effective interest rate – EPR), or the rate of comparison.

There are several different ways to identify the main trends and forecast financial growth within the method of discounted interest rates: moving average, analytical graduation, mechanical evening out and others.

Moving average is a fairly simple tool to graduate price ranges, which makes any trends more visible. The simple moving average is defined as the average price in several periods, ending with the current one.

In order to identify the main trends by the moving average method, we should first of all define its units. The units of the moving average shall be composed of the number of periods corresponding to the yearly cycle of activity in the studied phenomenon. When applying the method of moving average to monthly dynamics, 12-termed moving averages are calculated, followed by centering the values obtained. The term «moving average» means that a set of averaged values is continuously moving in time.

This method allows detecting a trend to describe it, but it is impossible to get a generalized statistical evaluation of the dynamics by this method. The solution to this problem is achieved by analytical alignment.

The main content of the analytical method of graduation is that the main development trend of yt is calculated as a function of time:

$$\dot{Y}t = f(\mathrm{t}).$$

The determination of the theoretical (calculated) levels yt_i is based on the so-called adequate mathematical function that best reflects the basic time series trend.

The most important problem to be solved in the application of the analytical method of graduation is the selection of the mathematical function used to calculate the theoretical trend levels. The conclusions about trend patterns of the phenomena depend on the solution of this problem. If the selected math function is adequate to the main trend of temporal development of the phenomenon, the trend model synthesized on this basis may have useful application in the study of the dynamics of commercial activity on the basis of key financial indicators, forecasting and other practical purposes.

There are different types of temporal development of statistical indicators: even development, uniformly accelerated (uniformly decelerated) development, development with variable acceleration (deceleration), exponential development, and development with a slowdown at the end of the period.

The selection of appropriate function is performed by the least square method – the minimum deviation of the sum of squares between the theoretical yt_i and empirical y_i levels:

$$\Sigma(\dot{Y}t - \dot{Y}i)^2 \rightarrow \min.$$

The essence of this method is to find the first and second successive difference.

To describe the main trend of the time series we use the following equation:

$$y_t = a_0 + a_1 t,$$

where a_0, a_1 are the parameters of the equation; t is time.

Thus, power functions are used when modeling the main trend of financial performance. This is due to the fact that the parabola and linear functions describe the increase or decrease trend more accurately. When additional properties appear, more sophisticated methods are necessary.

Identified trends of indicators of the financial activity may extend to their future development. The theoretical basis for this is the property of the socio -economic phenomenon – inertia. That is, it allows identifying the relationship between the dynamic equations. Extrapolation gives the opportunity to get the point wise value of financial performance indicators forecast.

But in any case, the method of extrapolation cannot be the only method to confine to. Adapted forecasting methods, the Brown's method, in particular, and a harmonic balance method are necessary.

The essence of the Brown's method is that the number of time series is smoothed using a weighted moving average where the weights are subject to exponential law. This average is called exponential and is denoted $S_t(y)$. It allows on the basis of information on the economic dynamics of the process to trace patterns on the most important, i. e. the last levels. The influence on the early levels is not very high, as they are given the least weight. Exponential moving average is calculated by the formula:

$$S_t = ay_t + (1 - a)S_{t-1},$$

where S_t is exponential average value at the time t; y_t is the value of the economic process in time t; a is the weight of t^{th} value of time series (or smoothing parameter); S_{t-1} is exponential average value at the time $t - 1$.

The formula shows that in calculating the exponential average $S_t(y)$ only the previous exponential moving average S_{t-1} and the last observation are used, and all the previous observations are neglected. A consistent application of the formula makes it possible to calculate the exponential moving average $S_t(y)$ of the values of all the levels of time series.

The most important characteristic of a model of exponential smoothing is the one on which the forecast is actually calculated. The closer to 1 the value of the parameters is, the higher is its value for the forecast. That is, the forecast takes into account mainly the impact of recent levels of time series. If the parameter value is close to zero, the time series weights dynamics decrease slowly, which means that the forecast takes into account all previous series levels. Typically, the value is selected based on the careful analysis of the raw data, but in some cases this value is determined based on the smoothing interval formula:

$$a = \frac{2}{n+1},$$

where n is the number of initial data in the time series.

However, it should be kept in mind that in this case the parameters are totally dependent on the number of observations n. Most often, to solve practical problems and is assumed to be 0.1, 0.15, 0.2, 0.25, 0.3.

Exponential smoothing method has its advantages and disadvantages. Among the advantages of the method it is necessary to note its accuracy, which increases with the number of levels of the series. Economic series tend to be short so the study of economic time series method of exponential smoothing does not have time to reflect all the changes that occur in a number of speakers. There is no method for selecting the optimal value of the smoothing

parameter. The accuracy of this method projections decreases with an increase in a forecast interval. It is effective for short-term forecasting.

An important element is the accuracy and reliability of the forecast. The accuracy of the forecast is usually judged by the value of the forecast error, which is defined as the difference between the predicted value and the actual value of the variable.

In determining the forecast error, we often calculate a relative error – the ratio of the absolute prediction error for the expected (or actual) value of the attribute. It should be noted that the verification of accuracy of the forecast unit indicates a small degree of accuracy, since a large number of different factors affect the formation of the phenomenon investigated.

H. Theil proposed to use mismatch factor for measuring the quality of forecasts. The proposed ratio is calculated as the quotient of the square root of the sum of squares of the absolute prediction error divided by the sum of the squares of the actual change in the variable.

In case the mismatch factor Kn = 0, all the values are the same (with perfect forecast). If Kn = 1, the forecast has an error [5].

In summary, it should be noted that at present in the Russian Federation direct state and regional regulation of prices is carried out by means of:

- fixing prices and tariffs;
- fixing maximum prices and tariffs;
- fixing growth rates of prices limits;
- fixing profitability limits;
- -fixing maximum supply and sales and margins;
- declaring prices;
- fixing recommendation prices for key products;
- fixing parity prices.

The specific nature of Russian inflation requires special techniques and methods of regulation. The purpose of this regulation is to establish control over inflation and achieve growth rates acceptable for the national economy. The improvement of anti-inflation policy in Russia should be aimed, in our opinion, at the following objectives. The first goal is the revival of real investment and sustainable growth of the national economy. Another compelling issue is restructuring of the economy and adapting it to the needs of the market at the expense of de-monopolization and regulation of existing monopolies, promotion of competition, conversion of the military-industrial complex, government promotion of industries and high-tech enterprises and high-tech industry.

One of the pressing problems in modern Russia is the reorganization and restructuring of the banking system, the shift of banks from speculative operations and lending operations to serve the real sector of the economy, development of means to hedge risks of banks and depositors, strengthening banking supervision. In order to ensure availability of the required financial resources to the real economy enterprises, recovery of the stock market and control over its activities should be ensured; protecting the interests of Russian producers by protectionist trade policies, effective regulation of exchange rate, reducing the dependence on foreign loans by generation resources; restraining «capital flight» and its repatriation; overcoming inflationary expectations by achieving political, economic, and legal stability in the country.

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