

## INNOVATION APPROACHES OF SOCIAL RISK'S ESTIMATION AND FORMATION OF SOCIAL INSURANCE FUNDS

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**Abstract.** The main aspects of the social insurance are defined in the article, the author variant of the “social insurance” definition’s interpretation is revealed and the type aspect of the social insurance’s functions is expanded, the innovation variant of the social risk’s estimation is presented. The multiplication five-factors estimation model of the state social insurance funds’ general state is offered.

**Keywords:** social insurance, innovation segment, criteria of estimation, social risk, social risk’s area, insurance deposits, insurance payments, multiplication model.

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### Introduction

Ukrainian society needs root changes in the system of social insurance. It’s connected with the fact that the well-regulated system of the state social insurance influences positively both the development of the country’s economy and the level of the people social protection. At present there is a contradiction in Ukraine between the necessity of conducting the rigid social-economic policy, due to the existing problems, and the needs in provision the necessary social protection for the population.

At the same time, the problem of the acting social insurance’s estimation appears, resulting from the changeable environment of the economic sector’s functioning in the country. It becomes clear that with the change of the social-economic environment in the country, each of its elements requires more innovation approaches at the different stages of studying.

Thus, the estimation system’s modernization of the state social insurance system should become one of the prior directions, giving, in its turn, an opportunity to move more closely to the decision-taking. It’s worth putting the innovation regulator, which would be based on the integral criterion of estimation, into the basis of the researches. We deal with the improvement of the theoretical-methodological fundamentals of the state social insurance’s estimation due to the adaptation of the innovation criterion. The grounding of the mentioned offer lies, from one side, in the modernization of the approaches to the estimation of the state social insurance and, from the other side, it’s worth presenting the set of instruments to the users, which would create the additional, more qualitative information flow in order to take the decisions, corresponding to the modern challenges of the society. Taking into account all the mentioned arguments, we consider the innovation modernization’s problem of the approaches to the estimation of the state social insurance to be actual enough.

## Scientific and applied problems of the social insurance's theoretical-methodological principles

Scientific and applied problems of the social insurance's theoretical-methodological principles are constantly in the center of the leading experts' attention, including, among others, V.A. Skurativskiy, V.P. Troschynskiy, P.K. Sytnik (2012), V.O. Bezugla, D.M. Zagirnyak, L.P. Shapoval (Bezughla, Zaghirnjak, Shapoval, 2011), O.O. Kochemyrovska and O.M. Pyschulina (2012), V.D. Roik (2014), A. P. Arkhipov (2014), S.O. Kropelnytska and T.V. Solodzhuk (2013), M.I. Malyovanyi and P.K. Bechko (2012), T.M. Zavora (2016). In spite of the presence of the solid researches on these problems, many problems were accumulated in the theoretical and practical areas of the social sphere's functioning

The estimation peculiarities of the social insurance's separate aspects in the context of decision-taking, under conditions of the management market levels' adaptation are investigated incompletely. Particularly, the innovation approaches to the estimation cycle of the state social insurance's funds are not grounded enough, the complex investigations of the separate aspects of the state social insurance funds' reforming are practically absent, except the existing legislative initiatives, having the slowing down form of introduction in most cases.

It becomes clear that the essential changes in the social-economic processes of the society development in Ukraine, the absence of the stabilization platform of the state social insurance funds' formation and use requires the generalization and systematization of the theoretical and methodological principles, especially from the estimation position of the existing social insurance system's correspondence to the real state of the country's population vitality, with the purpose of gaining new results of the investigation, which may be used in the modern managerial cycle.

The main aim of the work is the elaboration of the social risk's estimation methods and the formation of the social insurance funds, taking into account the innovation regulators.

The social insurance in Ukraine needs the root changes that should be based on the existing scientific elaborations and innovation regulators. As a rule, the social insurance is examined as a form of the population's social protection. In most cases the social insurance is based on the system of measures, dealing with the material provision and social service in the old age, in case of the incomplete or complete loss of the ability to work, the loss of the breadwinner, unemployment and the other cases, being foreseen by the legislation.

At the present time, the social insurance in Ukraine is at the stage of its formation and development, the searches of its funds' optimal structure and main functions are going on. From the classical position, the social insurance is called to perform such functions as: protecting, compensating, reproductive, redistributive and stabilizing ones.

However, the existing economic challenges in the country point out the necessity of the social insurance functions' widening due to the adaptation of such functions as scientific character and innovativeness. Their introduction does give an opportunity to form a more powerful platform for the reforms' conducting. Due to this, we offer the following content richness of the recommended functions:

1. Scientific character – the use of the scientific methods and ways at the formation and the purpose use of the general-obligatory state social insurance's means.

2. Innovativeness – the realization of the set of measures, dealing with the adaptation of the innovation regulators in the system of the social insurance.

The analysis of scientific investigations has given an opportunity to define the social insurance as the national system with the juridical basis, regulating the social protection of the society individuals and basing on the distinctly drawn structure of the accumulated funds. To our mind, such an interpretation of the “social insurance” definition has several advantages:

- the interconnection between the state and its role aspect in the society individuals’ vitality is revealed;
- the attention is paid to the adaptation mechanism of the social insurance in a society through the accumulation funds;
- the legal aspect of the society individuals to receive the social protection from the country is lighted up.

The peculiarity of the modern social insurance is the reduction of the social risk till minimum. V.O. Bezugla, D.M. Zagirnyak and L.P. Shapoval (Bezughla, Zaghirnjak, Shapoval, 2011: 9). offer to understand the “social risk” category as the probability of the material state’s worsening in result of the incomplete or complete loss of wages or labor profit due to the objective socially essential reasons and also due to the additional care expenditures on children and other members of the family, requiring assistance, on satisfaction of needs in medical and social services”.

The problem of the social risk is marked by the actualization in such a way as the country’s state is marked by the reduction of management efficiency and high inflation, production recession under conditions of the acting economic instability and, as a result, the essential reduction of the real wages, pensions occurs.

The methodological component is practically absent in the estimation system of the social risk’s level. We consider it’s necessary to use the method of the risk’s quantitative estimation. It will give the experts an opportunity to investigate more deeply not only the probability level of the material state’s worsening of the society’s individuals, but first of all, an opportunity to forecast the content of measures on losses reduction from the situation, which really will appear in result of the existing economic challenges in the country. In the presented case, it is offered to use such an algorithm as:

$$D \text{ (s.r.) ec.in.} = E \text{ (s.c.) ec.in.} \times P \text{ (s.c.) ec.in.}, \quad (1)$$

D (s.r.) ec.in. – the social risk’s degree under conditions of economic instability;

E (s.c.) ec.in. – expectable social costs under conditions of economic instability;

P (s.c.) ec.in. – the probability of social costs under conditions of economic instability.

The efficiency of the presented criterion is worth adapting at the same time with the definition of the social risk’s areas. Thus, it’s suggested to introduce such an indicator as the general fund of the state social insurance (FS (s.ins.)).

Using the table method of the data generalization, let’s characterize the areas of the social risk (table 1).

Taking into consideration the rules of the risk’s estimation, it’s also necessary to set the empirical scale for the social risk too. In the opinion of L.I. Donets (Donecj, 2006: 54) and N.I. Mashyna (Mashyna, 2003: 61), in order to define the risk’s area and its level, it’s advisable to use the empirical scale. However, the estimation of the risk’s size according to the empirical scale, to L.I. Donets’ mind, is conventional enough, because at the risk’s estimation, a great role is played not only by the probability, with which the loss may be

present, but the very size of the loss itself. In our case, it is advisable to involve the following empirical scale for the definition of the social risk’s area and its level (table 2).

Table 1

**Recommendation Aspect of the Social Risk’s Areas Definition \*\***

Social Risk’s Area	Content Characteristics of Risk’s Event *
Riskless Zone of Social Risk	Means of the State Social Insurance’s General Fund cover fully the needs of the society individuals’ social protection.
Normal Social Risk’s Area	Is characterized by the level of expectation of social costs that does not exceed the level of the general fund of state social insurance: $[E_{(s.c.)} < (FS_{(s.ins.)})]$
High Social Risk’s Area	Is characterized by the level of expectation of social costs, which exceeds the actual level of the general fund of state social insurance, but it is smaller than its planned amount: $[FS_{(s.ins.)\ plan.} > E_{(s.c.)} > FS_{(s.ins.)\ fact.}]$
Maximum Social Risk’s Area	The possible level quantity of the expectable social costs will exceed the size of the state social insurance’s general fund, but will be less than the expectable quantity of the Ukraine state budget’s expenditures on human capital: $[Exp_{(s.b.)\ h.c.} > E_{(s.c.)} > FS_{(s.ins.)}]$
Critical Social Risk’s Area	The level of the expectable social losses achieves the quantity of the Ukraine state budget’s expenditures on human capital, i.e. the social crisis is coming: $[E_{(s.c.)} > Exp_{(s.b.)\ h.c.}]$

Note: \* -  $E_{(s.c.)}$  – expectable social costs;  $FS_{(s.ins.)\ plan.}$  –planned level of the general fund of state social insurance;  $FS_{(s.ins.)\ fact.}$  - actual level of the general fund of state social insurance;  $Exp_{(s.b.)\ h.c.}$  – expenditures of the Ukraine state budget on the human development.

\*\* - the author’s propositions.

Table 2

**Empirical Scale of the Social Risk’s Probability \***

Undesirable Result’s Probability of Social Risk	Social Risk’s Areas	Names of the Social Risk’s Gradations
0 - 25%	normal	Small social risk
25% - 50%	high	Average social risk
50% - 75%	maximum	Maximum social risk
75% - 100%	critical	Catastrophic social risk

Note: \* - the author’s proposition

Such an approach will give an opportunity to foresee the necessity of the taken decision, dealing with the adaptation of measures on the social risk’s avoidance. Besides, the experts will receive the additional instruments for the estimation of the state social insurance’s different aspects.

A problem of the integral criterion’s absence also appears from the position of the insurance activity’s estimation methods of the general-obligatory state social insurance’s funds. However, the role aspect of the mentioned estimation is high enough. It’s connected

with the fact that the insurance activity’s relative indicators of the general-obligatory state social insurance’s funds lie in the basis of: the separate articles’ comparison of profits (expenditures) and the budget indicators in the whole; the study of the profits’ (expenditures’) structure; insurance payments; the budgets’ plan fulfillment analysis of the general-obligatory state social insurance’s funds; measuring of the time changes’ in the cut of the regional departments and in the whole throughout Ukraine, according to the types of the social insurance. If you apply to the insurance activity’s estimation criteria package of the general-obligatory state social insurance’s funds on the basis of the relative indicators, than you may ascertain the fact that it’s advisable to introduce an innovation regulator in the cut of the integral criterion. The following indicators are selected with this purpose (table 3).

Table 3

**Algorithm Definition of Insurance Activity Indicators of the General-Obligatory State Social Insurance’s Funds**

Definition Algorithm of Estimation Indicators	Estimation Indicators Characteristics of the General-Obligatory State Social Insurance’s Funds
$C1 = \frac{\text{Insurance Payments Ins (paym)}}{\text{Insurance Deposits Ins (depos)}}$	Payments’ Coefficient of the Insurance Compensation in the Calculation to 1 Hryvna of the Insurance Deposits
$C2 = \frac{\text{Profits of Social Insurance’s Funds Pr (s.ins)}}{\text{Insurance Payments Ins (paym)}}$	Profits’ Level Coefficient of the Social Insurance’s Fund in the Calculation to 1 Hryvna of Expenditures in the Whole and for Different Types of Insurance
$C3 = \frac{\text{Insurance Payments Ins (paym)}}{\text{Reserve Fund R (f)}}$	The Coefficient Defines the Level of the Insurance Payments in the Calculation to Every Hryvna of the Reserve Fund
$C4 = \frac{\text{Insurance Deposits Ins (depos)}}{\text{Insurance Payments Ins (paym)}}$	The Coefficient of the Insurance Deposits’ Level in the Calculation to 1 Hryvna of the Insurance Payments
$\text{Cr. Innov.} = \frac{\text{Payments from Different Types of Insurance (ins types)}}{\text{Profits of Social Insurance Fund Prof (s.ins)}}$	The Innovation Criterion of the Expenditures’ Level Definition in the Calculation to Every Hryvna of the Reserve Fund

To our mind, the experts should involve the five-factors multiplication model of the general- state social insurance funds’ condition estimation. The multiplication model may have the following type:

$$SF (s.ins) = \frac{\text{Ins (paym)}}{\text{Ins (depos)}} \times \frac{\text{Prof (s.ins)}}{\text{Ins (paym)}} \times \frac{\text{Ins (paym)}}{R (f)} \times \frac{\text{Ins (depos)}}{\text{Ins (paym)}} \times \frac{\text{Paym (ins types)}}{\text{Prof (s.ins)}} \times \frac{\text{Paym (ins types)}}{R (f)}, \quad (2)$$

where  $SF_{(s.ins)}$  – general condition of the general-obligatory state social insurance’s funds.

The suggested innovation regulator will guarantee the accumulation of more qualitative information flow, dealing with the general condition of the general-obligatory state social insurance’s funds and in result, an opportunity of more realistic managerial decisions-taking will appear.

## Conclusions and suggestions

Generalizing the above mentioned material, you may come to several conclusions. Firstly, the methodological estimation base of the events, occurring in the modern system of the social insurance, requires the deeper studying and adaptation of the innovation criteria. Secondly, the key aspect of the estimation methods is the social risk, which should be defined, taking into account the classical approaches to the risks' estimation, but should be based on the specific content richness of the selected criteria. Thirdly, the estimation's method efficiency of the social risk is worth being supported by the involvement of the offered empirical scale of the social risk's probability. Fourthly, at the general condition's definition of the general-obligatory state social insurance's funds it is suggested to use the five-factors multiplication model, which takes into consideration not only the classical criteria of estimation, but the innovation regulator, which guarantees the definition of the expenditures level in the calculation to 1 hryvna of the reserved fund. The qualitative content analysis' role of the criterion itself is intensified on this base.

It is suggested to include the following to the composition of the main tasks, dealing with the social insurance's condition improvement: to achieve the maximum interconnection of the valid legislation in the sphere of social insurance with the present budgetary legislation; the rational means use of the general-obligatory state social insurance's funds; the effective mechanisms' introduction of the population social protection level's increase; the complex of measures, aimed at the minimization of the social risk; the adaptation of the existing innovation approaches to the reforming system of social insurance in Ukraine.

The direction of the following investigations should be the applied aspect of the suggested methods of the social risk's estimation and the general condition of the general-obligatory social insurance's funds.

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