

**LOSSES ASSESSMENT FROM
PROFESSIONAL DISEASES AND
TRAUMATISM AT ENTERPRISES: SOCIAL
AND ECONOMIC ASPECT**

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Abstract: The aim of the article is to assess and evaluate losses from professional diseases and traumatism at enterprises from social and economic aspects.

Entering the 21st century on the wave of great achievements of scientific and technical revolution, nevertheless, the modern society hasn't put an end with the mass phenomena of accidents and traumatism in working places in many countries. All these accidents and injuries are followed by many mass professional diseases of productive character leading to fatal outcome. In accordance with the data presented by the International Labor Organization (ILO) 2 million men and women die in the result of accidents at manufacturing places and professional diseases annually. Every year at working places 270 million employees become victims of accidents (with fatal or non-fatal outcome). Besides, about 160 million professional diseases are registered. In one third of similar cases the disease leads to absence from work for longer than 4 working days. According to the ILO estimation 4,0 % of the worldwide GDP which is more than 1,25 billion dollars is lost a year due to such circumstances as injuries, loss of people's lives, diseases causing disability, absence from work, necessity of treatment or compensation payment resulted by the bread-winner's death.

On a yearly basis about 12 thousand children die at work places. Applying dangerous and toxic substances annually at manufacturing places kills 340 thousand working people. Use of asbestos carries away approximately 100 thousand lives. In some kinds of professions the same case that leads to loss of life makes 5 thousand traumas, demanding medical aid.

Cardiovascular diseases and orthopedic maladies make more than half of the losses caused by labor activity. One of the main reasons of the fatal outcome among professional diseases is cancer that makes 32,0% of such cases. According to researches 50,0-60,0% of all losses in Europe during working hours are connected with stress at manufacturing places.

In many industrial countries the rate of manufacturing traumatism decreases. The reason is enhancement of ensuring security in working places and a wide introduction of automated processes and equipment at manufacturing places. Also, reduction of the number of employees who are involved in carrying out dangerous kinds of work has played an important role here. It is connected with the increase of the light industry specific weight in the structure of economy. The number of the workers who had died in the result of accidents at work decreased from 3725 down to 2348 in 1995 in Japan. However, the development analysis of this tendency in time shows that for the recent decade the downward speed of this index has reduced. The number of injuries sustained in working places

(including those which involved the loss of people's lives) decreased in Japan from 4,77 for million of working hours in 1975 down to 1,88 in 1995; a much slower decrease was observed in the period from 1989 to 1995. This index movement towards its lower limit has been noticed in other industrial countries as well. Moreover, manufacturing traumatism in the United States hasn't been decreasing for more than 40 years. Partially, it is connected with the fact that typical accidents which can be prevented with the help of different measures on ensuring security, have been substituted by principally new ones caused by introducing automated equipment, but in spite of the general tendency of the reduction of the manufacturing traumatism its indexes are still inadmissibly high.

In Russia, in spite of general tendency of production traumatism reduction, its indexes still remain inadmissibly high. In accordance with the data of the Russian State Committee of Statistics in 2006 more than 128 thousand people sustained injuries at manufacturing places. In the same year, in industries of all areas of economy 5803 people were killed, including 36 of that number were under-aged, 11277 cases of professional deceases and poisoning were registered. Besides, chronic professional deceases and poisoning made 98,4 % off their total number and that brings to limitations of professional abilities and loss.

The estimation of losses from manufacturing traumatism and professional diseases is implemented on macro-level – state level in respect to the country, or on micro – level – enterprise level. The first case explains the estimation of economic cost of losses as a whole over the country; the second one is about private (internal) cost, being estimated on enterprise level. Estimates in methodical plan essentially differ from those of enterprise level since enterprises use actual data as a rule. Estimates on state level are carried out by using series of conditional assumptions.

While estimating losses on state level two methodical approaches are applied:

- calculation of expenditures sum for compensations, paid for indemnification from accidents at manufacturing places;
- calculation of missed possibilities of the society due to losses resulted from manufacturing traumatism.

According to the first method – calculation of paid compensations – the specialists of the International Labor Organization have figured out that 4% of the GDP is spent unproductively caused by accidents and professional diseases in connection with labor activity.

According to the second method the cost of losses is estimated as assessment of missed possibilities, i.e. evaluation of the cost of goods and services for the society that it might have if there were no expenses caused by manufacturing traumatism and professional diseases. In a number of cases both kinds of losses are regarded: the lost (non-produced) production is estimated, the cost of treatment and rehabilitation of the suffered at manufacturing places, the cost of arrangements on preventive measures of traumatism and professional diseases, entitlement payments for the suffered and expenses for treatment of the injured. The part of expenses is calculated rather accurately since they are tracked by

insurance companies. While evaluating the loss of production for the society sometimes they equate the cost of the worker's wages with (the number of missed working days multiplied by the amount of wages for these days) the return of his labor to the society.

Beginning with the early 1990s there were conducted researches on macro – level in many countries including Denmark, Netherlands, Great Britain, USA, Spain and Finland. According to analyses economic losses due to accidents and professional diseases make in the range of 2.5 – 6 % of GDP in a number of states – members of the European Union.

In accordance with the order of the Institute of manufacturing problems of labor protection of the USA there were evaluated such national economic losses as the total sum of general direct losses including expenses on treatment, compensation on insurance, property damage, payment for police and fire departments services, direct losses of third persons not related to trauma and other general indirect losses including lost wages, lost production, violation of manufacturing process, replacement of the staff, training of newcomers at working places, loss of time, indirect losses of third persons not related to trauma. Total economic losses were evaluated approximately at the rate of 3% of the USA GDP.

In the report of the Japanese Association on Security and Labor Protection in industry made on the basis of questionnaire involving 139 companies there was carried out the evaluation of possible saving on the level of the country's state economy. This economy made 107 billion US dollars or 2.2 % of GDP of Japan including 62 billion due to reduction of accidents risk at manufacturing places and 45 billion at expense of production increase.

As for the similar evaluations it is necessary to make the following remarks. Actually, forced expenditures objectively exist in GDP as payments for the suffered or members of their families upon loss of the bread-winner, disabled worker, pensioners receiving payment on favorable terms. They are considerable, actually realized expenditures which in case of reduction and absence of negative consequences of unfavorable conditions of labor would be used in a different way. Such kinds of expenditures are regarded in statistic observations as the ones of the current period.

Other volumes used in calculations are of the conditional character since they don't reflect actual expenses or losses of the product created by the society but their defined according to the conditions: e.g. what amount of payroll would be drawn or the volume of manufactured product would be produced if the workers in labor process were used completely. In such calculations the matter is about the missed benefit and conditions of losses.

There appears a question, what the purpose of these estimations is. Obviously, both earlier and now there is a purpose put for drawing public attention to the importance of such activity and initiating the practice towards carrying out appropriate arrangements. The big economic effect that causes the argument is calculated with the help of involving all possible kinds of economy – real and conditional

losses in the spheres of production and consumption. Joining all kinds of economy into one index by summing them up will bring to receiving irrational volume that does not have clear economic content. In our opinion, making serious decisions on reorientation of means for carrying out social tasks, should not be based on approximate estimations of questionable authenticity but on the basis of real interrelations of social and economic processes and first of all, at accounting the fact that the measure of efficiency of the social production is the degree of satisfying citizens' social needs that determines the social orientation of the country's economy.

Methodic elaborations and calculations of the losses cost due to accidents and professional diseases on the enterprises level for the last decade were carried out in Finland, Sweden and Ireland. For example, the researches in Finland and Sweden allowed to make a conclusion that the improvement of the production environment is not always economically profitable for the enterprise, nor should it be. Elimination of chemical hazard and improvement of ventilation are also economically beneficial. At the same time operations on reducing traumatism, noise and vibrations are not economically beneficial.

Methodical approach towards economic estimation of losses from unfavorable labor conditions and effectiveness of arrangements on labor protection is based on the comparison of expenditures and losses from manufacturing traumatism being decreased as a result of arrangements. Various versions of estimations are distinguished by the fact, how detailed direct and indirect kinds of losses from manufacturing traumatism are regarded and also their reduction as a result of arrangements been made.

By means of renewing the basic manufacturing funds, creating manufactures on the basis of new technique and technologies, meeting the state normative standards of the labor protection, it is possible to improve essentially employees' labor conditions. From the position of assessment of this activity effectiveness one should bear in mind that it is impossible to assign that part of capital investment from the total sum of expenditures which was directed only to the improvement of labor conditions. It is impossible either to assign that part of effect out of the total volume of economic effect which was received at expense of the improvement of labor conditions. That is the price for the systematic nature of economic process.

Brief review of the losses assessment problem allows making the following conclusions. Losses estimations from accidents and professional diseases are necessary not only to prove the profitability of measures on their reduction but to stimulate actions directed to increase the security and protection labor level. As a whole one can make a conclusion that conducting economic analysis in the sphere of labor protection is rather rare phenomenon in practice subject to big labor capacity of estimations, it especially refers to defining the volumes of capital investments to ensuring labor security which give concrete positive results.

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