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ESTIMATES OF KRASNOYARSK REGION BUDGET LOSSES DUE TO THE TAX SHORTFALLS FROM BUSINESSES RELATED WITH A TEMPORARY DISABILITY OF SMOKING EMPLOYEES AND THE REDUCTION IN LABOR INTENSITY DUE TO THE SMOKING BREAKS

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The aim of the paper is to estimate Krasnoyarsk region budget losses due to the shortfalls of taxes from businesses related with a temporary disability of smoking employees and the reduction of labor intensity due to the smoking breaks in 2011.

In our work we used the method of economic losses estimation, developed by Conference Board of Canada.

The following results were obtained. The estimation of tax shortfalls due to a temporary disability of smoking employees and decrease of labor intensity due to smoking breaks was carried out. It was obtained that Krasnoyarsk region budget losses as a result of the tax shortfalls are equal to 532.8 million rubles – due to increased sick absence risks among smokers and 3 414.3 million rubles – due to the lack of workers on the workplace during smoking breaks. Thus, it was found that the total budget losses of Krasnoyarsk region in 2011 reach 0.34% of the gross regional product.

The obtained results can be used for the assessments of the economic losses.

Keywords: public health, tobacco smoking, economic losses.

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ОЦЕНКА ПОТЕРЬ БЮДЖЕТА КРАСНОЯРСКОГО КРАЯ ИЗ-ЗА НЕДОПОСТУПЛЕНИЯ НАЛОГОВ ОТ ПРЕДПРИЯТИЙ В СВЯЗИ С ВРЕМЕННОЙ НЕТРУДОСПОСОБНОСТЬЮ КУРЯЩИХ СОТРУДНИКОВ И СНИЖЕНИЯ ИНТЕНСИВНОСТИ ТРУДА ИЗ-ЗА ПЕРЕКУРОВ

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Целью данной работы являлось оценить потери бюджета Красноярского края, связанные с недопоступлением налогов из-за временной нетрудоспособности курящих сотрудников и снижения интенсивности труда из-за перекуров в 2011 г.

В работе использовалась методика оценки экономических потерь, разработанная Совещательным Комитетом Канады (Conference Board of Canada, 2008 г.).

Произведена оценка недопоступления налогов из-за временной нетрудоспособности курящих сотрудников и снижения интенсивности труда из-за перекуров. Установлено, что потери бюджета Красноярского края вследствие недопоступления налогов составляют 532,8 млн. рублей по причине дополнительных рисков пребывания на листе нетрудоспособности среди курильщиков и 3 414,3 млн. рублей – из-за отсутствия работников на рабочем месте во время перекуров. Суммарно – это потери 0,34% ВРП Красноярского края (по данным за 2011 год).

Полученные результаты могут быть применены для оценки экономических потерь.

Ключевые слова: общественное здоровье, курение, экономические потери.

Introduction.

The research studies were carried out in many countries and allowed to estimate the cost of smoking to smokers themselves, their employers and society as a whole. According to the latest data of World health organization (WHO), the direct and indirect costs of smoking in the European region ranged from 97.7 to 130.3 billion euros per year [6, p. 28]. Economic losses, calculated in different ways, even for "little smoking" countries, were obtained at a rate of 1 - 3% of gross domestic product of Russia according to various estimates [2 p. 19-20; 3, p. 243; 11, p. 6]. According to the data obtained by United Kingdom researchers, 69.0 % of all costs, associated with smoking, directly or indirectly affect the economy and business, 21.3 % – particularly employers [7, p. 471].

Part of these costs caused by the necessity of additional expenses for smoking staff or an increased risk of accidents. However, the most significant share of business costs related with the losses of labor efficiency.

Literature overview.

According to domestic and foreign research it is identified a number of components that make up the business costs related with staff smoking.

First of all, it is a low efficiency of smokers. A study, conducted in one of the counties of UK (West Midlands), has made it possible to estimate the smoke breaks cost to employers for staff working as a whole, as well as part-time, working day. Estimates have shown that the time loss approximately equal to 6% of the total working time. This corresponds to 667 thousand pounds sterling annually. Most of these losses occurred due to the male smokers. Smoking women who work part-time, tended to spend more time on smoke breaks than smokers with a standard eight-hour working day. A study conducted in Taiwan, also allowed to calculate the loss of working time due to smoking breaks: on average, they amounted 72 hours of working time per year for men and 48 hours - for women [9, p. 543].

Estimates of losses from smoking are interesting not only for representatives of science and public health, but also for employers. One of the first companies that

have ordered such a study was the company DuPont. The study involved 45 976 workers, occupying different positions. The results obtained with a high degree of accuracy shown that smoking workers of the company were ill one day longer than non-smokers on average, not counting the amount of time associated with smoke breaks [8, p. 618]. According to the domestic research, the office staff of Russian companies inefficiently uses 4 hours 25 minutes of working time on average. Among this approximately 80 minutes are spent on smoking breaks. It is also known that 31 % of smoking staff makes three or four smoke breaks per day, 37 % smokes each hour. The visit to the smoking room takes about five minutes for most respondents (59%) and about ten minutes – for a quarter of smokers (25%) [3, p. 245].

According to the estimations made by National Institute of Clinical Excellence, UK, the downtime associated with smoke breaks is even greater than the downtime associated with the additional days of sick (5.5% and 1.8% of working time, respectively).

USA national study of labor productivity has shown that the smoking led to a serious loss of working time, even compared with alcohol abuse, family troubles and other factors. In addition, the loss of productivity increases due to the amount of tobacco use: for smokers who use one pack of cigarettes or more per day labor productivity 75% lower compared with their non-smoking co-workers [10, p. 24-25].

Numerous studies indicate that smokers get sick more often than other workers and, consequently, miss more days of work, forcing employers to look for a replacement for the period of absence and bear other expenses. VU University Amsterdam researchers have studied disability duration for 14 thousands of smoking and non-smoking co-workers using data for 1988-1991.

The investigation indicated that smokers miss 35 days per year due to illness on average, while non-smokers – only 20 and ex-smokers – 25. Taking into account other factors (kind of employment, nature of work, etc.) the difference in downtime associated with illnesses for smokers and others reach eight days. [7, p. 469-470].

A similar pattern is observed also in Russia. This is the conclusion reached by the researchers from Higher School of Economics, Moscow. In the analysis of subgroups older 35 years (mean age, when the accumulated effect of the habit begins to affect the body) not only the probability of occurrence of the disease is higher for smokers than for non-smokers, but also a number of the days missed due to illness. Thus, the russian smokers older 35 years are not only more often get sick, but also sick longer in comparison with their colleagues leading a healthy lifestyle [1, p. 112; 11, p. 29]. London School of Economics research indicated that British smokers get sick practically two days longer than non-smokers, in cost terms this corresponds to 1.1 billion pounds of annual business losses. It was found that on average ailing smokers miss 6.16 days, while non-smokers - only 3.86 [9, p. 489].

According to Russian Economic Situation and Population Health Monitoring, the probability of working days absence due to disability 9% higher for smokers than for non-smokers [3, p. 244].

According to American Lung Association, smokers have higher levels of occupational accidents than non-smokers related with the attention and reaction reduction due to smoking [11, p. 16].

The aim of the paper is to estimate Krasnoyarsk region budget losses due to the shortfalls of taxes from businesses related with a temporary disability of smoking employees and the reduction of labor intensity due to the smoking breaks in 2011.

Research objectives:

1. Determination of Krasnoyarsk region budget losses due to the shortfalls of taxes from businesses related with a temporary disability of smoking employees in 2011.

2. Estimation of tax shortfall size related with the reduction of labor intensity due to the smoking breaks in 2011.

Research description

The economic costs of smoking co-workers disability and smoking breaks were calculated using the methods proposed by Conference Board of Canada, [10].

It was used the data of Krasnoyarsk Region Territorial Body of State Statistics as a source of information about the amount of income budget taxes and the size of the working population.

Tax shortfalls (per year) related with the increased sick absence risks among smokers can be estimated as follows [10]:

$$S = p \cdot N \cdot d \cdot S_1 \quad (1)$$

where:

p – smokers fraction;

N – size of working population;

d – the difference between sick days number for smokers and non-smokers;

S_1 – the sick day cost.

The percentage of smokers in Krasnoyarsk region is approximately equal to *46 %* of population, so smokers fraction $p = 0.46$ [12]. The difference between sick days number for smokers and non-smokers $d = 2.3$ [3, p. 242]. The size of working population of Krasnoyarsk region $N = 1\ 457\ 000$ (according to Krasnoyarsk Region Territorial Body of State Statistics, 2011).

The sick day cost S_1 means taxes from businesses per worker per day. To calculate this parameter, annual taxes from Krasnoyarsk region businesses must be divided by working population size ($N = 1\ 457\ 000$) and an amount of working days per year ($m = 250$):

$$S_1 = \frac{125\ 893\ 200\ 000}{1\ 457\ 000 \cdot 250} = 346\ rub./day$$

Thus, the damage of Krasnoyarsk region's budget related with tax shortfalls due to increased sick absence risks among smokers:

$$S = 0.46 \cdot 1\ 457\ 000 \cdot 2.3 \cdot 346 = 532\ 780\ 022\ rub.$$

Estimation of tax shortfall size related with the reduction of labor intensity due to the smoking breaks can be obtained by the following method:

$$S_p = p \cdot N \cdot t \cdot v \cdot m \cdot S_0 \quad (2)$$

where

p – smokers fraction ($p=0.46$);

N – size of working population ($N = 1\ 457\ 000$);

t – average duration of a smoking break;

v – frequency of smoking breaks;

m – amount of working days per year ($m = 250$);

S_0 – tax losses per hour per worker.

To estimate the duration (t) and frequency (m) of smoking breaks we used our research data obtained from enterprises of Krasnoyarsk region. According to this information, the average length of smoking break is approximately 5 minutes (1/12 or 0.83 hour) and the frequency of smoking breaks is 5.66 per day.

Tax losses per hour per worker (S_0) is obtained by dividing the value of the loss of one day by the duration of the working day, equal to 8 hours; so:

$$S_0 = 346/8 = 43.2 \text{ rub./hour}$$

The regional budget losses due to the reduction of labor intensity related with the smoking breaks are:

$$S_p = 0.46 \cdot 1\ 457\ 000 \cdot 0.83 \cdot 5.66 \cdot 250 \cdot 43.2 = 3\ 414\ 328\ 495\ rub.$$

Thus, the budget losses of Krasnoyarsk region due to tax shortfalls are approximately 532.8 million rubles due to the increased sick absence risks among smokers and 3 414.3 million rubles due to the lack of workers at the workplace during smoking breaks.

The total tax shortfall to the regional budget for the reasons related with smoking can be estimated as follows:

$$S = 532\ 780\ 022 + 3\ 414\ 328\ 495 \approx 3\ 947\ million\ rubles$$

This equates to loss of 0.34 % of the gross regional product of Krasnoyarsk region in 2011.

Findings

Tax shortfall to the budget of Krasnoyarsk region, associated with a factor of smoking of working population, is caused by the additional sick absence risks among smokers as well as a reduction of labor intensity due to the smoking breaks. The total budget losses caused by these factors equated to 0.34 % of the gross regional product of Krasnoyarsk region in 2011.

Taking the measures of tobacco usage and tobacco products consumption reduction can significantly reduce the loss of the gross regional product related with the tax shortfall from the businesses of Krasnoyarsk region.

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