

**Gnilitskaya L.V.,***Doctor of Economics, Professor, Kyiv National Economic University named after Vadym Hetman***Al-gazu Ali,***Ph.D Student, Kyiv National Economic University named after Vadym Hetman*

IMPROVEMENT OF AIR SERVICE PRIME COST CALCULATION IN ORDER TO INCREASE UKRAINIAN AIRLINE EFFICIENCY

А The most important feature affecting airlines profitability today is the significant decrease in the demand for air travel. Considering this, there is a need for a flexible pricing policy that allow airline management to reconsider traditional approaches to the calculation of the prime costs of air services.

The article is devoted to a critical assessment of current methodology of operation cost accounting. A new methodology of prime cost calculation was developed. The need for transition from calculating total prime cost to calculating their variable prime cost was justified as the result of the research.

The most important precondition of implementing variable costs calculation practice by domestic airlines in conditions of economic crisis in Ukraine is that fact, that the methodology of calculation for variable costs is adapted to the economic recession and an incomplete usage of productive capacity. Considering this, calculation for variable costs allows airline management to concentrate their attention on controlling fixed costs. In addition, it was proved that the formation of prime cost at the level of lower costs (without inclusion of permanent indirect costs) would broaden performance capabilities of airlines in fixing flexible system of markups during definition of the most reasonable rates.

К Air transport services; method of calculation of the prime cost; variable costs; fixed costs; price policy; dumping price.

УДОСКОНАЛЕННЯ МЕТОДИКИ КАЛЬКУЛЮВАННЯ СОБІВАРТОСТІ АВІАПОСЛУГ З МЕТОЮ ПІДВИЩЕННЯ ЕФЕКТИВНОСТІ ФУНКЦІОНУВАННЯ АВІАКОМПАНІЙ УКРАЇНИ

Гнилицька Л. В.,*доктор економічних наук, професор, Київський національний економічний університет ім. В. Гетьмана***Аль-газу Алі,***аспірант, Київський національний економічний університет ім. В. Гетьмана*

А Найважливішою особливістю функціонування авіакомпаній у сучасних умовах є істотне зниження попиту на авіаперевезення і як наслідок – падіння рентабельності їхньої діяльності. У зв'язку з цим виникає першочергова необхідність проведення гнучкої цінової політики, що змушує керівництво авіакомпаній переглядати традиційні підходи до розрахунку собівартості авіапослуг.

Стаття присвячена критичній оцінці нинішньої облікової практики відображення експлуатаційних витрат у вартості авіапослуг і визначенню економічно обґрунтованої методики калькулювання собівартості послуг авіатранспорту на сучасному етапі розвитку економічних відносин в Україні. У результаті проведеного дослідження обґрунтовано необхідність переходу від калькулювання повної собівартості послуг авіатранспорту до калькулювання їхньої змінної собівартості.

Найбільш важливою передумовою впровадження калькулювання за змінними витратами в практику вітчизняних авіапідприємств в умовах економічної кризи в Україні є те, що техніка калькулювання за змінними витратами пристосована до такої ситуації, коли спостерігається зниження темпів економічного розвитку і як наслідок – неповне використання виробничих потужностей. У зв'язку з цим калькулювання за змінними витратами дає можливість керівництву авіакомпанії зосередити увагу насамперед на змінних витратах, а вже потім контролювати постійні. Крім того, доведено, що формування вартості послуг на рівні більш низьких витрат (без включення постійних накладних витрат) розширить можливості авіакомпанії у встановленні гнучкої системи націнок при визначенні найбільш обґрунтованих тарифів.

К Послуги авіатранспорту, метод калькулювання собівартості, змінні витрати, постійні витрати, цінова політика, демпінгова ціна.

СОВЕРШЕНСТВОВАНИЕ МЕТОДИКИ КАЛЬКУЛИРОВАНИЯ СЕБЕСТОИМОСТИ АВИАУСЛУГ С ЦЕЛЬЮ ПОВЫШЕНИЯ ЭФФЕКТИВНОСТИ ФУНКЦИОНИРОВАНИЯ АВИАКОМПАНИЙ УКРАИНЫ

Гнилицкая Л. В.,*доктор экономических наук, профессор, Киевский национальный экономический университет им. В. Гетьмана***Аль-газу Али,***аспирант, Киевский национальный экономический университет им. В. Гетьмана*

А Важнейшей особенностью функционирования авиакомпаний в современных условиях является существенное снижение спроса на авиаперевозки и как следствие – падение рентабельности их деятельности. В связи с этим возникает первоочередная необходимость проведения гибкой ценовой политики, что заставляет руководство авиакомпаний пересматривать традиционные подходы к расчету себестоимости авиауслуг.

Статья посвящена критической оценке существующей учетной практики отражения эксплуатационных расходов в стоимости авиауслуг и определению экономически обоснованной методики калькулирования себестоимости услуг авиатранспорта

на современном этапе развития экономических отношений в Украине. В результате проведенного исследования обоснована необходимость перехода от калькулирования полной себестоимости услуг авиатранспорта к калькулированию их переменной себестоимости.

Наиболее важной предпосылкой внедрения калькулирования по переменным затратам в практику отечественных авиапредприятий в условиях экономического кризиса в Украине является то, что техника калькулирования по переменным затратам приспособлена к такой ситуации, когда наблюдается снижение темпов экономического развития и как следствие – неполное использование производственных мощностей. В связи с этим калькулирование по переменным затратам дает возможность руководству авиакомпании сосредоточить внимание прежде всего на переменных затратах, а уже потом контролировать постоянные. Кроме того, доказано, что формирование стоимости услуг на уровне более низких затрат (без включения постоянных накладных расходов) расширит возможности авиакомпании в установлении гибкой системы наценок при определении наиболее обоснованных тарифов.

К Услуги авиатранспорта, метод калькулирования себестоимости, переменные затраты, постоянные затраты, ценовая политика, демпинговая цена.

Problem definition

Air transport is one of the most important spheres of economics of Ukraine. Its activity is aimed at the satisfaction of the demand of business entities and population for transportation. However, there is meaningful lessening of demand for air transportation in modern economic conditions. Among the main factors that led to this, one can name the military-political situation in the country and significant deterioration in financial condition of the population due to this fact. As a result, a number of domestic airports do not work, and the frequency of completion of separate flight was delayed or reduced.

In 2014 passenger traffic in borders of Ukraine was provided by 25 domestic airlines, and international flights were provided by 8 domestic airlines. At the same time in comparison with 2013 year the quantity of transported passengers reduced by 6% and amounted to 5900 thousand people. As a result, this has led to the reduction in profit for 7,5 % in comparison with the data of 2013 [1].

The current state of the economy of the country has put airlines in such conditions, when they can stay on the market of the domestic air transportation and retain a certain segment of the international market only due to offering services at competitive prices. Thus, in order to attract people to the usage of aviation transport, and, consequently, to increase the profitability of this industry, there is an urgent need to revise the tariffs for air transportation.

At the same time one should remember, that population that use this type of transport includes both passengers with high level of income and passengers with average and low income. That is why tariff system should be developed in such a way, that will allow to avoid the reduction of quality of air services after reduction of tariffs. It should be based on economically justified costs that form the cost of air services, include loyalty leverages in pricing for loyal customers and contribute to additional attraction of passengers with higher financial resources.

Calculus of prime costs of air services is called calculation. In modern conditions, when determining the prime cost of transport services most airlines base their calculations on the measurement of costs associated with the fulfillment of the flight.

Calculation in airlines is necessary for solving problems of operating cost management, optimizing pricing, predicting the behavior of financial performance in a rapidly changing economic environment.

Analysis of recent research and publications

There is a significant number of scientific publications, devoted to questions of operating cost management in order to reduce them. Among them, we should mention papers of Gorodetskaya L. [2], Knyazeva N. [3], Kostromina E. [4], Sultanova E. [5]. However, in spite of this fact, there are no systematic investigations devoted to the justification of methodical approaches to calculation of the prime cost of air services.

Formulation of the task

The main task of this research is to evaluate in a critical way the existent accounting practice of recording of operating costs in the cost of air services and to determine economically justified methods of calculation the cost of air transport services at the present stage of the development of economic relations in Ukraine.

Presentation of the basic material of the research

Methodological basics of formation of the prime cost of air services in Ukraine are defined by the rules of Regulation (Standard) of Accounting 16 «Costs» [6], Guidelines on the formation of the prime cost of conveyance (works, services) by transport [7], Guidelines on the formation of the prime cost of air transportation for domestic and international traffic, taking into account guidelines of International Civil Aviation Organization [8].

According to these regulations the prime cost of air services can be formed:

- at the level of total production prime cost. Principles of calculation for total costs are its basis for calculation;
- at the level of variable (partial, truncated) prime cost. Principles of calculation for variable production costs are its basis for calculation.

Illustration of methodological approaches to the recognition of costs in the prime cost of services in the calculation systems for total and variable costs was presented in the Table 1.

When comparing methodology of calculation of the prime cost in systems of calculation for total and variable costs (table 1), one can convince that there is difference is in the approach to recognition of fixed production indirect (general) costs in the prime cost of services. During formation of total prime cost, the entire amount of indirect costs (both variable and fixed) is included into the cost of air services. At the same time, the prime cost, which has been calculated on the basis of variable costs, involves the assignment of a constant component of indirect costs for the financial result of the period in which these costs are incurred. They are not assigned to the cost of air services.

Investigation of peculiarities of the usage of calculation systems of the prime cost of services for total and variable costs at enterprises of the air transport

industry allowed to summarize their main advantages in the Table 2.

Despite the fact that the methodology of calculation for the variable cost of services has more benefits in economically unstable situation, the methodology of calculation for total cost of transport services prevails at domestic air transport enterprises. First of all this can be explained by that fact, that this methodology is the basis for the formation of profit for tax purposes, as well as its recording in the system of public financial statements (Statement of Financial Performance (Income Statement)) of the enterprise.

However, the usage of the total prime cost in the capacity of the guidepost in the pricing system of air transport enterprises in today's economic climate is no longer relevant, since the "weighted" due to poorly controlled fixed indirect costs total prime cost is practically not oriented to market changes.

In order to confirm this conclusion, we should prove the need for transition from the traditional methodology of calculation of services to the methodology of determination of their variable costs. This can be justified by sectorial features of air transport enterprises.

Firstly, calculation of the prime cost of services on the basis of variable costs excels with simplicity and objectivity of calculation, since there is no need for a conditional allocation of fixed production indirect costs. This makes the prime cost of services more transparent and helps to control fixed costs.

APPROACHES TO RECOGNITION OF COSTS IN THE PRIME COST OF SERVICES IN CALCULATION SYSTEMS FOR TOTAL AND VARIABLE COSTS

Table 1

SYSTEM OF COST ACCOUNTING AND CALCULATION OF THE PRIME COSTS OF SERVICES	COSTS THAT FORM THE PRIME COSTS OF SERVICES	COSTS COVERED BY THE FINANCIAL RESULT
Calculation system for total costs	Direct material costs	Marketing costs
	Direct labor costs	Administration costs
	Other direct costs	Other operating costs
	Variable production indirect costs	
	Fixed production indirect costs	
Calculation system for variable costs	Direct material costs	Marketing costs
	Direct labor costs	Administration costs
	Other direct costs	Other operating costs
	Variable production indirect costs	Fixed production indirect costs

COMPARATIVE CHARACTERISTICS OF CALCULATION OF THE PRIME COST OF SERVICES FOR TOTAL AND VARIABLE COSTS

Table 2

CALCULATION SYSTEM FOR TOTAL COSTS	CALCULATION SYSTEM FOR VARIABLE (PARTIAL) COSTS
1. Is focused on the total coverage of all production costs	1. Is focused on the coverage of only variable production costs
2. Is the basis for the formation of the full prime cost of services that meets all requirements of current legislation in the field of financial accounting and public reporting	2. Is the basis for the formation of the variable prime cost of services, which is an instrument of operational management of economic activity of the air transport enterprise
3. Provides for capitalization of fixed indirect costs in the prime cost of consummated services, and correspondingly their coverage at the expense of the consumers of these services	3. Provides for direct allocation of fixed indirect costs for the financial result of the enterprise in the period of their occurrence. This enables real reflection of the financial result from the position of management
4. Is effective for making long-term management decisions in a relatively stable economic environment	4. Is effective for making short-term managerial decisions in a rapidly changing economic situation in the air services market

The last thing is especially important, since the accounting policies of the most part of air transport enterprises of Ukraine provides 100 percent of allocation of actual indirect costs for the prime cost of sales of services basing on a single (often unjustified) distribution base. This can be explained by the fact, that according to the existing methodology of allocation of indirect costs, the amount of allocated costs is included into the prime cost of the finished product, and the retained part of the indirect costs is written off to the prime cost of sales.

However, considering technological features of the activity of the air transport industry, which does not provide for the formation of the finished product, irrespective of the amount of actually incurred indirect costs, all of them, one way or another, will be allocated to the prime cost of consummated services. This methodology of allocation of indirect costs do not allow to determine the impact of the usage of production capacity of the air transport enterprise for the prime cost of transportation, and to determine on this basis routes (flights, specific aircrafts), which work is effective, or vice versa is ineffective.

The usage of the methodology of calculation for the variable costs will require obligatory division of indirect costs for variable and constant components. At the same time, considering the need for the flexible pricing of air transport services, the most rational factor for justification of the variability of the general production costs is the possibility of their direct comparison with a separate flight (aircraft).

In turn, fixed indirect costs will acquire features of operating costs and, passing the prime cost of services, are allocated to the financial result of the airline. This will make information about them transparent, and therefore more controlled.

Secondly, the use of the methodology of truncated (variable) calculation at the enterprises of the airline industry will not affect the principles of formation of costs for profit taxation purposes. Since, due to the lack of finished goods inventory and work in progress, all incurred costs in the reporting period will be considered as costs of the period, and thus commensurate with the income of this period during the formation of profit.

With regard to the format of financial statements, the reflection of information about the constant indirect costs in the additional separate line in the Statement of Financial Performance (Income Statement) will only strengthen the ability to determine their impact on the profit margins of the airline.

Thirdly, the usage of the methodology of truncated calculation involves the formation of both financial results of the airline as a whole and the interim financial results (at the level of marginal income) for estimating the activity of individual segments of the airline (routes, transport vessels, customer groups, species of airports and etc.). This will allow management to control changes in the performance during a number of periods, to determine the segments with higher profitability, and to reorient the activity of the airline in accordance with the changing market conditions.

Fourthly, calculation of the variable prime cost of services at the level of lower costs (without including fixed indirect costs) will open more opportunities to establish a flexible system of margins in formation of the most reasonable rates.

This is especially important as the current situation in passenger air traffic has led to the fact that the level of demand is the only one indicator that must be

taken into account during the process of pricing of air services.

However, in terms of price competition it is necessary to know the lower limit of the price, which allows to fulfill the air transportation without loss. The variable prime cost plays the role of the lower limit of the price. At the same time, one should remember that application of this approach to pricing is advisable only in that case, when the fixed indirect costs can be reimbursed in the prices established for the basic flight.

Considering multi-variance of provided air services, which excel in range of flights, their frequency, regularity, the number of passengers on board, etc., it is necessary to justify the most appropriate price of the air transportation.

For example, the cost of the services of so-called "air taxi" depends on the number of passengers on board and can be used for payment by passengers with a high level of income (the highest percentage of margin).

In addition to this, the budget air transportations (charter flights), which weight ranges from 15 to 70% in different airlines [5] require the establishment of lower tariffs up to the dumping prices for the flight. This can be explained by the fact that the receipt of the order for the execution of the charter flight, unlike regular flights depends on the cost of services offered to passengers, so the margin on such flights should be minimal.

Thus, during the period of dumping policy both regular flights and non-regular flights of "air taxi" can play the role of basic ones in order to strengthen the place of the airline at the market. In the cost of their services, one should include a high percentage of margin, which allows to cover fixed indirect costs while the cost of irregular flights should be formed at the level of variable costs. In this case, all rules of tax and accounting legislation will be met. Moreover, transportation will not be unprofitable even at the level of dumping prices.

Fifthly, calculation of the variable prime cost is the basis for the analysis of "cost-volume-profit" (break-even analysis), which is used as a tool for estimating the relationship between costs and profit. The use of the break-even analysis in the activity of air transport enterprises allows to determine the dependence of the operating costs of the volume of air services rendered or the extent of the use of motor-aircraft fleet. In addition, it allows to calculate the critical volume of traffic, predict the behavior of operating costs depending on the type of aircraft, route direction, season and other factors.

Break-even analysis must be the key issue in the airline during making decisions on the establishment

of airfares, the choice of the optimal route network of air transport, the most efficient usage of the aircraft, the development of marketing strategy for the upcoming period. Moreover, the break-even analysis can be used as a management tool for detection of hidden reserves of profitability of airline, which cannot be determined by means of using the traditional methodology of factor analysis of profit.

Conclusions

Conducted research allows to formulate a number of general provisions that reveal directions of improvement of methodical basics of accounting in the part of recording of operating costs and calculation of the prime cost of air services in order to improve the efficiency of functioning of Ukrainian airlines.

1. Further research in the field of improvement of methodological approaches to calculation of the prime cost of air transport services in order to manage operating costs, optimization of pricing, predicting the behavior of financial performance in a rapidly changing economic environment, should be associated with the development of the most substantiated recommendations of practical implementation of methodology of variable calculation into the practice of airlines of Ukraine. This will allow to strengthen the role of accounting information as well as to increase the possibilities of cost-benefit analysis in justification of different sorts of air transport enterprise management solutions.

2. The most important prerequisite for the introduction of calculation for variable costs into the practice of domestic airlines in conditions of the economic crisis in Ukraine is that the technique of calculation for variable costs is adapted to a situation of economic slowdown and underutilization of production capacity. Considering this, calculation for the variable costs enables management of the airline to focus on variable costs and only then to control fixed costs. This can be explained by the fact that at a certain period of time fixed costs remain the same and start growing only after the expansion of the production capacity. At the same time, the growth rate of fixed costs is lower than the rate of economic recovery.

3. In addition, analysis of the variable prime cost is an instrument of information support of management decisions in the system of economic security of the airline during the financial and economic crisis. It is not a coincidence that some western authors [9; 10] call the system of calculation for variable cost as mechanism of "Management of economic security of the enterprise". They highlight the importance of the accounting information received in this system to ensure the safety of operation of the company.

1. The report of the department of finance and economics of the State Aviation Service of Ukraine for 2014 [Electronic resource]. – Access mode: www.avia.gov.ua
 2. *Gorodetskaya L. A.* Improvement of methods of calculation of the prime cost of transportation at airlines: abstract of a thesis for the obtaining the scientific degree of candidate of economic sciences / L. A. Gorodetskaya. – K.: Kyiv institute of engineers of civil aviation, 1992. – 20 p.
 3. *Kostromina E. V.* Economy of the airline in market conditions. / E. V. Kostromina. – M.: NOU VKSH «Aviabizness», 2002. – 304 p.
 4. *Knyazeva N.B.* Methodical approaches to determination of the structure of costs for calculation of the efficiency of airlines according to rates of covering costs by income. / N. B. Knyazeva // Scientific herald MGTUGA. – 1999. – №12. – P. 34–36.
 5. *Sultanova E. F.* Management accounting, control and analysis of operating costs in airlines: thesis for the obtaining of the degree of candidate of economic sciences: 08.00.12 [Electronic resource] / E. F. Sultanova. – M.: RGB, 2006.
 6. Regulation (Standard) of Accounting 16 «Costs» approved by the order of the Ministry of Finance of Ukraine of 31.12.1999 № 318.
 7. Guidelines on the formation of the prime cost of conveyance (works, services) by transport, approved by the order of the Ministry of Transport of Ukraine of 05.02.2001 № 65.
 8. Guidelines on the formation of the prime cost of air transportation for domestic and international traffic, taking into account guidelines of International Civil Aviation Organization. – Ukraviatrans, 2003. – 21 p.
 9. *Hensen Don R.* Management accounting / Don R. Hensen, Maryan M. Moyven, Nebil C. Elias; translated from English by N.P. Krasnyk. – [5th edition]. – K.: Millenium, 2002. – 974 p.
 10. *Horngren Ch.* Management accounting / Ch. Horngren, J. Foster, Sh. Datar; translated from English. – [10th edition]. – Saint Petersburg: Piter, 2007. – 1008 p.
-
1. Отчет Департамента финансов и экономики Госавиаслужбы Украины за 2014 год [Электронный ресурс]. – Режим доступа: www.avia.gov.ua.
 2. *Городецкая Л. А.* Совершенствование методов исчисления себестоимости перевозок на авиапредприятиях: автореф. дис. на соискание научн. степени канд. экон. наук / Л. А. Городецкая. – К.: Киевский институт инженеров гражданской авиации, 1992. – 20 с.
 3. *Костромина Е. В.* Экономика авиакомпании в условиях рынка. / Е. В. Костромина. – М.: НОУ ВКШ «Авиабизнес», 2002. – 304 с.
 4. *Князева Н. Б.* Методические подходы к определению структуры затрат для расчета эффективности авиалиний по степеням покрытия доходами расходов. / Н. Б. Князева // Научный вестник МГТУГА. – 1999. – №12. – С. 34–36.
 5. *Султанова Э. Ф.* Управленческий учет, контроль и анализ эксплуатационных затрат в авиакомпаниях: дис. канд. экон. наук: 08.00.12 [Электронный ресурс] / Э. Ф. Султанова. – М.: РГБ, 2006.
 6. Положение (стандарт) бухгалтерского учета 16 «Расходы», утвержденное приказом Министерства финансов Украины от 31.12.1999 г. № 318.
 7. Методические рекомендации по формированию себестоимости перевозок (работ, услуг) на транспорте, утвержденные приказом Министерства транспорта Украины от 05.02.2001 г. № 65.
 8. Методические рекомендации по формированию себестоимости авиационных перевозок для внутренних и международных сообщений с учетом методических рекомендаций ИКАО. – Укравиатранс, 2003. – 21 с.
 9. *Хенсен Дон Р.* Управленческий учет / Дон Р. Хенсен, Мериэн М. Мойвен, Нэбил С. Елиас; пер. с англ. Н. П. Красник. – [5-е изд.]. – К.: Милениум, 2002. – 974 с.
 10. *Хорнгрен Ч.* Управленческий учет / Ч. Хорнгрен, Дж. Фостер, Ш. Датар; пер. с англ. – [10-е изд.]. – СПб.: Питер, 2007. – 1008 с.

Submitted: 08.04.2016