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Accounting and analytical problems at coal-mining enterprises of Ukraine in terms of European integration

Abstract. Introduction. Free trade zone with EU brings Ukraine benefits, and at the same time it requires changes in Ukrainian legislation concerning trade and other related issues. Changes are expected not only for Ukraine but also for European countries. The challenges of today for them are: socio-economic development of their countries and preservation of ecological balance between humans and environment [1]. To conduct the study, we took two domestic coal-mining companies located in the cities of Snizhne and Torez, Donetsk region. They are: *the Udarnik* coal-mine, seam open vertical shaft 612 meters deep, and *the Progress* coal-mine, seam open vertical shaft 1,294 m in depth [6].

Domestic accounting has to reflect the information from coal-mining enterprises clearly and concretely; a new segment has to be introduced into social accounting aimed at a better transformation, keeping in mind European countries. *The purpose* of the research, the results of which are presented in the paper, is to reveal the problems of accounting and analytical tools and cost management auditing at coal-mining enterprises in the context of Ukraine's European integration. *Results.* The first problem that concerns accounting and analytical tools and cost management auditing is the lack of compliance between the National Accounting Standards (NAS) and International Financial Reporting Standards (IFRS), and in particular, in the absence of the equivalent of national standard N16 «Costs» in IFRS. Another problem of accounting and analytical tools and cost management auditing is the need for establishing an accounting policy taking into consideration mining and geological conditions of a coal mining enterprise. The third problem of accounting and analytical tools and cost management auditing of coal-mining enterprises lies in the need for conducting socially responsible activities and in the absence of the cost accounting system for this activity. *Conclusions.* It is feasible to introduce a research work of costs, and in particular their acknowledgement and estimation, as they are an integral part of the entrepreneurial activities. The problem of taking into account mining and geological conditions in the accounting policy can be solved if each coal mining enterprise that makes an accounting policy would reflect its income and expenditure more accurately and in more details, while the national legislation should settle the issue of accounting with regard to coal mining in general. It is necessary to introduce and develop the accounting system and information presentation of costs spent on socially responsible activities of coal-mining enterprises in their financial records, including environmental restoration.

Keywords: European Integration; Accounting; Audit; National Standards; International Standards; Accounting Policies

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Обліково-аналітичні проблеми на вугледобувних підприємствах в умовах євроінтеграції України.

Анотація. Основними вимогами до підприємств вугледобувної промисловості в контексті євроінтеграції України є перехід до нових міжнародних стандартів. На жаль, зараз в Україні не існує правової бази, яка б могла спиратися на галузеву методологію та нормативні документи, в питаннях обліку господарських операцій у вугледобувній промисловості. Тому існує необхідність у розробці галузевої методології та конкретних методів відображення в бухгалтерському обліку діяльності вугледобувних підприємств з урахуванням усіх особливостей цієї галузі, а також з урахуванням міжнародних вимог.

Ключові слова: євроінтеграція; облік; аудит; національні стандарти; міжнародні стандарти; облікова політика.

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Учетно-аналитические проблемы на угледобывающих предприятиях в условиях евроинтеграции Украины.

Аннотация. Основными требованиями к предприятиям угледобывающей промышленности в контексте евроинтеграции Украины является переход к новым международным стандартам. В данный момент в Украине не существует правовой базы, которая бы могла опираться на методические и нормативные документы, регулирующие хозяйственные операции в угледобывающей промышленности. Поэтому необходимо разработать и внедрить в угледобывающую промышленность определенные методические методы отражения в бухгалтерском учете деятельности угледобывающих предприятий со всеми особенностями этой отрасли и согласно всех международных требований.

Ключевые слова: евроинтеграция; учет; аудит; национальные стандарты; международные стандарты; учетная политика.

1. Introduction

Free trade zone with EU brings Ukraine benefits, and at the same time it requires changes in Ukrainian legislation concerning trade and related issues. Changes are expected not only for Ukraine but also for European countries. The challenges of today for them are: socio-economic development of every country and preservation of ecological balance between people and environment [1].

Having considered specific features of accounting at coal-mining enterprises of Ukraine, the following conclusion can be drawn: domestic legislation requires significant changes for better representation of financial information in accounting. Domestic accounting has to reflect the information from coal mining enterprises clearly and concretely; a new segment has to be introduced into social accounting aimed at a better transformation keeping in mind European countries.

The consideration of principles of accounting and cost audit at coal-mining enterprises in European countries showed the following: there are no special branch standards of accounting and audit for coal mining enterprises in European countries for the specific nature of their activities. However, the accounting and audit principles for coal-mining enterprises are rather unique and emphasize the specific nature of the industry branch. Accounting principles at coal mining enterprises lie in the accounting of final product without taking into account by-products; in the use of accounting policy, income and expenditure account, calculation of depreciation of capital assets and the accounting of devaluation of capital assets. Unfortunately, the transition mechanism from national accounting standards (NAS) to IFRS hasn't been developed yet.

Thus, before developing the transition mechanism from NAS to IFRS, it is necessary to research and point out the main problems of accounting and analytical tools and cost management audit at coal mining enterprises in the context of Ukraine's European integration, which would allow to solve problems concerning the transition arising while developing the relevant mechanism.

2. Brief Literature Review

A significant contribution in the research of cost accounting and cost management audit methodology was made by well-known scientists such as P. Y. Atamas (2013), M. T. Bilukha (2013). In the works by T. G. Melnyk (2009), who researched the processes of harmonization and standardisation of accounting and calculation of expenditures on labour are considered. A. B. Gnedkov (2014) and N. V. Gryshko (2014) studied the issues of competitiveness of Ukrainian coal. V. A. Gavrylenko (2013) offered the mechanism of forming the results of environmental activities of coal mining enterprises in accounting. M. A. Vysotska (2011) offered a new technique of expenditure acknowledgement in compliance with national and international standards of accounting. At the same time, the researchers fail to agree on the transition mechanism from NAS to IFRS, and the criteria of success or failure of the transition.

3. The purpose of the research, the results of which are presented in the paper, is to reveal the problems of accounting and analytical tools and cost management audit at coal mining enterprises in the context of Ukraine's European integration.

To achieve the objectives of the research, we have analyzed specific features of accounting and cost management of coal mining enterprises of Ukraine [2] and the principles of accounting and cost management of coal mining enterprises of European countries [3].

4. Results

The first problem that concerns accounting and analytical tools and cost management audit is the lack of compliance between the national NAS and IFRS, and in particular, in the absence of the equivalent of national standard N16 «Costs» in IFRS.

NAS N16 with no consideration the specific nature of mining industry is used at the domestic enterprises. Apart from

that, the Law of Ukraine «On Accounting and Financial Reporting in Ukraine» claims that NAS is immediately based on IFRS, or rather «is not in conflict with international standards». At first glance, one can conclude that each NAS of Ukraine has to comply with certain IFRS. However, this compliance is violated, and, in fact, the national standard NAS N16 «Costs» has several compliant IFRS. Let us analyze the compliance of components of the N16 standard with international standards (see Table). We have divided NAS N16 «Costs» into the main constituents, such as the formation of information on the enterprise expenditures, representation of the information in financial records, acknowledgement of expenditures, composition of expenditures. In the Ukrainian NAS, the formation of expenditures, as well as representation of the information on these expenditures, is dwelled upon in detail, whereas international standards are of an advisory nature.

In Table we can see that there is no one single international standard to form the accounting information on enterprise expenditures, to reveal the expenditure information in financial records, to define the costs and the composition of costs. It should also be noted that IFRS are of an advisory nature, as they are aimed at harmonization of accounting in different countries, while NAS N16 «Costs» gives more detailed methodological recommendations on the accounting process. Acknowledgment of costs is described in some IFRS [5] in the international practice. However, it is common to regulate the acknowledgement of costs by a regulatory document representing the Framework for the Preparation and Presentation of Financial Statements (FPPFS) [10].

Another problem of accounting and analytical tools and cost management audit is the need for establishing an accounting policy taking into consideration mining and geological conditions of a coal mining enterprise.

The accounting policy of domestic coal-mining enterprises is developed by each enterprise individually, according to the principles and techniques claimed in the Law of Ukraine «On Accounting and Financial Reporting» and in the list of the National Accounting Standards. The accounting policy based on IFRS should list and regulate all prime costs of coal-mining enterprises.

The accounting policy has a great influence of the formation of costs and their representation in financial records, as it takes into account all mining and geological conditions of coal mining enterprises.

Let us analyze the depth of coal mining enterprise, and trace the changes in the structure of costs resulting from this condition. Hence, we will consider two domestic coal enterprises in Donetsk oblast (region) in the towns of Snizhne and Torez: *the Udarnik* coal-mine, seam open vertical shaft 612 meters deep, and *the Progress* coal-mine, seam open vertical shaft 1,294 m in depth [6]. The deeper coal is mined, the higher is the quality of the product of the coal mining enterprise, whereas the working conditions are worse. In the accounting policy of domestic coal-mining enterprises, it is stipulated that all expenditures on additional payments to salary are to be presented in subaccount 816 which reads «Other expenditures on remuneration of labour». The specific expenditures on labour remuneration at all domestic coal-mining enterprises are as follows: work of the evening and night shift, participation factor, service record coefficient, travel time to working place (from shaft to production face), etc. The structure of expenditures on labour depends on the miners' working conditions [7].

It should be pointed out that in accounting policy the accounting records of low-value and high-wear parts are made on the basis of NAS N9 «Reserves». According to NAS N9 «Reserves», accountants working at coal-mining enterprises have to account work clothes, including mittens, according to Account 22 «Low-value and high-wear items». Mittens are given to workers at the rate of 1 pair per one quarter of the year. At *the Progress* enterprise, mittens and work clothes are accounted on the basis of Account 22, while at *the Udarnik* enterprise they are accounted on the basis of Account 112.

Table: Compliance of the national standard NAS N16 «Costs» with IFRS			
National practice		International practice	
NN	Constituent parts of NAS N16	Normative document	Content
NAS 16 «Costs»	The formation of information on enterprise expenditures in accounting	IFRS 16 «Fixed assets»	Forms the information on expenditures concerning depreciation and losses on the reduced profitability
		IFRS 18 «Income»	Points out that income and expenditures connected with the same operation or another event are calculated simultaneously; estimates the information concerning expenditures on commodity sale and provision of services
		IFRS 23 «Expenditures on loans»	Gives information concerning expenditures on loans and other loan costs
		IFRS 38 «Intangible assets»	Forms the information on the expenditures on research and development
	Revealing information on costs in financial records	IFRS 1 «Submission of financial records»	Determines the basics of submitting financial records (in the context of expenditures), establishes general requirements as for financial records submission
		IFRS 2 «Reserves»	Determines the prime cost (of products, labour, services) and further cost acknowledgement
	Cost acknowledgement	FPPFS	Determines what can be recognized as costs. However, its conceptual basis is not an international accounting standard
	Composition of costs	IFRS 23 «Expenditures on loans»	Determines the composition of expenditures on loans
		IFRS 38 «Intangible assets»	Establishes the composition of expenditures on the purchase of separately purchased intangible assets

Source: Compiled by the authors using the data [4]

From the characteristics of the above Accounts, we can see that Account 22 is for items whose service is less than 1 year, and Account 112 is for items whose service exceeds 1 year term, accordingly. This difference results from the fact that at the depths over 1000 m the rocks and coal are harder and their properties are closer to that of glass, which is why the miners' mittens and hands are often cut. To ensure hands protection, mittens are given to the miners of the *Progress* coal-mine on demand. It is a compulsory condition to turn in the worn pair of mittens before a new pair is given. At the same time at the *Udarnik* enterprise, mittens are accounted according to Account 112, as mittens can be worn for 1 year, as the rocks and coal are not so hard.

The organization of expenditure accounts at domestic enterprises depends greatly on the established accounting policy. The use of different structures of cost items influences the representation of expenditures in financial records at coal-mining enterprises, which in its turn influences the attractiveness of coal mining industry for investors. Financial records allow investors to understand the financial condition of different coal-mining enterprises. Hence, financial records have to be transparent and clear. In addition, based on the financial record, investors determine the volume of investments in domestic coal-mining enterprises and in the industry as a whole.

Auditing an enterprise, the auditor studies the documents regulating and organizing the enterprise's accounting as the policy serves as a short overview of the main principles of accounting at the enterprise and allows the auditor to understand the accounting structure. The accounting policy is the main source of information for the auditor. In the process of auditing at any enterprise, auditor should take into account that IFRS 1 assumes that accounting policies cover only those issues that allow interested participants to understand the ways of reflecting operations and facts expressed in resulting indicators of accounting (financial) records. Since coal in Ukraine and in Europe is mined at integrated enterprises, audit of such integrated coal-mining enterprises is complicated by the fact that it is impossible to determine the share of revenue and expenditures of one enterprise or another. This means that it is rather difficult to audit an enterprise as for its revenue and expenditures from the ordinary course of business and other activities, as well as from extraordinary revenue and expenditures. The audit risk is very high here.

The third problem of accounting and analytical tools and cost management audit of coal mining enterprises lies in the need for conducting socially responsible activities and in the absence of the cost accounting system for this activity.

According to IFRS, changes in accounting policies are limited: it is impossible to introduce additional costs to the existing list of prime costs with regard to IFRS, the additional costs that in fact exist at coal mining enterprises, but are settled neither with IFRS nor with the national standards [9]. For instance, social responsibility activities can be attributed to this kind of expenditures.

Earlier, in the days of a centrally planned economy, maintenance of non-profit establishments and organizations like kindergartens, secondary schools, recreation camps and so on made a part of expenditures of coal mining enterprises

along with expenditures on free of charge provision of coal for household requirements of the workers and pensioners of mining industry, as well as transportation of the enterprise workers.

It is clear that these expenditures have a very specific social trend, and thus they are connected with the activities of coal-mining enterprises aimed at the realization of social responsibility. At the same time, today some coal-mining enterprises still sustain the losses from social responsibility activities, and others have given up these expenditures deducting kindergartens, hospitals and so on from their balance-sheets, and stopped the provision of coal for household requirements to the industry workers.

In its turn, Europe with its decades-long history of capitalist economic model did not have such social expenditures at all. That is why IFRS do not contain an explanation of such expenditures and their representation in financial records.

At the same time, conducting a socially responsible business is one of the global concepts of economic development. This trend has become so significant that enterprises are analyzed, estimated and ranked by the level of social responsibility. In 2010, the International Organization for Standardization issued a new international standard ISO N26000 «Social responsibility» [8]. Thus, a paradox emerges: the standard of conducting business exists according to the principles of social responsibility. However, there is no standard of accounting the expenditures on the activities with regard to those principles of social responsibility. This means that there is no accounting system and representation of information in financial records concerning the enterprise expenditures on social responsibility. This problem is especially acute in coal mining, as enterprises violate the principles of sustainable development and social responsibility by extracting non-renewable fossil fuels, thus robbing the future generations of resources and damaging environment [9].

The system of accounting that reflects the expenditures on social responsibility should include and regulate the expenditures on restoration of environment as the main activity of coal-mining enterprises in fossil fuels extraction has a negative influence on the environment; also physical condition of people depends on the condition of the environment. None of the standards, either national or international, determines the methodology of reflecting the expenditures on restoration of environment in accounting. Thus, it is unclear which accounts should be used to reflect this activity, and which articles of expenditure include the expenditures on renovation of environment.

5. Conclusions

1. It is feasible to introduce a research work of costs, and in particular, their acknowledgement and estimation, as they are an integral part of the enterprise activities. However, there exist a number of problems in combining international and domestic standards taking into account the important factor of domination of IFRS over FPPFS, which have significant influence on international standards and economy, which in future would have its effect on the national economy.

2. The problem of taking into account mining and geological conditions in the accounting policy can be solved if each coal-mining enterprise that makes an accounting policy would reflect the income and expenditure more accurately and in more details, while the national legislation would settle the issue of accounting connected with coal mining in general.

3. It is necessary to develop and introduce the accounting system and information presentation of costs spent on social responsibility activities of coal mining enterprises, including environmental restoration, in their financial records. This will make it possible to account, analyze and controlling such activities, to reflect the expenditures on social responsibility in financial records; it would also allow external users, for example investors, to invest money in the enterprise with a positive image of social responsibility, which has its financial results through loyalty of its consumers.

References

1. European Commission (2015). *Europe 2020 in a nutshell*. Retrieved from http://ec.europa.eu/europe2020/index_en.htm
2. Petruk, O. M. (2014). Features of cost accounting of coal mining enterprises in the context of European integration. *Naukovyi zhurnal Ekonomika i Finansy (Scientific Journal of Economics and Finance)*, 11, 61-68 (in Ukr.).
3. Petruk, O. M. (2015). Principles of accounting and audit costs of coal mining enterprises in Europe. *Ekonomichnyi prostir: zbirnyk naukovykh prats (Economic Space: Collection of scientific works)*, 97, 222-232 (in Ukr.).
4. *Encyclopedia of Mining*. (2004). Donetsk: Donbas (in Ukr.).
5. *The Conceptual Framework for Financial Reporting*. Retrieved from http://zakon4.rada.gov.ua/laws/show/929_009 (in Ukr.).
6. *The Explanatory Dictionary of Mining*. (2001-2004). Donetsk: East Publishing House (in Ukr.).
7. The Audit and Risk Committees. *News of EU legislation and best practices*. Retrieved from http://www.ecia.eu/wpcontent/uploads/2014/10/ECCIA_FERMA_Brochure_HD1
8. *International standard ISO No. 26000 «Social Responsibility»*. Retrieved from <http://coal.dp.ua> (in Ukr.).
9. The official website of the Ministry of Finance of Ukraine. *International Accounting Standard (IAS) 8 «Accounting policies, changes in accounting policies and errors»*. Retrieved from http://www.minfin.gov.ua/control/publish/article/main?art_id=92410&cat_id=92408 (in Ukr.).
10. Federation of Professional Accountants and Auditors of Ukraine (2005). *Framework for the Preparation and Presentation of Financial Statements. International Financial Reporting Standards (IFRS) 2004 - Part 1, 2*; trans. from English, S. F. Holov ed., Kyiv: Federation of Professional Accountants and Auditors of Ukraine.

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References (in language original)

1. Європа 2020 в двох словах [Електронний ресурс]. – Режим доступу : http://ec.europa.eu/europe2020/index_en.htm
2. Петрук О. М. Особливості бухгалтерського обліку витрат підприємств вуглевидобувної промисловості в контексті євроінтеграції / О. М. Петрук, М. С. Пашкевич, А. А. Макурін // Науковий журнал Економіка і Фінанси. – 2014. – № 11. – С. 61–68.
3. Петрук О. М. Принципи бухгалтерського обліку і аудиту витрат підприємств вуглевидобувної промисловості у країнах Європи / О. М. Петрук, А. А. Макурін // Економічний простір : Збірник наукових праць. – № 97. – Дніпропетровськ : ПДАБА, 2015. – 255 с.
4. Мала гірнича енциклопедія. В 3-х т. / За ред. В. С. Білецького. – Донецьк : Донбас, 2004.
5. Концептуальна основа фінансової звітності [Електронний ресурс]. – Режим доступу : http://zakon4.rada.gov.ua/laws/show/929_009
6. Гірничий енциклопедичний словник: в 3 т. / За ред. В. С. Білецького. – Донецьк : Східний видавничий дім, 2001–2004.
7. Аудит і Ризик комітетів. Новини законодавства ЄС и передового досвіду [Електронний ресурс]. – Режим доступу : http://www.ecia.eu/wpcontent/uploads/2014/10/ECCIA_FERMA_Brochure_HD1
8. Міжнародний стандарт ISO № 26000 «Соціальна відповідальність» [Електронний ресурс]. – Режим доступу : <http://coal.dp.ua>
9. Міжнародний стандарт бухгалтерського обліку (МСБО) 8 «Облікові політики, зміни в облікових політиках та помилки» [Електронний ресурс] / Офіційний веб-сайт Міністерства фінансів України. – Режим доступу : http://www.minfin.gov.ua/control/publish/article/main?art_id=92410&cat_id=92408.
10. Концептуальна основа складання і подання фінансових звітів // Міжнародні стандарти фінансової звітності (МСФЗ) 2004. – Ч. 1, 2 ; пер. з англ. / за ред. С. Ф. Голова. – К. : Федерація професійних бухгалтерів і аудиторів України, 2005. – 1232 с.

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