

THE INFLUENCE OF ABC COST CALCULATION METHOD ON ECONOMIC ENTITIES PERFORMANCE

Ioana DORIN,

University “1 Decembrie 1918” from Alba Iulia,
doris.ioana@yahoo.com

Cristina DIACONESCU,

Oltenia Energy Complex,
dcristina77@yahoo.com

Abstract

There is a direct relationship between ABC method and financial performance of entities, but only in the context of certain drivers, as well as the establishments' size, the offered products diversity, indirect cost structure or organizational culture. A competitive position is also generated by products mix, making it unlikely that a single product can sustain a long-term high profitability due to its life cycle. The costs value calculated using ABC method which exceeds the amount of the traditionally costs calculation is explained by hidden costs previously unidentified. For the products whose costs calculated by ABC are lower than those traditionally calculated, the difference is justifying by a hidden profit. The explanation of both favorable and unfavorable differences is assigned to different indirect cost configuration used by these two methods.

Keywords: ABC method, traditional management cost systems, performance, productivity, managerial accounting

JEL Classification: M40, M41, M11

Introduction

Initially, ABC method was applying in order to improve products profitability and manufactured products optimal mix selection. The expert interest for the results of method application subsequently dropped because of its disadvantages.

However, further theoretical method developments proved the ABC ability to incorporate long-term planning elements and forecasts as well as to provide a planning tool for long term that grown the specialists and entities interest for method application. According to the present holistic approach, ABC method is treating as both a cost allocation methodology and a drafting decisions tool used on short or long term.

Contributing factors associated with the ABC method that increase financial performance

Cost management development based on activities has reduced economic entities dependence on traditional costs management systems. As we all know, according to traditional costs management systems, indirect costs allocation was made in relation to different database distribution designed to provide a breakdown of their rationality. The experience has shown the lack of this method accuracy due to a relationship lack not able to identify the connection between assigned and preferred costs sources in real time.

At the time of her appearance the ABC method was seen as a more effective method of products or services cost calculation. Over the time it turned into a management actions balance scorecard method that could be quantified in profitability terms (Figure 1).



Figure 1 – ABC method development [8]

Entities competitiveness and long-term profitability cannot exist in the absence of productivity, which could be increasing only by practicing systematic and holistic activities management. In addition, productivity cannot growth in the absence of its quantification.

The lack of objectives regarding productivity, economic activities has no direction. The lack of productivity quantification generates economic activities without any control [3].

An integrated approach of productivity quantification has many benefits, such as [6]:

- Providing an overview of organizational performance;
- Emphases the existing relationships between various economic and financial rates and drives;
- Facilitating entity factors analysis that contribute to performance in terms of productivity;

- Providing support for problems diagnosis and suggesting corrective suitable measures;
- Monitoring entity performance in time term and reporting on some other entities performance.

The connection between ABC method implementation and financial performance or factors contributing to financial performance growth associated with ABC method is a widely debated topic.

A comprehensive study has identified that only 23 percent from the examined entities have adopted ABC method, while the remaining 78 use some other cost allocation methods. The study conclusions also demonstrated there is a direct relationship between ABC method and financial performance of entities, but only in the context of certain drivers, as well as the establishments' size, the offered products diversity, indirect cost structure or organizational culture [2].

Economic and financial performance is translated in terms of production volume in most cases. A large number of products offered in reasonable amounts in relation to market demand will contribute to performance improvement which is evaluated in relation to the potential demand coverage for such products. Production volume is directly correlated with entities position on market, and an increased production volume can be properly managed in terms of costs using ABC method. A competitive position is also generated by products mix, making it unlikely that a single product can sustain a long-term high profitability due to its life cycle.

Differences in the cost based on ABC method comparing to cost management traditional methods

Quantifying the differences between recorded profitability (Figure 2) showed a medium increase of 72% in the case of Hong Kong entities [5] while the amount costs differences calculated using traditional methods and ABC method could reach to 271%.

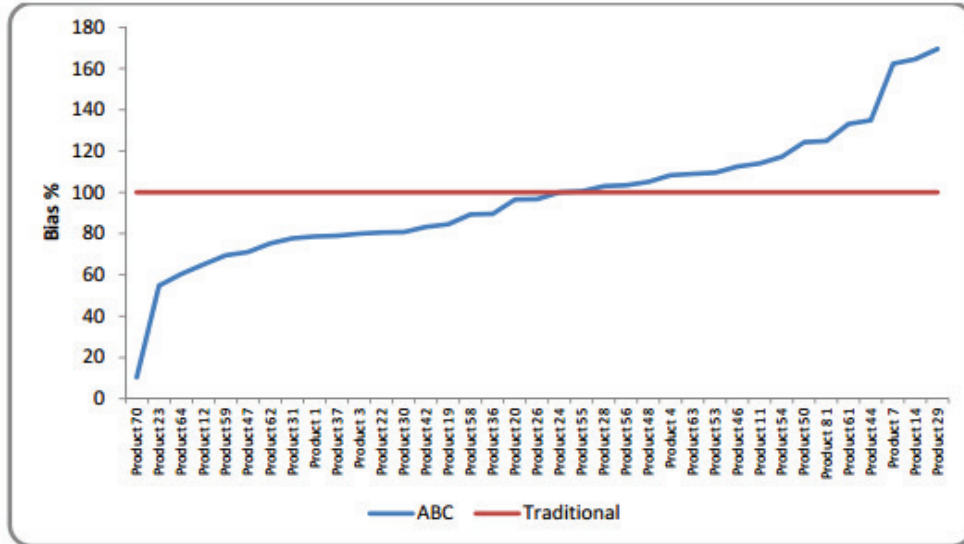


Figure 2 – Main differences in the cost based on ABC method comparing to cost management traditional methods [1]

Significant differences between the results related to profitability determined through ABC method and traditional cost management methods have been identified by many other relevant studies. Thus, in the case of traditional methods there is one-way cost deviation. In terms of cost there are overestimated or undervalued products.

The differences between the two management accounts approaches are presented in figure 2, where the percentage difference is calculated as a ratio between ABC method costs amount and traditional allocation costs calculation.

As figure 2 shown the difference between the two costs methods is significant. The costs value calculated using ABC method which exceeds the amount of the traditionally costs calculation is explained by hidden costs previously unidentified. For the products whose costs calculated by ABC are lower than those traditionally calculated, the difference is justifying by a hidden profit. The explanation of both favorable and unfavorable differences is assigned to different indirect cost configuration used by these two methods.

ABC method and the decision processes

With regard to the ABC method usefulness application in decision-making, it was shown that although there are no significant differences in terms of decision preparation time, the resulting profit provided by ABC method information is superior to the result based on the cost management traditional methods [4] (figure

3). This situation could be explained by higher transparency of cost information provided by ABC method.

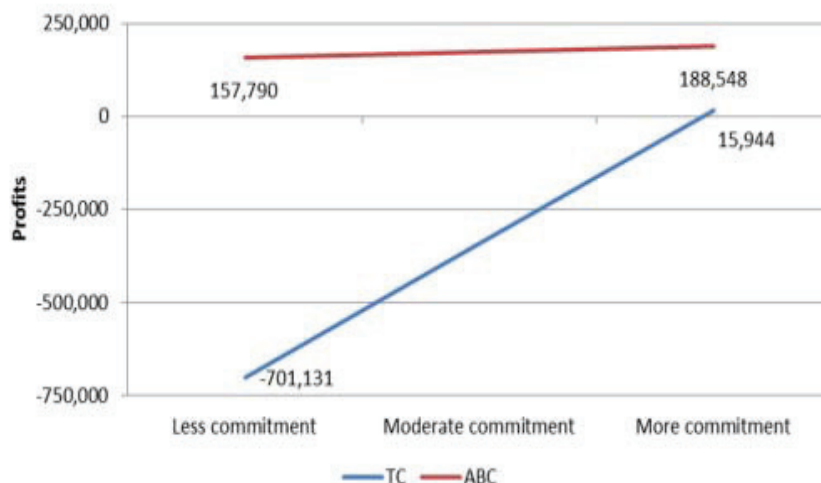


Figure 3 – Decision making based on ABC method vs. Cost management traditionally methods [4]

In addition, there are some studies related to ABC method application impact on mining industry that demonstrates that due to significant specific indirect cost amount ABC method will contribute to provide a relevant production cost [7].

According to these studies ABC method is very important for decision making process focusing on costs allocation on products life cycle. It is recommended to use present net value to evaluate equipments acquisition for a project terms.

In case of ABC method application a significant growth of financial performance could take place when this method is used in addition with managerial accounting modern methods as total quality management (TQM) or Just in time method (JIT) [2].

Methods of assessing performance variation generated by ABC method

Entities performance evaluation (entities using ABC and entities using some other methods) is a difficult task because of data collection difficulties.

Nguyen has published an interesting econometric study regarding this comparison. He has studied 20 mining companies. 17 of them adopted ABC method and 3 used some other traditional management cost methods.

It is interesting to give some details regarding the econometric model of Nguyen. We are convinced that model could be implemented in Romania in the near future.

Model equations are:

$$\Delta\text{COST} = \alpha_0 + \alpha_1 * (\text{labor fluctuation rate}) + \alpha_2 * (\text{entity size}) + \alpha_3 * (\text{age of entity}) + \alpha_4 * (\text{activity nature}) + \alpha_5 * (\text{production}) + \alpha_6 * (\text{products mix}) + \varepsilon_1 \quad (1)$$

$$\Delta\text{COST} = \beta_0 + \beta_1 * \text{ABC} + \beta_2 * (\text{labor fluctuation rate}) + \beta_3 * (\text{entity size}) + \beta_4 * (\text{age of entity}) + \beta_5 * (\text{activity nature}) + \beta_6 * (\text{production}) + \beta_7 * (\text{products mix}) + \varepsilon_2 \quad (2)$$

$$\Delta\text{Quality} = \alpha_{01} + \alpha_{11} * (\text{labor fluctuation rate}) + \alpha_{21} * (\text{entity size}) + \alpha_{31} * (\text{age of entity}) + \alpha_{41} * (\text{activity nature}) + \alpha_{51} * (\text{production}) + \alpha_{61} * (\text{products mix}) + \varepsilon_{11} \quad (3)$$

$$\Delta\text{Quality} = \beta_{01} + \beta_{11} * \text{ABC} + \beta_{21} * (\text{labor fluctuation rate}) + \beta_{31} * (\text{entity size}) + \beta_{41} * (\text{age of entity}) + \beta_{51} * (\text{activity nature}) + \beta_{61} * (\text{production}) + \beta_{71} * (\text{products mix}) + \varepsilon_{21} \quad (4)$$

Equations (1) and (4) are focusing on performance before ABC method implementation and equations (2) and (4) are providing economic performance recorded after ABC method implementation.

Results are following Cooper and Kaplan statements according to older entities having a broader range of activities and a high products diversification level will reflect in a more meaningful manner the benefits of ABC method in comparison to small entities.

Concluding remarks

Traditional systems cost are based on the direct costs allocation which creates a distortion of accounting information. There is no relevant connection between the behavior and the amount of distribution database used. Also, for ease of calculations, there are often used very few allocation bases. ABC method brings a novelty element in the cost system by using activities drivers and activity cost allocation which allows a more relevant point of view in order to reflect production process and its activities particularities.

Production cost generated by ABC method is less than value calculated by traditionally cost methods because it reflects real costs distributed in a more rational manner.

The information provided by ABC method results can be used in many areas focusing on effectiveness and profitability, cost reduction decisions, new product manufacture decision or stopping unprofitable production, decisions concerning drawing up budgets, decisions related to the integrated management etc.

We believe that making a comparison between production costs calculated by two methods is relevant for ABC methods benefits understanding, quantified in

this information. Even if the method is not easy and requires important human and material resources, entities may decide to apply them only in the hands of certain products or departments.

References

- [1] Akyol, D.E., Tuncel, G., Bayhan, G.M. (2005) *A comparative analysis of activity based costing and traditional costing*, Qorld Academy of Science, Engineering and Technology, 3, p. 44-47
- [2] Cagwin, D., Bouwman, M.J. (2002) *The association between activity-based costing and improvement in financial performance*, Management Accounting Research, 13(1), p. 1–39
- [3] Drucker, P. (1999), *Management Challenges for the 21st Century*, Harper Collins, New York, NY
- [4] Harrison, D.S., Killough, L.N. (2006) *Decision outcomes under activity-based costing: presentation and decision commitment interactions*, Advances in Management Accounting, 15, p. 169–193
- [5] Jelsy, J., Vetrivel, A. (2012) *Time driven activity based costing for spinning mills to improve financial performance*, Advances in Management Accounting, 5(3), p. 40–45
- [6] Kumar, N., Mahto, D. (2013) *Current Trends of Application of Activity Based Costing (ABC): A Review*, Global Journal of Management and Business Research Accounting and Auditing, vol. 13, Global Jopurnals Inc. (SUA)
- [7] Lind, G.H. (2001) *Activity based costing: challenging the way we cost underground coal mining systems*, The Journal of the South African Institute of Mining and Metallurgy, March/April 2001, p. 77–82.
- [8] Turney, P.B.B. (2008) *Activity-based costing: an emerging foundation for performance management*, available on http://cmaprepcourse.com/wp-content/uploads/2012/07/ABC-support-document_Study-Unit-2.pdf

