Journal of Accounting, Financial and Economic Sciences. Vol., 3(3), 88-92, 2023
Available online at http://www.jafesjournal.com
ISSN 2149-7346 ©2023
DOI: 10.61186/jafes.3.3.88

The Application of Activity-Based Costing in Banking Industry

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Abstract: The main activity of banks, buy and sell funds and banks funds in the form of deposit in the form of facilities put at the disposal of natural and legal persons. Therefore, the resources and banking facilities should be managed in the best way possible. This process is only possible if management successfully manages the detailed information of the cost and benefits of this process are. The most significant bank debt items, various kinds of deposits by sectors ranging from institutional and private and public have been deposited. The aim of this study is calculate and compare cost of loan savings deposits and short-term investment deposits under traditional costing systems, which are common in Iranian banks, and activity-based costing system. For this purpose, first using a model developed by the doctor Arab Mazar Yazdi and Nazareth (2003), deposits of bank branches which include 11 branches, over the course of fiscal 2014 were costing. T test was used to test research hypotheses. The results show that the cost of the loan savings deposits and short-term investments in traditional ABC method was significantly different from each other.

Keywords: Costing, Traditional Costing Systems, Activity Based Costing, Bank.

Introduction

Activity-based costing (ABC) has emerged as a novel and increasingly popular costing methodology over the last decade. Its growth may be attributed to the refinements which it brings to the costing of final outputs and to its facilitation of important aspects of cost management (Nasser and Li, 2008). The former benefit derives from its enhancement of conventional overhead costing practice. This has traditionally involved the attaching of overhead cost to each unit of output in proportion to a time-based work measure such as labor or machine hours. The underlying assumption of this approach is that overhead resources are consumed on a time basis, that is, the longer an item is worked on the greater should be its share of overhead. As labor and machine hours will vary closely with output levels, this approach can be viewed as being primarily volume-based (Cooper, 1994).

Also in banking industry, electronic banking and banking industry development forces us to modify our country's traditional systems in all banks of the country as it was done in most banks in Europe and America. Using activity-based costing method helps the banks and financial entities to achieve a better knowledge of different services and different sections. Activity-based costing method is one of new costing methods in which the cost data from one hand and differentiation of valuable activities from invalid activities on the other hand are considered valuable in cost management process (Anderson, 1995).

Activity-based costing system helps to calculate the cost of units and sections and deposits of the banks exactly and correctly and creates more efficiency and effectiveness. Using this system forces the financial entities to achieve

an exact view of the profitability of the sections and their different services. Although costing system is developed in production industries, the need for this system is felt more in banking industries because the products and services of the banks are more varied and they become complicated more and more every day (Carenys & Sales, 2008). Also, the overhead cost is increasing every day in a way that half of the costs in Iranian banks are due to the overhead cost.

Several researches have been done about implementing activity-based costing in different industries and also in banking industry in different countries and some of them will be briefly outlined in this paper. Anvari and Rezayat (2007) studied the comparative assessment of Islamic Contraction bank facilities' profitability using activity-based costing method in Toseye-Saderat bank in 2007 in a paper entitled: "The comparative assessment of Islamic Contraction bank facilities' profitability using activity-based costing method and traditional costing method: A case study of Tosey-eSaderat bank". They concluded that in traditional method the cost of non-profit deposits is less than civil participation and credit sales while civil participation and credit sales have been equal in cost and also using activity-based costing helps to calculate the exact costs of each one of the activities (studying, approving, paying, supervising and liquidating activities) which help the improvement of organizational activities' efficiency (Fuster, 2007).

Lee et al (2009) presented their article entitled: "The influence of change agents' behavioral intention on the usage of the activity based costing management system and firm performance", the positive effect of change representatives on the performance of ABC/M systems" in the year 2010. This paper discusses about the unified theory of acceptance and use of UTAUT technology to study the behavioral ideas of change agents in implementing activity-based costing system/management (ABC/M). ABC/M is an important managing system which emphasizes on the appropriation of overhead costs based on the price stimulants in order to supply suitable information to improve decision-making. Usually, the top management and most of administrative managers play the role of implementing the change (Vieira & Hoskin, 2004). Behavioral ideas are identified as an act or an innovative viewpoint to enhance ABC/M. Since using ABC/M and the fostering conditions for the amount of ABC/M systems' application has been less evident, the questionnaires were distributed regarding the Information Technology (IT) perspective (Rezaee, 2005). Also, the goal of this research has been to verify the usefulness of using ABC/M system to improve the performance. The experimental results gained from 100 certified responses collected show that performance expectation and social effect has a direct effect on the agents' behavior. Change agents' behaviors and fostering conditions are important structures which affect the application of ABC/M systems. Also, the amount of ABC/M application has a meaningful relationship with financial and non-financial performance. The results approve that UTAUT model is applicable in measuring change agents' behavioral expectations in implementing of the current ABC/M systems. Also, this research reveals the positive effect of change agents on the performance of ABC/M systems (Lee, 2010).

Pike et al (2011) presented a paper entitled: "Activity – based costing user satisfaction and type of system: A research note". This paper examines user perception of activity-based costing performance for three different types of system in a major information and communication provider in South East Asia (Bahnub, 2010). Few prior ABC studies have considered the effect of system type on ABC performance. The study draws on a survey of 54 developers and 181 users of 16 different ABC systems within the organization to produce five performance constructs (cost accuracy, cost-benefit trade-off, ABC impact, information use, and decision action). The results show that both the development inputs and user performance perceptions varied with the type of system (embedded, stand alone, ad-hoc). While embedded systems enjoyed far stronger inputs (for example, top management support, rewards and recognition, task significance) and greater development team cohesion than stand-alone systems, they were perceived by users to perform significantly less well. These findings suggest that system type is an important factor in assessing ABC performance (Pike et al., 2011).

Materials and Methods

The present research is an applied research, regarding the goal and a descriptive research regarding data collection and it is a case study. The aim of the present study to calculate and compare cost of loan savings deposits and short-term investment deposits under traditional costing systems, which are common in Iranian banks, and activity-based costing system. For this purpose, first using a model developed in literature, deposits of bank branches which include 11 branches, over the course of fiscal 2014 were costing. T test and SPSS software was used to test research hypotheses.

H1: There is a meaningful difference between the cost calculated using activity-based costing method and cost calculated using volume based costing system (traditional) for saving deposits.

H2: There is a meaningful difference between the cost calculated using activity-based costing method and cost calculated using volume based costing system (traditional) for short term deposits.

Different types of cost

Each of bank deposits which are defined as a financial supply resource and the continuation of the bank life depend on it and this deserves costs as follows:

a. Direct cost: direct cost in a bank is the one which is traceable to a deposit and banking services and include profits paid to short-term deposit owners and rewards conferred to saving non-profit deposits.

b. Indirect cost: it is not the cost which is directly traceable to a service or bank deposit and includes all bank costs except the profit paid to short-term deposit owners and the rewards conferred to nonprofit saving deposits and they are considered to be overhead (indirect) costs.

Calculate the cost price of loan savings deposits

$$R_{t,SD} = R_{SD} + R'_{SD}$$

Where,

$R_{t,SD}$: saving bank deposits' cost, R_{SD}: saving deposits' direct cost, R'_{SD}: saving deposits indirect' cost.

Non-operating expenses rate is calculated as follows:

$$R_{SD} = \frac{[(C_a \times r_{SD}) + (C_v \times \frac{\bar{V}_{SD}}{\bar{V}_t})] - (\bar{V}_{SD} \times S_{SD} \times r_s)}{\bar{V}_{SD}[1 - (S_{SD} + L_{SD})]}$$

Where,

C_a: Non-operating expenses of the employees' activities, r_{SD}: Rate allocating «C_a» deposits interest-free savings, C_v: Non-operating costs' dependent on size of deposits, V_{SD}: Average interest-free deposits Savings, v_t: Total average deposits, S_{SD}: The required reserve ratio for deposits in interest-free savings, r_s: The required reserve rate, L_{SD}: Retention Ratio of loan savings deposits for liquidity.

Calculate the cost of short-term investment deposits

$$R_{t,SHD} = R_{SHD} + R'_{SHD}$$

Where,

$R_{t,SHD}$: Short-term deposit investment rates, R_{SHD}: Short-term deposit investment rate of non-operational cost, R'_{SHD}: Operating cost rate of short-term investment deposits.

Non-operating expense ratio is obtained from the following formula:

$$R_{SHD} = \frac{[(C_a \times r_{SHD}) + (C_v \times \frac{\bar{V}_{SHD}}{\bar{V}_t})] - (\bar{V}_{SHD} \times S_{SHD} \times r_s)}{\bar{V}_{SHD}[1 - (S_{SHD} + L_{SHD})]}$$

Where,

r_{SHD}: Rate allocating «C_a» to deposit short-term investment, V_{SHD}: The average short-term investment deposits, S_{SHD}: The required reserve ratio for deposits' short-term investments, L_{SHD}: Retention Ratio of short-term investment deposits for liquidity.

Results

Results Kolmogorov - Smirnov to identify variables distribution

In order to select appropriate statistical tests to analyze the data collected, the distribution of variables must be evaluated. In this context, the study is designed to achieve this goal; the Kolmogorov-Smirnov test was used.

Table 1. Kolmogorov-Smirnov test for normality of variables.

Variable	The test statistic	Sig.
Loan Savings Deposits	1.072	0.201
Short-Term Investment Deposits	0.687	0.733

As can be seen significant levels according to the test and compare the results with 0.05 permissible error can be concluded with 95% confidence, the distribution of data related to loan savings deposits and short-term investment deposits follow a normal distribution. In order to examine the assumptions that have been calculated using these data should we use parametric tests such as t test.

The results of data analysis and test hypotheses

To test the hypotheses, the cost of deposits and short-term savings on both traditional costing and activity based costing t-test were analyzed. Test results indicate that the 99% confidence level can be concluded that the average cost of bank deposits to traditional costing methods and practices ABC there was no significant difference. This is due to the significance of the difference between the study does not costing all banking services. For example, the cost of bank loans, service fees, foreign exchange facilities, is opening of letters of credit and …. Has not been calculated. If all services were costing banks, in terms of the total cost of an organization in both traditional and activity based costing is the same and the only way to assign the goods and services are different, Arbitration significant difference between the average cost of services costing methods would not exist.

Table 2. Statistical results hypotheses.

Hypothesis	Cost calculation system	Average	SD	The test statistic T	Sign.
The first hypothesis	Activity-based costing systems	35.5615	23.8039	4.867	0.001
	Traditional costing systems	0.6005	1.0253		
The second hypothesis	Activity-based costing systems	11.7521	6.5236	-5.115	0
	Traditional costing systems	23.252	3.6121		

Conclusion

The main activity of banks, buy and sell funds and banks funds in the form of deposit in the form of facilities put at the disposal of natural and legal persons. Therefore, the resources and banking facilities should be managed in the best way possible. This process is only possible if management successfully manages the detailed information of the cost and benefits of this process are. The most significant bank debt items, various kinds of deposits by sectors ranging from institutional and private and public have been deposited. The aim of the present study to calculate and compare cost of loan savings deposits and short-term investment deposits under traditional costing systems, which are common in Iranian banks, and activity-based costing system. Given that banks deposit the loan savings deposits are considered free, or without cost, however, according to the results of the calculation of the cost of deposits in the bank observed activity-based costing considerable cost of this type of deposit and even the cost of deposits is even more short-term investment, The minimum deposit is related to deposits, short-term investments.

Regarding the fact that ABC system identifies the cost of deposits more exactly compared with the traditional system, changing the interest rate of deposits and the facilities conferred and careful identification of bank service's commission especially for different types of vouchers, issuing different types of bank cheques, cheque fax, drafts, issuing card, … seems to be absolutely necessary in These bank.

Conflict of interest

The authors declare no conflict of interest

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