

USAGE OF ACTIVITY-BASED COSTING ON A COMMERCIAL LOAN PORTFOLIO IN A SMALL BANK

Mehmet C. Kocakülâh, University of Southern Indiana, University of Southern Indiana, 8600 University Blvd., Evansville, IN 47712, Phone: 812.464.1730, email: mkocakul@usi.edu
Aaron Wood, The National Bank, 676 Mallard Ln, Henderson, KY 42420, awood@lightpower.net

ABSTRACT

The only way to control expenses is to have a better understanding of how certain products contribute to the overall expenses in day to day operation of a bank. The traditional costing system in banking does not effectively assign actual costs to the actual transaction. This is where activity-based costing will give bank managers a greater understanding of the true cost and profitability of all transactions in daily processes in the bank. Activity-based costing can be used in all areas of banking. However for this study, we will be looking at how activity-based costing can be used to determine the true profitability of all commercial loans transitions in a small bank.

Key words: Activity-Based Costing, Cost Benefit Analysis, Banking, Profitability

INTRODUCTION

The competitive environment in the banking/financial institution industry has made it very difficult to increase revenues and market share that is sufficient in growth and maximizing shareholder's wealth. The minimal growth in the area plus the over saturation of banks, financial institutions and other sectors (mortgage companies, insurance agencies, internet companies, etc.) competing for the traditional banking products has forced banks to look at ways to control their costs to reach the profitability levels that are necessary to appease their shareholders [3].

The only way to control expenses is to have a better understanding of how certain products and how they are setup to contribute to the overall expenses in day to day operation of a bank. The traditional costing system in banking does not effectively assign actual costs to the actual transaction. This is where activity-based costing will give bank managers a greater understanding of the true cost and profitability of all transactions in daily processes in the bank. Activity-based costing can be used in all areas of banking, and in some banks it is used in analyzing checking accounts for businesses. However for this study, we will be looking at how activity-based costing can be used to determine the true profitability of all commercial loans transitions in the bank.

Commercial loans represent 81.26% of the bank's total loan portfolio as of December 31, 2006 so it is a major contributor to the overall revenue of the bank [2]. However, commercial lending also represents a major expense of the bank. In general, the commercial lender and the Chief Credit Officer, manage the commercial lending portfolio. Aside from the Chief Executive Officer, these two officers have the two highest salaries in the bank. Also, commercial loans have to be managed a lot more closely with the review of financials and monitoring of collateral that is not required with other loans. This adds expense due to the lender's time, but the loan

assistant has to take time to collect the needed data and performed other tasks that will be mentioned later in the study.

Activity-Based Costing

The Activity-Based Costing (ABC) process attempts to give a better understanding and accurate assessment of the costs associated with producing a product or service and delivering it to its end-users. It looks at the activities associated with producing the product and service and the amount of resources that are required for these activities [1].

ABC is further defined as:

1. A more accurate cost management methodology
2. Mostly focuses on indirect costs (overhead)
3. Traces rather than allocates each expense category to the particular cost object
4. Makes “indirect” expenses “direct” [5]

One of the reasons to use ABC system is when there is a lot of competition [5].

As stated earlier in this study, the over saturation of banks, financial institutions and other sectors competing for tradition banking business provides a competitive environment that requires the need for a better understanding of costs, which makes the use of ABC imperative to obtain the levels of profitability required by the company and shareholders.

The five steps of the ABC process are: Identify Activities, Determine Cost of each Activity, Determine Cost Drivers, Collect Activity Data, and Calculate Product Cost [5].

Identify Activities

The following have been determined as the necessary activities when making a loan at the bank:

Underwriting - This is the process where the loan officer reviews the financials of the borrower to determine if the bank should extend credit. Depending on the total committed liability to the borrower, there are more steps required to complete underwriting. Also, the higher the committed liability, the loan officer may have to present the credit to the CCO, CEO, Board Loan Committee, or the entire Board of Directors.

Documentation Preparation and Set-up on System – The more complex the credit, the more time it takes for the loan assistant to produce the needed documentation and set-up of the loan on the bank system.

Review of Documents and Closing of Loan – The loan officer must review the documents for accuracy, and then must perform the loan closing.

Cost of Funds – Loans are funded through deposits in the bank or from borrowings from the Federal Home Loan Bank and/or Federal Funds Purchased.

Provision for Loan Loss - Each loan requires a portion of the income set aside as a provision for loan loss. This information goes to the Allowance to Loan Loss, which is an asset account set aside to cover losses when bad loans are charged off.

Payment – Payments can be made either manually or electronically. Manual payments require the loan assistant to produce tickets to apply the payments to the system. On Revolving Lines of Credits, there may be extra payments made as principal reductions.

Loan Advances – In a line of credit, all the money is not taken out at closing so later on funds must be advanced to the borrower. If the customer has a checking account, the funds can be directly deposited in their account. If not, a check must be written and sent or picked up by the customer.

Maintenance – Sometimes payments or advances are misposted so this requires the loan assistant to make corrections on the system.

Insurance Follow-up – The loan assistant must follow up with insurance agencies to make sure that loans with collateral have insurance still in place during the life of the loan.

Collection of Financials – At certain levels of borrowings, the bank requires yearly financial information to do annual reviews. The loan assistant sends letters to request financial information and updates the credit files. In most instances, the processor has to make copies of the financials.

Annual Reviews – The loan officer annually reviews the financial information collected on each borrower to review the company's performance. The review is used to determine that a credit is properly risk rated (the rating determines how much should be reserved in the loan loss for the potential loss) and to determine if there is any action plan needed by the bank.

Determine Cost Drivers

The loan officer performs Underwriting, Review of Documents and Closing of Loan, and Annual Reviews. The salary plus benefits of the loan officer is \$35.82 per hour. This will be the figure used to determine the total cost of each activity.

The loan assistant performs documentation Preparation and Set-up on System, Payment, Loan Advances, Maintenance, Insurance Follow-up, and Collection of Financials. The cost per hour is \$13.75.

Cost of Funds is the most important cost activity to consider in this case. Cost of Funds will be set at 3.22%, which was the overall end of month deposit cost for the bank [2]. However, this number is moving upward rapidly. As a small-community bank, one must monitor this activities closely making sure that bank can maintain a reasonable margin between the interest income and the interest expense. With the bank size, small shifts in the deposit portfolio play a major role on the bank's profitability. As have CDs maturing or the need for new deposits because of substantial loan growth, these new deposits are being booked at a 5.25% rate.

The final cost, the provision of loan loss, is determined by the risk rating of the credit. The provision cost is set-aside in the Allowance for Loan Losses. This allowance is used to cover losses from bad loans. The amount of allowance is determined by the risk of the bank's credit portfolio. Using this method, the bank has a surplus in the reserve because of its credit quality. However do to growth of the loan portfolio; the allowance is now less than 1% of total loans. The bank has determined that even though risk rating shows a surplus, bank management would like to raise the allowance to get it close to 1%. The bank has decided to look at a small provision each month of \$5000. This represents about 3.11% of the bank's net interest margin.

The bank has approximately 3.33% of its portfolio in risk rated 4, and only .79% in risk rated 6 categories. The rest of the credits are in the 1 – 3 categories, with the vast majority in the 3-risk rating. The following table shows what percentage of net interest margin will be reserved for each category.

As one can see, the risk rating 1 has a 0% reserved due to this category being loans secured by the bank's CDs. Since the enormous majority of the portfolio is 3-rated, we have made this percentage equal the average percentage mentioned above. The last two ratings are not applicable because these loans are going to be charged off.

There are some other costs that are not mentioned because of one factor or another. The major one is computers and data processing. At the bank's size, it is at all of the minimum levels. More or less computer transactions do not cause cost to go in any direction greatly. Once the bank has grown to a certain level, this will be another category to consider.

Collect Activity Data

Cost of funds and the provision are a one-time activity, even, though they can fluctuate due to rising or lower deposit costs or change in risk rating. However, the other costs are determined by the activities.

The first category is underwriting. There are four different categories: <\$50,000, >\$50,000, BLC, or BOD. The <\$50,000 requires minimal underwriting and paperwork. This would only require on average 2 hours of work. The next category >\$50,000 includes all loan approved by the loan officer greater than \$50,000, but does not have to go to the BLC (Board Loan Committee). The extra time is due to some extra underwriting paperwork and other requirements. The third level is BLC. The underwriting for this level increases plus there is a presentation that has to be prepared for the BLC (total time 4 hours). The last level is the BOD (Board of Directors). These credits are usually the most complex and require extra attention due to their size. Approximately 6 hours will be spent on these credits.

The next category is Documentation Preparation and Set-up on the System. There are three major categories: Unsecured, Mortgage, and Secured (UCC filing, deposit secured, or titled). On an unsecured loan, there is very little to do when preparing the documents. This will take the loan processor approximately 45 minutes to document and 45 minutes to be put the loan on the system. On a mortgage, the processor has to take the time to order an appraisal, title work, and flood searches. Processor must also take documents to be recorded. Documentation preparation

is on average 3 hours with 1.5 hours for Set-up on the system. The last category is Secured. It is basically between the other two categories. There are extra documents to prepare, and there are documents that have to be filed. On average, document prep time is 1.5 hours with set-up at 1 hour and 15 minutes.

The next cost activity is for the loan officer. It is the time spent reviewing documents and closing the loan. These categories are the same as the previous. Mortgages and secured loans have more documents to review before the closing, and obviously more document to review at closing. The following table shows the anticipated times.

The next activity is Payments. Payments can be made manually or electronically. Manual payments take about 5 minutes for the loan processor to write-up tickets and run them through the teller line each time. Electronic payments take about 15 minutes to set-up on the system, but this is a one-time event.

Advances are made on lines of credits. If the borrower has a checking account with the bank, it takes 5 minutes for the processor to complete. If the customer does not have a checking account with the bank, then the processor must write a check and mail it to the customer in most cases. This makes the activity approximately 15 minutes (1/4 hour).

If there is an error on the system, the processor must perform maintenance to fix the problem. This may include some research or a phone call to the customer. Overall, this has been determined that it takes roughly 20 minutes (1/3 hour).

The last two costs for the processor is Insurance Follow-up and Collection of Financial information. If a loan is secured by anything except accounts receivable or land, the bank requires insurance to be kept during the life of the loan. This requires the processor to follow-up on cancellations or other notices from the insurance agencies. This takes approximately 1/4 hour. On the Collection of Financial information, this requires the processor to notify the borrowers that financials are due, and in almost every case to make copies of the financial information for the bank. This on average takes 3/4 hour.

The final activity is a required Annual Review by the loan officer. The loan officer should be familiar with the company and should only have to look at the last year's financial information. However, since it has to be reviewed, it is a sizeable credit. This will take about 1 hour.

Calculate Product Cost

Since the activities have been identified, costs of each activity determined, the cost drivers determined, and data collected, one can now calculate the cost of each loan and determine the remaining profitability after subtracting the costs from the interest income plus loan fees.

Traditional Costing Numerically

As mentioned earlier, banks usually use traditional costing to determine the profitability of a loan. For this bank, Interest Income, Loan Fee, and Cost of Funds are determined by the same

method as it is in ABC. The difference comes in the Provision, Loan Processor Cost, and Loan Officer Cost.

For the provision, the total cost is divided by the total loan portfolio, and then multiplied by the balance of the loan to determine the loan's portion of the provision. On the Loan Processor Cost, processor is responsible for the entire commercial loan portfolio. So processor's salary is divided by the entire commercial loan portfolio, and then multiplied by the balance of each loan to determine processor's allocated cost for each loan. The loan officer's salary is divided by the portfolio, and then multiplied by the balance of each loan. This amount is then allocated to each loan.

Conclusion

Traditional costing is much easier to calculate than ABC. So the question is, why would one choose to use ABC? ABC gives a true cost for a loan compared to traditional costing, which allocates most of the expenses. Banking has become very competitive, and it has become imperative that banks like any other businesses allocate their resources to the most profitable areas.

What did our research study show on a commercial loan portfolio at a small-community bank? First let's look at Exhibit 4, which shows the profitability of the same loans under ABC and Traditional Costing systems.

In all loans, except for 3 (#3, 5, and 6), ABC system shows greater profit than Traditional system. Why is this and what can be concluded from this result?

First, let's look at the three loans that differ from the majority. Loans #5 & 6 were the only two loans that were in the under \$50,000 in underwriting. This shows that if expenses are not allocated. These loans are not as profitable for the bank because there is not a whole lot of relief on costs because a similar amount of work is required. The only really break is in the cost of funds and provision. Loan #3 is similar to the other two in the fact that it is small in size. However, since it is a part of a larger relationship, it had to be taken to the BOD for approval so a lot more underwriting work was required.

What ABC shows us here is that the bank needs to look at a junior lender at a smaller salary to handle these smaller loans. This also shows us that the loan officer has a lot of smaller relationships that are taking too much time and takes away from securing larger relationships that do not cost as much as the smaller loans when looked at cost as a percentage of loan balance. The regular lenders compensation needs to be concentrated in the larger loans. Finding accurate cost is one of the best ways to increase profitability of the bank to maximize shareholder's wealth. The final conclusion is that there are some work hours that are not accounted for in ABC system. This is reflected in profitability being higher in almost all loans in ABC system when compared to Traditional system. However, most of these hours can be attributed to prospecting for business and attending civic events. With these so-called non-production hours or non-value added activities, it is imperative that the production hours are maximized and productivity increased to help company's overall profitability.

REFERENCES

- [1] Anthony, Robert N., David F. Hawkins, and Kenneth A. Merchant. *Accounting Text & Cases*, McGraw-Hill Irwin, 12th e, 557 – 565.
- [2] McGuire, Brian L., Mehmet C. Kocakulah, and Leonard G. Wagers. *Implementing Activity-Based Management in the Banking Industry*. *The Journal of Bank Cost & Management Accounting*, http://findarticles.com/p/articles/mi_qa3682/is_199801/ai_n8759740.
- [3] The National Bank internal financial statements.
- [4] Uniform Bank Performance Report for the National Bank, <http://www2.fdic.gov/ubpr/UbprReport/SearchEngine/Default.asp>.
- [5] University of Pittsburgh lecture slides, <http://www.pitt.edu/~roztock/abc/abctutor/sld001.htm>.