

TOOL  
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## Profit and Loss Simulation Model

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This tool presents a simple profit and loss simulation for a programmed Christmas account. The model tracks the incoming funds from the monthly deposits and the channeling of those funds into loans. It then projects the income generated by the loan accounts. Finally, it projects the profit or loss on the savings and loans and also the return on the portfolio.

For this product, savers deposit \$50 per month from January through November. If the saver completes all of the 11 deposits, the institution pays the 12th installment of \$50. If a saver misses a deposit during those 11 months, he or she does not receive the full 12th installment. All of the savings accounts are withdrawn on December 15th, just in time for Christmas. The model assumes that out of the 1,000 savers who use the product, 10 percent deposit only half of the required installment each month.

The account receives a monthly deposit of \$50 (line 1). The net balance runs a cumulative total of the account balance (line 2). The savings, less the provisions for loan losses, are used to fund loans (line 3). The model assumes that 10 percent of loans are delinquent and that provisions are created for 100 percent of delinquent loans.

In the first month, the amount placed in loans (line 4) is \$50 minus the 10 percent provision, or \$45. The monthly income on the loans is calculated with an interest rate of 18.5 percent (line 5). In the second month, the amount placed in loans is calculated by summing the amount placed in loans the previous month, the income earned on those loans, and the new monthly deposit of \$50, for a total of \$95.69. In the third month, the amount placed in loans is calculated by adding the amount placed in loans in all previous months, the income earned on

those loans during the previous month, and the new monthly deposit of \$50, for a total of \$147.17. The calculation continues and funds are loaned out until December, when funds are placed in loans only until mid-December (and only half of the monthly income is earned).

The profit and loss per account is calculated for each month (line 8) by subtracting the financial cost on the savings (line 6) and the estimated operating costs of managing the savings and loans (line 7) from the income earned on the loans (line 5). The model assumes that operating costs are 2 percent of the net balance of the account divided by 12 months. The profit on the account grows each month until December, when the financial cost of \$50 is paid out.

The profitability of the total portfolio is calculated for each month (line 12) by adding the income earned on the loans financed by the 900 complete deposits, less the operating and financial costs associated with those accounts, plus the income earned on the loans financed by the 100 incomplete deposits, less the operating and financial costs associated with those accounts. After all accounts have been paid out in December, the total profitability on the portfolio is calculated by

### PROFIT AND LOSS SIMULATION MODEL

| ANALYSIS PER ACCOUNT                     | Months of the Program |                 |                 |                 |                 |
|--|-----------------------|-----------------|-----------------|-----------------|-----------------|
|  | JANUARY               | FEBRUARY        | MARCH           | APRIL           | MAY             |
| <b>1</b> Monthly Deposit                 | 50                    | 50              | 50              | 50              | 50              |
| <b>2</b> Net Balance                     | 50                    | 100             | 150             | 200             | 250             |
| <b>3</b> Balance Less Provision          | 45                    | 90              | 135             | 180             | 225             |
| <b>4</b> Amount Placed In Loans          | <b>45.00</b>          | <b>95.69</b>    | <b>147.17</b>   | <b>199.44</b>   | <b>252.51</b>   |
| <b>5</b> Income (Interest is compounded) | 0.69                  | 1.48            | 2.27            | 3.07            | 3.89            |
| <b>6</b> Financial Costs                 | 0                     | 0               | 0               | 0               | 0               |
| <b>7</b> Operating Costs                 | 0.08                  | 0.17            | 0.25            | 0.33            | 0.42            |
| <b>8</b> Profit/Loss                     | <b>0.61</b>           | <b>1.31</b>     | <b>2.02</b>     | <b>2.74</b>     | <b>3.48</b>     |
| PORTFOLIO ANALYSIS                       |                       |                 |                 |                 |                 |
| <b>9</b> % of Delinquency (variable)     | 0                     | 10              | 10              | 10              | 10              |
| <b>10</b> Complete Deposits              | 1,000.00              | 900             | 900             | 900             | 900             |
| <b>11</b> Incomplete Deposits            | 0                     | 100             | 100             | 100             | 100             |
| PROFIT/LOSS                              |                       |                 |                 |                 |                 |
| <b>12</b> Profitability of the Portfolio | <b>610.42</b>         | <b>1,234.85</b> | <b>1,905.41</b> | <b>2,587.60</b> | <b>3,281.59</b> |
| <b>13</b> Return on the Portfolio        |                       |                 |                 |                 |                 |

All amounts in U.S. dollars.

summing the profitability of all 12 months. The projected profit on this account is \$2960.91.

The return on portfolio (line 13) is calculated by dividing the total profit earned over the 12 months by the total amount placed in loans during the first half of December. The projected return on the portfolio is 0.50 percent.

| <b>Conditions</b>  |               |
|--|---------------|
| Monthly savings  | \$50          |
| Number of accounts   | 1000          |
| Incomplete deposits  | 10%           |
| Incomplete deposits equal half of required monthly deposit | \$25          |
| Interest rate on loans                                     | 18.50%        |
| Operating costs  | 2%            |
| Provisions for delinquency                                 | 10%           |
| Savings program maturity date                              | December 15th |

**Months of the Program**

| JUNE            | JULY            | AUGUST          | SEPTEMBER       | OCTOBER         | NOVEMBER        | DEC. 15TH         | TOTAL              |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|--------------------|
| 50              | 50              | 50              | 50              | 50              | 50              | 0                 |                    |
| 300             | 350             | 400             | 450             | 500             | 550             | 550               |                    |
| 270             | 315             | 360             | 405             | 450             | 495             | 495               |                    |
| <b>306.41</b>   | <b>361.13</b>   | <b>416.70</b>   | <b>473.12</b>   | <b>530.41</b>   | <b>588.59</b>   | <b>647.67</b>     |                    |
| 4.72            | 5.57            | 6.42            | 7.29            | 8.18            | 9.07            | 4.54              | 57.20              |
| 0               | 0               | 0               | 0               | 0               | 0               | 50                | 50.00              |
| 0.50            | 0.58            | 0.67            | 0.75            | 0.83            | 0.92            | 0.92              | 6.42               |
| <b>4.22</b>     | <b>4.98</b>     | <b>5.76</b>     | <b>6.54</b>     | <b>7.34</b>     | <b>8.16</b>     | <b>-46.38</b>     | <b>0.79</b>        |
| <hr/>           |                 |                 |                 |                 |                 |                   |                    |
| 10              | 10              | 10              | 10              | 10              | 10              | 10                |                    |
| 900             | 900             | 900             | 900             | 900             | 900             | 900               |                    |
| 100             | 100             | 100             | 100             | 100             | 100             | 100               |                    |
| <hr/>           |                 |                 |                 |                 |                 |                   |                    |
|                 |                 |                 |                 |                 |                 |                   | <b>PROFIT/LOSS</b> |
| <b>3,987.56</b> | <b>4,705.70</b> | <b>5,436.20</b> | <b>6,179.25</b> | <b>6,935.03</b> | <b>7,703.75</b> | <b>-41,606.46</b> | <b>2,960.91</b>    |
|                 |                 |                 |                 |                 |                 |                   | <b>0.50%</b>       |

