# Projecting Monthly Borrowings and Debt Balances – Demonstration of an Eighteen-Month Projection for Entrepreneurs

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## ABSTRACT

Cash is the blood stream for the life of many start-up enterprises. But most entrepreneurs lack the essential financial skills to project the timing and amounts of these needed funds to sustain their operations in the early stages when these companies start to function. These companies then run into a high level of financial stress that delays the timing of breakeven at this stage of operation and increases the possibility of the failure of their businesses. To demonstrate these skills, this case utilizes a four-step approach to project the monthly amounts of new debt and cumulative debt balances for an eighteen-month period. The timing of new debt and the repayment of these debts are derived after this eighteen-month projection is completed. The process of this case takes place in four different steps. Inventory purchases are estimated in the first step. Income statements are projected in the second step. The monthly cash budgets, which yield the estimates of new debt and the cumulative debt balance each month, are projected in step three. Step four takes the financial information obtained from previous steps to build up the monthly balance sheets. In step four, a basic accounting principle also serves as a sanity check to confirm the correctness of all projected numbers in this case. The content of this case demonstrates the essential skills that upper-level finance majors or MBA students should possess in the field of entrepreneurial or corporate finance.

Keywords: new debt projection, additional funds needed, entrepreneurial finance, repayment schedule

## INTRODUCTION: CONCEPTS AND STEPS

A successful startup company relies on its lifeblood, cash, to survive the early stage of operation. According to Leach and Melicher (2021, p. 48), the best practice for financial planning for this stage requires a monthly projection for at least one year ahead, especially for the need of additional funds to support the operation. However, many entrepreneurs lack such skills to project the timing of these borrowings and the amounts of these needed funds in a precise fashion. As a result, these companies run the risk of either being short of available funds to survive or committing too much to financial obligations. Either scenario will possibly result in a higher financial expense, which delays the timing of breakeven at this stage of operation and increases the possibility of the failure of the business.

Given current balance sheet, monthly sales forecasts for the coming eighteen months, and some basic operational assumptions, this case demonstrates a four-step approach to project the amount of needed borrowing each month for the eighteen-month period. After this projection is completed, the timing of the borrowing and repayment of these debts will then be indicated. This case assumes these borrowings will be secured from a bank loan via a line of credit.

The first step is to estimate a line item: inventory purchases for each month of the entire period, based on the given assumption of operation. This step utilizes the formula relating inventory policy and cost of goods sold to derive the amount of inventory purchases occurring each month. The second step requires the projection of the income statement for the following month. The completion of this projection yields the essential information regarding the cash inflows from sales and all cash outflows that include interest, tax and other cash expenses. Step three takes this cash-flow information and inventory purchases estimated from step one, along with the desired amounts of capital expenditure and cash position for operation, to construct the cash budget for the following month. After completing this cash budget, the amount of needed additional borrowing and the cumulative debt balance, which is labeled as Additional Funds Needed (AFN) on balance sheets, will be derived. For step four, this AFN from step three and the addition to retained earnings from step two will be entered on the right-hand side of the balance sheet and thus produce the total amount of liabilities and equity. The total liabilities and equity should be equal to total assets so as to be in line with the basic accounting principle. This condition also serves as a sanity check to confirm the correctness of all estimates from step one to step four.

To construct the entire eighteen-month projection for this case, steps two to four will need to be repeated to produce the financial results for the second month, and then repeat these steps for the third month and so on until all eighteen months' results are produced. After the projection of the entire eighteen-month period is completed, not only could the amounts of the additional borrowing and cumulative debt balance be derived for each month, but also the timing of these borrowings and the repayments of these debts as well. Furthermore, any additional increase in cash that is above the minimum required level given in this case for operation could also be anticipated from this projection.

The questions listed in this case are designed to follow the above four steps to derive this crucial financial information and comprehend the final results. In order to enhance students' understanding of the materials discussed in the case, utilizing at least three hours of class instruction time is recommended.

## BODY OF THIS CASE

OneZone, a Seattle-based private corporation specializing in portable speakers equipped with Bluetooth devices, has experienced strong growth in its online sales due to its competitive pricing and high quality. OneZone is expecting this success to continue and thus is seeking to borrow more funds from its bank. OneZone's CFO, Laura White, is scheduling a meeting next week with James Huang, a loan officer from Bank of America (BOA), to review the financing requirements of a loan. You are an assistant of Laura White and have been asked to prepare the monthly projection of Additional Funds Needed (AFN) for the coming eighteen-month period.

The following is the financial information of the company. CFO White requires you to incorporate it into your projection:

1. The amounts of AFNs will be borrowed via a credit line established with BOA that charges 12% annual interest rate for the next 18 months. OneZone's transactions with BOA regarding borrowing and repayment will occur only at the end of the month; interest is therefore the previous month's ending balance multiplied by an interest rate of 1%.
2. OneZone requires a minimum cash balance of $80,000 to start each month. Any shortage of this amount will be borrowed at the end of current month through the credit line with BOA.
3. All sales are credit sales with terms of 30 days. This means that Accounts Receivable (AR) are equal to sales each month. These credit sales are expected to be 100 percent collectable during the following month.
4. Current inventory is $500,000. This amount is also the targeted inventory for the end of each month. Inventory is purchased in the same month that sales occur, and this purchase is completely paid in cash in the month of purchase.
5. Cost of goods sold averages 70 percent of sales.
6. Other operating cash expenses average 8 percent of sales.
7. Current depreciation is $10,000 per month. However, OneZone expects a $150,000 capital investment paid in cash in July 2022. Therefore, the projected monthly depreciation will be increased to $12,000 starting August 2022.
8. Average tax rate is 30 percent.
9. No dividend is issued for this period.
10. Monthly projected sales for the coming eighteen months are listed in Table 1.
11. Current balance sheet ended in September 2021 is on Table 2.

To help you accomplish this task, your boss, Laura White, has identified the following questions that need to be addressed in order to aid you in projecting these additional funds needed (AFNs).

## QUESTIONS 1 TO 6

You are required to follow the order in which the questions are presented and provide your recommended solutions.

1. Construct the inventory schedule: project monthly inventory purchased from September 2021 to March 2023 (Step 1: projecting inventory purchased).
2. For October 2021, what are the projected amounts for the line items of cost of goods sold, other operating cash expenses, and interest expenses in the income statement? Construct

the income statement for October and apply the information in this statement to project October's addition to retained earnings (Step 2: projecting income statement).

3. What are the main line items to construct a cash budget in general? What are the amounts assigned to these line items for OneZone's cash budget in October (Step 3: project cash budget and debts)?
4. What are the amounts assigned to the line items of accounts receivable, inventory, net fixed assets, accounts payable, additional funds needed, and equity for October's balance sheet? Following the same set of line items given in Table 2, construct the balance sheet for October. In addition, derive the amounts of total assets and total liabilities and equity. Use this relationship (total assets should be equal to total liability and equity) as a sanity check to confirm the balance sheet is indeed balanced (Step 4: projecting balance sheet).
5. Repeat step 1 to step 4 for November 2021 and continue repeating these steps until March 2023. Demonstrate these monthly projections regarding balance sheets, income statements, and cash budgets and apply the sanity check of step 4 on the balance sheet each month for this eighteen-month period.
6. Based on the numbers on the last two line items – "Borrowing of Current Month" and "Cumulative Borrowing" on the cash budgets you derived for the solutions of Question 5, project when the borrowings through BOA's credit line are needed and how much these new debts will be. Among these months wherein new debts take place, which month will require the largest amount of debt? What is this amount and what is the balance of cumulative borrowing for that month? Furthermore, when is this line of credit completely paid off? By the end of March 2023, what is the total amount of cash projected for this eighteen-month period? Is there a possibility to pay off all debts on OneZone's balance sheet by the end of March 2023 with its cash position then? How much of this cash will remain if all debts are paid off?

**INSTRUCTOR'S NOTES**

**Answer 1:**

The inventory purchased each month is projected to be equal to the total needed amount of inventory at the end of each month minus the beginning inventory for that month. For each month, the total needed amount of inventory is the sum of the ending targeted inventory and the cost of goods sold, which is estimated to be 70% of the current-month sales. Monthly sales projection is given in Table 2. The ending inventory is targeted and set to be $500,000 each month in this case. Based on these given assumptions, monthly inventory purchases are projected for this period on Table 3.

**Answer 2:**

Based on the assumptions given in this case, the line items of cost of goods sold, operating expenses, and interest expenses are calculated to be the following:

Sales in October = $1,100, 000 (given in Table 1)
Cost of goods sold = 70% of Sales = 0.7*$1,100,000 = $770,000
Other operating cash expenses = 8% of current-month sales = 0.08*$1,100,000 =

$88,000
Interest expense = 1% per month * debt balance of September (debt is given in Table 2)
= 1%*(note Payable + long-term debt) = 0.01*($800,000 + $$400,000) = $12,000

The income statement of October is constructed based on the required accounting format of this statement. The amount of addition to retained earnings of October is projected to be $154,000. The construction of this income statement is displayed on Table 4.

**Answer 3:**

In order to construct the cash budget, the main structure of the cash budget should be understood first. It is listed in the following:

Cash inflows from operation (1)
Minus: cash outflows from operation (2)
Net cash flow from operation (3) = (1) - (2)
Add: beginning cash balance (4)
End cash balance after operation (5) = (3) + (4)
Minus: desired cash balance to start the next month (6)
Borrowing (7) = - [(5) - (6)] = (6) - (5)
Cumulative borrowing (8) = (8) in previous period + (7)

The cumulative borrowing here is also called Additional Funds Needed (AFN) in finance literature and it is also placed on the debt section of balance sheet.

To apply this structure to this case, the amount assigned to each line item needs to be projected. For OneZone, since there are no cash sales, the only source of cash inflows from operation is through its credit sales. Given the credit term of 30 days assumed in this case, the amount of accounts receivables, $80,000 on September's balance sheet, is the only number assigned for the cash inflow for October's cash budget. The line item for (1) of the above structure is thus $80,000.

Regarding the cash outflows from operation, line item (2) of the above structure, most companies will normally include the line items of inventory purchased, other cash expenses, interest expenses, tax expenses, and asset purchases with cash. For OneZone, the inventory purchased in October projected in Table 3, is $770,000. Other cash expenses, interest expenses, and tax expense are estimated from the income statement of Table 4 as $88,000, $12,000, and $66,000, respectively. Since there is no planned cash purchase of assets in October by the company, its cash outflow for October is thus $936,000, which is the sum of the inventory purchased ($770,000), other cash expenses ($88,000), interest expenses ($12,000), and tax expense ($66,000). Although there is no asset purchase in October 2021, OneZone is expected to spend $150,000 cash to purchase assets in July 2022. Students should assign this number to this line item when projecting the cash budget for July 2022. As a result of this asset purchase, depreciation expenses are thus assumed to increase from $10,000 to $12,000 starting in August 2022 for this case.

After the amounts of (1) and (2) are assigned to the above accounting format, the rest of the cash budget can be created with ease. With the desired cash balance set to be $80,000 to start each month, which is treated as an additional item for cash outflow, the availability of cash will be known at the end of October. After subtracting the desired cash balance (6) from the end cash balance after operation (5), if the amount remaining is negative, this indicates a shortage of funds for this month. This shortage will be the amount to be borrowed and this amount will be added to the line of credit owed to the bank. This added amount on the line of credit is thus the new debt for that month and this portion will also be added to the cumulative debt balance from the last month to become a larger balance this month on the cash budget. This cumulative debt balance is also the balance for AFN and AFN is displayed on the debt section of October's balance sheet.

Alternatively, after subtracting the desired cash balance (6) from the end cash balance after operation (5), if the amount remaining is positive, this indicates that there is enough cash left to pay down the line of credit. This amount is then assigned to the amount of repayment in that month, since all cash needs for operation this month have been satisfied and incorporated into the cash budget already.

Applying the data of OneZone to the format of the cash budget, the cash budget of October for OneZone is presented in Table 5. It projects a net cash outflow of $56,000 from operation. After adding the desired cash balance of $80,000 to start the operation in November, this shortage is increased to $136,000. This is the amount of required borrowing and is thus new debt for October. The new cumulative debt of this month is equal to the sum of the cumulative debt balance in September ($0) and the new debt in October ($136,000). This sum amounts to $136,000 (Table 5).

**Answer 4:**

Based on the assumptions given in this case, the amounts assigned to the line items of accounts receivable, inventory, net fixed assets, accounts payable, additional funds needed, and equity for October's balance sheet are calculated as follows.

Accounts receivables = sales forecasted in October, since all sales are credit sales as a given assumption in this case.
Inventory = $500,000. This amount will remain as $500,000 each month for the entire eighteen-month period. It is the targeted ending inventory assumed in this case to start the operation for the following month.
Net fixed assets = net fixed asset in September – depreciation in October + net fixed asset purchases in October = ($850,000, on balance sheet) – ($10,000, on income statement) + ($0, on cash budget) = $840,000.
Accounts payable = $0, since all inventory purchased in the current month is paid fully in cash, there is no debt left for this line item. It will stay at zero for the entire projection period.
Additional funds needed = cumulative debt balance in October = ($136,000 on cash budget)
Equity = equity in September + addition to retained earnings in October = ($1,030,000 on balance sheet) + ($154,000, on income statement) = $1,184,000.

Following the same set of line items on the balance sheet given for September in Table 2 and applying the basic accounting principle for the balance sheet, total assets are found to be $2,520,000 in October for OneZone. The total liability plus equity on the other side of balance sheet is this same amount. This equilibrium condition indicates the balance sheet of October is indeed balanced and this serves as a sanity check for all estimates derived from the previous steps (Table 6).

**Answer 5:**

The solutions of this question are demonstrated on Table 7. For the entire eighteen-month period, since the balance sheet of each month is indeed balanced, these projected numbers pass the required sanity checks (Table 7).

**Answer 6:**

When the numbers on the "Borrowing of Current Month" item on the cash budgets are projected to be positive from Table 7, it implies there are shortages of funds from operation and cash needs from these months should be addressed. This row indicates, from October 2021 to December 2021 marked as red cells, that shortages are expected to occur and need to be financed through OneZone's line of credit. The amounts of new debts are projected to be $136,000 for October, $260,000 for November, and $1,031,000 for December. For the entire period of eighteen months, the new debt added in December 2021 is the largest amount of debt occurred within a single month. By the end of December 2021, these three months of credit borrowing mark the highest balance of the cumulative debt for the entire period, amounting to $1,427,000.

When the numbers on the "Borrowing of Current Month" item on the cash budgets are projected to be negative from Table 7, it implies there are cash inflows from operation and OneZone has enough cash to repay its line of credit. In January 2022, this row shows a cash inflow of $1,731,000. This cash flow is large enough to allow the company to completely pay off its debt from its line of credit with a standing balance of $1,427,000 and still be left with $304,000 additional cash. Monthly operational cash inflows are projected to continue from February to June 2022 and they amount to $666,000, $425,000, $128,000, $128,000, and $129,000, respectively. Up to the end of June 2022, cash increases by $1,780,000. However, for the second half of 2022, OneZone is projected to encounter negative operational cash flows each month and is fortunate enough to be able to utilize its strong cash position at that point to take care of these cash needs with no need to add debt to its line of credit. By the end of December 2022, after meeting these needs, the balance of this additional cash drops to $288,000. From January 2023 to March 2023, OneZone once again is projected to have strong operational cash inflows each month, amounting to $1,475,000, $1,331,000, and $1,186,000, respectively. By the end of March 2023, the total amount of accumulated cash is projected to be $4,280,000. OneZone's cash position is so strong that it could choose to pay down all debts on its balance sheet. The debts on the balance sheet are notes payable of $800,000 and long-term debt of $400,000. If OneZone chooses to pay down all its debts, this cash will then be reduced to $3,080,000. In summary, whatever choice OneZone makes, its cash position projected in March 2023 remains strong and indicates success for its operation in the coming eighteen months.

**REFERENCE:**

Leach, J. Chris., & Melicher, Ronald W. (2021), Entrepreneurial finance. Stamford: Cengage Learning.

## APPENDIX

### Table 1: Forecasted Sales from October 2021 to March 2023 (Unit: Thousand of Dollars)

| | 2021 | | | 2022 | | | | | | | | | | | 2023 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (Unit: Thousands of | October | November | December | January | February | March | April | May | June | July | August | September | October | November | December | January | February | March |
| Forecasted Sales | 1100 | 1600 | 3100 | 1600 | 1100 | 800 | 800 | 800 | 800 | 1000 | 1200 | 1500 | 1800 | 2900 | 4100 | 3100 | 2100 | 1100 |

Note: All numbers in green cells are given in this case.

### Table 2: Balance Sheet as of September 30, 2021 (Unit: Thousands of Dollars)

| **Balance Sheet as of September 30, 2021 (Unit: Thousands of Dollars)** | |
|---|---|
| Cash | 80 |
| Accounts Receivable (AR= Sales of Current Month) | 800 |
| Inventories | 500 |
| Net Fixed Assets | 850 |
| Total Assets | 2230 |
| | |
| Accounts Payable (AP) | 0 |
| Notes Payable | 800 |
| Long-term debt | 400 |
| **Additional Funds Needed** | 0 |
| Total Liabilities | 1200 |
| Equity | 1030 |
| Total Liabilities and Equity | 2230 |

Notes:
1. Since there is no cash sales but only credit sales, the amount of ARs is thus equal to sales in September 2
2. Since all inventory purchased is paid full amount in cash, there is thus no APs in this case.

### Table 3: Inventory Schedule from September 2021 to March 2023 (Unit: Thousands of Dollars)

| | | 2021 | | | | 2022 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | September | October | November | December | January | February | March | April | May | June |
| **Inventory Schedules** | | | | | | | | | | | |
| Ending Targeted Inventory (Given in This Case) | | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 |
| Add: Cost of Goods Sold (= 70% of Sales) | 70% | 560 | 770 | 1120 | 2170 | 1120 | 770 | 560 | 560 | 560 | 560 |
| Total Needed Amount | | 1060 | 1270 | 1620 | 2670 | 1620 | 1270 | 1060 | 1060 | 1060 | 1060 |
| Minus: Beginning Inventory | | NA | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 |
| Total Purchased | | | 770 | 1120 | 2170 | 1120 | 770 | 560 | 560 | 560 | 560 |

| | 2022 July | August | September | October | November | December | 2023 January | February | March |
|---|---|---|---|---|---|---|---|---|---|
| **Inventory Schedules** | | | | | | | | | |
| Ending Targeted Inventory (Given in This Ca: | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 |
| Add: Cost of Goods Sold (= 70% of Sales) | 700 | 840 | 1050 | 1260 | 2030 | 2870 | 2170 | 1470 | 770 |
| Total Needed Amount | 1200 | 1340 | 1550 | 1760 | 2530 | 3370 | 2670 | 1970 | 1270 |
| Minus: Beginning Inventory | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 |
| Total Purchased | 700 | 840 | 1050 | 1260 | 2030 | 2870 | 2170 | 1470 | 770 |

**Table 4: Income Statement of October 2021 (Unit: Thousands of Dollars)**

| Income Statement of October 2021 (Unit: Thousands of Dollars) | | 2021 October |
|---|---|---|
| Sales | | 1100 |
| Minus: Cost of Goods Sold ( = 70% of Sales) | 70% | 770 |
| Gross Profit | | 330 |
| Minus: Other Operating Cash Expenses ( = 8% of Sales) | 8% | 88 |
| Minus: Depreciation | | 10 |
| EBIT | | 232 |
| Minus: Interest Expenses ( = 1% * Total Debt of Last M | 1% | 12 |
| EBT | | 220 |
| Minus: Tax Expenses (Average Tax Rate = 30%) | 30% | 66 |
| Net Income | | 154 |
| Minus: Dividend | | 0 |
| Addition to Retained Earnings | | 154 |

Notes:
1. All numbers in green cells are given in this case
2. Cost of Goods Sold = 0.7*1,100 = 770
3. Other Operating Cash Expenses = 0.08*1,100 = 88
4. Interest Expenses = 0.01* (Note Payable(800) +Long-term Debt (400)) = 0.01*12,000 =

## Table 5: Cash Budget of October (Unit: Thousands of Dollars)

| Cash Budget of October 2021 (Unit: Thousands of Dollars) | | 2021 September | 2021 October |
|---|---|---|---|
| **Cash Inflow from Operation (1)** | | | |
| Collection from ARs Last Month | | | **800** |
| **Cash Outflow from Operation (2)** | | | |
| Inventory Purchased | | | 770 |
| Other Cash Expenses (= 8% of Sales) | 8% | | 88 |
| Interest Payments | 1% | | 12 |
| Tax Payment | | | 66 |
| Fixed Assets Purchased | | | 0 |
| Total | | | **936** |
| **Net Cash Inflow from Operation ((3) = (1)- (2))** | | | **-136** |
| **Add: Beginning Cash Balance (4) (Given in This Case)** | | | 80 |
| **End Cash Balance after Operation ((5) = (3) + (4))** | | | -56 |
| **Minus: Desired Cash Level (Given in This Case) (6)** | | | 80 |
| **Borrowing of Current Month ((7) = - ((5)-(6)) = (6)-(5), (If >0, it indicates additional borrowing of current month ; If <0, it is amounted to "repayment" for this debt.)** | | | **136** |
| **Cumulative Borrowing = Additional Funds Needed = Cumulative Borrowing in Pervious Month + Borrowing This Month. A negative amount of this item indicates additional increase in cash.** | | **0** | **136** |

**Table 6: Balance Sheet of October (Unit: Thousands of Dollars)**

| | 2021 September | 2021 October |
|---|---|---|
| Forecasted Sales | (Realized sales ) | (Forecasted sales) |
| | 800 | 1100 |
| **Balance Sheet (Unit: Thousand of dollars)** | | |
| Cash | 80 | 80 |
| ARs (= Sales of Current Month) | 800 | 1100 |
| Inventories (Given in This Case) | 500 | 500 |
| Net Fixed Assets (Given in This Case) | 850 | 840 |
| Total Assets | 2230 | **2520** |
| | | |
| APs (Given in This Case) | 0 | 0 |
| Notes Payable | 800 | 800 |
| Long-term Debt | 400 | 400 |
| Additonal Funds Needed | 0 | 136 |
| Total Liabilities | 1200 | 1336 |
| Equity (=Equity in Pervious Month + Addition to Retained Earings in Current Month) | 1030 | 1184 |
| Total Liabilities and Equity | 2230 | **2520** |

Note: All numbers in green cells are given in this case.

**Table 7: The Monthly Projections of Balance Sheets, Income Statements, and Cash Budgets from October 2021 to March 2023 (Unit: Thousands of Dollars)**

| | 2021 | | | | 2022 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| (Unit: Thousands of Dollars) | September | October | November | December | January | February | March | April | May | June |
| Forecasted Sales | (Realized Sales | (Forecasted Sales Starting October 2021) | | | | | | | | |
| | 800 | 1100 | 1600 | 3100 | 1600 | 1100 | 800 | 800 | 800 | 800 |
| **Balance Sheet** | | | | | | | | | | |
| Cash | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| ARs (= Sales of Current Month) | 800 | 1100 | 1600 | 3100 | 1600 | 1100 | 800 | 800 | 800 | 800 |
| Inventories (Given in This Case) | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 |
| Net Fixed Assets (Given in This Case) | 850 | 840 | 830 | 820 | 810 | 800 | 790 | 780 | 770 | 760 |
| Total Assets | 2230 | 2520 | 3010 | 4500 | 2990 | 2480 | 2170 | 2160 | 2150 | 2140 |
| | | | | | | | | | | |
| APs (Given in This Case) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Notes Payable | 800 | 800 | 800 | 800 | 800 | 800 | 800 | 800 | 800 | 800 |
| Long-term Debt | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| Additional Funds Needed | 0 | 136 | 396 | 1427 | (304) | (970) | (1395) | (1523) | (1651) | (1780) |
| Total Liabilities | 1200 | 1336 | 1596 | 2627 | 896 | 230 | (195) | (323) | (451) | (580) |
| Equity (=Equity in Pervious Month + Addition to RE in Current Month) | 1030 | 1184 | 1414 | 1873 | 2094 | 2250 | 2365 | 2483 | 2601 | 2720 |
| Total | 2230 | 2520 | 3010 | 4500 | 2990 | 2480 | 2170 | 2160 | 2150 | 2140 |

| (Unit: Thousands of Dollars) | 2022 July | August | September | October | November | December | 2023 January | February | March |
|---|---|---|---|---|---|---|---|---|---|
| Forecasted Sales | 1000 | 1200 | 1500 | 1800 | 2900 | 4100 | 3100 | 2100 | 1100 |
| **Balance Sheet** | | | | | | | | | |
| Cash | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| ARs (= Sales of Current Month) | 1000 | 1200 | 1500 | 1800 | 2900 | 4100 | 3100 | 2100 | 1100 |
| Inventories (Given in This Case) | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 |
| Net Fixed Assets (Given in This Case) | **900** | 888 | 876 | 864 | 852 | 840 | 828 | 816 | 804 |
| Total Assets | 2480 | 2668 | 2956 | 3244 | 4332 | 5520 | 4508 | 3496 | 2484 |
| APs (Given in This Case) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Notes Payable | 800 | 800 | 800 | 800 | 800 | 800 | 800 | 800 | 800 |
| Long-term Debt | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 | 400 |
| Additional Funds Needed | (1591) | (1583) | (1520) | (1503) | (855) | (288) | (1762) | (3093) | (4280) |
| Total Liabilities | (391) | (383) | (320) | (303) | 345 | 912 | (562) | (1893) | (3080) |
| Equity (=Equity in Pervious Month + Addition to RE in Current Month) | 2871 | 3051 | 3276 | 3547 | 3987 | 4608 | 5070 | 5389 | 5564 |
| Total | 2480 | 2668 | 2956 | 3244 | 4332 | 5520 | 4508 | 3496 | 2484 |

| **Income Statement** | | 2021 September | October | November | December | 2022 January | February | March | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sales | | 800 | 1100 | 1600 | 3100 | 1600 | 1100 | 800 | 800 | 800 | 800 |
| Cost of Goods Sold ( = 70% of Sales) | 70% | 560 | 770 | 1120 | 2170 | 1120 | 770 | 560 | 560 | 560 | 560 |
| Gross Profit | | 240 | 330 | 480 | 930 | 480 | 330 | 240 | 240 | 240 | 240 |
| Operating Expenses ( = 8% of Sales) | 8% | 64 | 88 | 128 | 248 | 128 | 88 | 64 | 64 | 64 | 64 |
| Depreciation | | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| EBIT | | 166 | 232 | 342 | 672 | 342 | 232 | 166 | 166 | 166 | 166 |
| Interest Expenses ( = 1% * Total Debts Last Mon | 1% | | 12 | 13 | 16 | 26 | 9 | 2 | -2 | -3 | -5 |
| EBT | | | 220 | 329 | 656 | 316 | 223 | 164 | 168 | 169 | 171 |
| Tax Expenses | 30% | | 66 | 99 | 197 | 95 | 67 | 49 | 50 | 51 | 51 |
| Net Income | | | 154 | 230 | 459 | 221 | 156 | 115 | 118 | 118 | 119 |
| Dividend | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Addition to Retained Earnings | | | 154 | 230 | 459 | 221 | 156 | 115 | 118 | 118 | 119 |

| **Income Statement** | | 2022 July | August | September | October | November | December | 2023 January | February | March |
|---|---|---|---|---|---|---|---|---|---|---|
| Sales | | 1000 | 1200 | 1500 | 1800 | 2900 | 4100 | 3100 | 2100 | 1100 |
| Cost of Goods Sold ( = 70% of Sale | 70% | 700 | 840 | 1050 | 1260 | 2030 | 2870 | 2170 | 1470 | 770 |
| Gross Profit | | 300 | 360 | 450 | 540 | 870 | 1230 | 930 | 630 | 330 |
| Operating Expenses ( = 8% of Sale | 8% | 80 | 96 | 120 | 144 | 232 | 328 | 248 | 168 | 88 |
| Depreciation | | 10 | **12** | **12** | **12** | **12** | **12** | **12** | **12** | **12** |
| EBIT | | 210 | 252 | 318 | 384 | 626 | 890 | 670 | 450 | 230 |
| Interest Expenses ( = 1% * Total De | 1% | -6 | -4 | -4 | -3 | -3 | 3 | 9 | -6 | -19 |
| EBT | | 216 | 256 | 322 | 387 | 629 | 887 | 661 | 456 | 249 |
| Tax Expenses | 30% | 65 | 77 | 97 | 116 | 189 | 266 | 198 | 137 | 75 |
| Net Income | | 151 | 179 | 225 | 271 | 440 | 621 | 463 | 319 | 174 |
| Dividend | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Addition to Retained Earnings | | 151 | 179 | 225 | 271 | 440 | 621 | 463 | 319 | 174 |

| **Cash Budget** | | 2021 September | October | November | December | 2022 January | February | March | April | May | June |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cash Inflow from operation (1): | | | | | | | | | | | |
| Collection from ARs Last Month | | | 800 | 1100 | 1600 | 3100 | 1600 | 1100 | 800 | 800 | 800 |
| Cash Outflow from operation (2): | | | | | | | | | | | |
| Inventory Purchased | | | 770 | 1120 | 2170 | 1120 | 770 | 560 | 560 | 560 | 560 |
| Other Cash Expenses (= 8% of Sales) | 8% | | 88 | 128 | 248 | 128 | 88 | 64 | 64 | 64 | 64 |
| Interest Payments | 1% | | 12 | 13 | 16 | 26 | 9 | 2 | -2 | -3 | -5 |
| Tax Payment | | | 66 | 99 | 197 | 95 | 67 | 49 | 50 | 51 | 51 |
| Fixed Assets Purchased | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | | 936 | 1360 | 2631 | 1369 | 934 | 675 | 672 | 672 | 671 |
| Net Cash Inflow from Operation ((3) = (1)- (2)) | | | (136) | (260) | (1031) | 1731 | 666 | 425 | 128 | 128 | 129 |
| Add: Beginning Cash Balance (4) (Given in This Case) | | | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| End Cash Balance after Operation ((5) = (3) + (4)) | | | (56) | (180) | (951) | 1811 | 746 | 505 | 208 | 208 | 209 |
| Minus: Desired Cash Level (Given in This Case) (6) | | | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Borrowing of Current Month ((7) = - ((5)-(6)) = (6)-(5) | | | 136 | 260 | 1031 | (1731) | (666) | (425) | (128) | (128) | (129) |
| Cumulative Borrowing = Additional Funds Needed (AFN) | | 0 | 136 | 396 | 1427 | (304) | (970) | (1395) | (1523) | (1651) | (1780) |

| **Cash Budget** | | 2022 July | August | September | October | November | December | 2023 January | February | March |
|---|---|---|---|---|---|---|---|---|---|---|
| Cash Inflow from operation (1): | | | | | | | | | | |
| Collection from ARs Last Month | | 800 | 1000 | 1200 | 1500 | 1800 | 2900 | 4100 | 3100 | 2100 |
| Cash Outflow from operation (2): | | | | | | | | | | |
| Inventory Purchased | | 700 | 840 | 1050 | 1260 | 2030 | 2870 | 2170 | 1470 | 770 |
| Other Cash Expenses (= 8% of Sales) | 8% | 80 | 96 | 120 | 144 | 232 | 328 | 248 | 168 | 88 |
| Interest Payments | 1% | -6 | -4 | -4 | -3 | -3 | 3 | 9 | -6 | -19 |
| Tax Payment | | 65 | 77 | 97 | 116 | 189 | 266 | 198 | 137 | 75 |
| Fixed Assets Purchased | | 150 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 989 | 1009 | 1263 | 1517 | 2448 | 3467 | 2625 | 1769 | 914 |
| Net Cash Inflow from Operation ((3) = (1)- (2)) | | (189) | (9) | (63) | (17) | (648) | (567) | 1475 | 1331 | 1186 |
| Add: Beginning Cash Balance (4) (Given in This C | | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| End Cash Balance after Operation ((5) = (3) + (4)) | | (109) | 71 | 17 | 63 | (568) | (487) | 1555 | 1411 | 1266 |
| Minus: Desired Cash Level (Given in This Case) (6 | | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Borrowing of Current Month ((7) = - ((5)-(6)) = (6)-(5) | | 189 | 9 | 63 | 17 | 648 | 567 | (1475) | (1331) | (1186) |
| Cumulative Borrowing = Additional Funds Needed (AFN) | | (1591) | (1583) | (1520) | (1503) | (855) | (288) | (1762) | (3093) | (4280) |
| Cash Position after Paying All Debts | | | | | | | | | | 3080 |

Notes:

1. If the number on the "Borrowing of Current Month" is positive, this number indicates the amount of borrowing for that month. If this number i it is then the amount of repayment for that month.
2. Cumulative Borrowing = Additional Funds Needed (AFN) = Cumulative Borrowing in pervious month + Borrowing of Current Month. A negat of this item indicates additional increase in cash.
3. All numbers in green cells are given in this case.