

# Training Manual: The Basics of Financing Agriculture

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## Module 2.2 | Basics of the Profit & Loss Statement

# Acknowledgement

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*The Agriculture Finance Training Manual is part of AgriFin's Agriculture Finance Training Tools. The Manual was developed by [IPC](#) - Internationale Projekt Consult GmbH as part of AgriFin's technical advisory project for Cameroon Cooperative Credit Union League ([CamCCUL](#)).*

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# Session Overview

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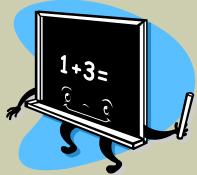
LEARNING OBJECTIVE	The Profit & Loss Statement is a financial statement that helps to evaluate the performance of a client's business. Agriculture Loan Officers (ALOs) should use Profit & Loss Statements to track and summarize the revenues, costs, and expenses incurred by a business during a specific time period.
SCOPE	<p>By the end of this session, the trainee will be conversant on the following principles:</p> <ul style="list-style-type: none"><li>• An understanding of the Profit &amp; Loss Statement</li><li>• An understanding of what is gained through Profit and Loss Statements</li><li>• Case studies and solutions to understand and practice learned concepts</li></ul>
TARGET	Agriculture loan officers, trainers, agriculture experts with limited financial analysis training, and other professionals interested in agriculture financing
DURATION	1 hour

# Content

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1. The Profit & Loss Statement
2. P&L: Basic Structure
3. Total Sales/Revenues
4. Cost of Goods Sold (COGS)
5. Gross income / Gross profit
6. Operating Expenses (Costs)
7. Operating Profit
8. Net Profit
9. Calculating Gross Profit Ratio (Margin)
10. P&L in Service Sectors
11. Case Study 1 - Analysis of P&L

# 1. The Profit & Loss Statement

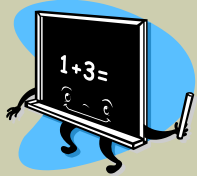


What is a Profit & Loss statement (P&L)?

- A “film” of an enterprise (dynamic; data for a certain period of time)
- Reflection of an enterprise’s business result for a certain period (profit/loss)
- Information about profitability (profit, profit rate) and cost management (costs and cost structures)
- Does not provide direct information on assets, liabilities or liquidity







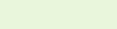
# 1a. The Profit & Loss Statement

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Can you draw the structure of the Profit & Loss Statement?

# 1a. The Profit & Loss Statement - Answer

	<b>Total sales / revenues</b>	← Total money received from sales in a period
	<b>Cost of goods sold</b>	← The costs that can be directly traced to each sold item
	<b>Gross income (Gross profit)</b>	← The profit made simply from selling the products
	<b>Operating costs</b>	← Other costs which cannot be directly traced to the goods
	<b>Operating profit</b>	← Profit made after deducting direct & indirect costs
	<b>Income taxes</b>	← Costs incurred by taxation
	<b>Net income (Net profit)</b>	← The profit that remains after all costs are deducted

Review all items of the Profit & Loss Statement and their relevance



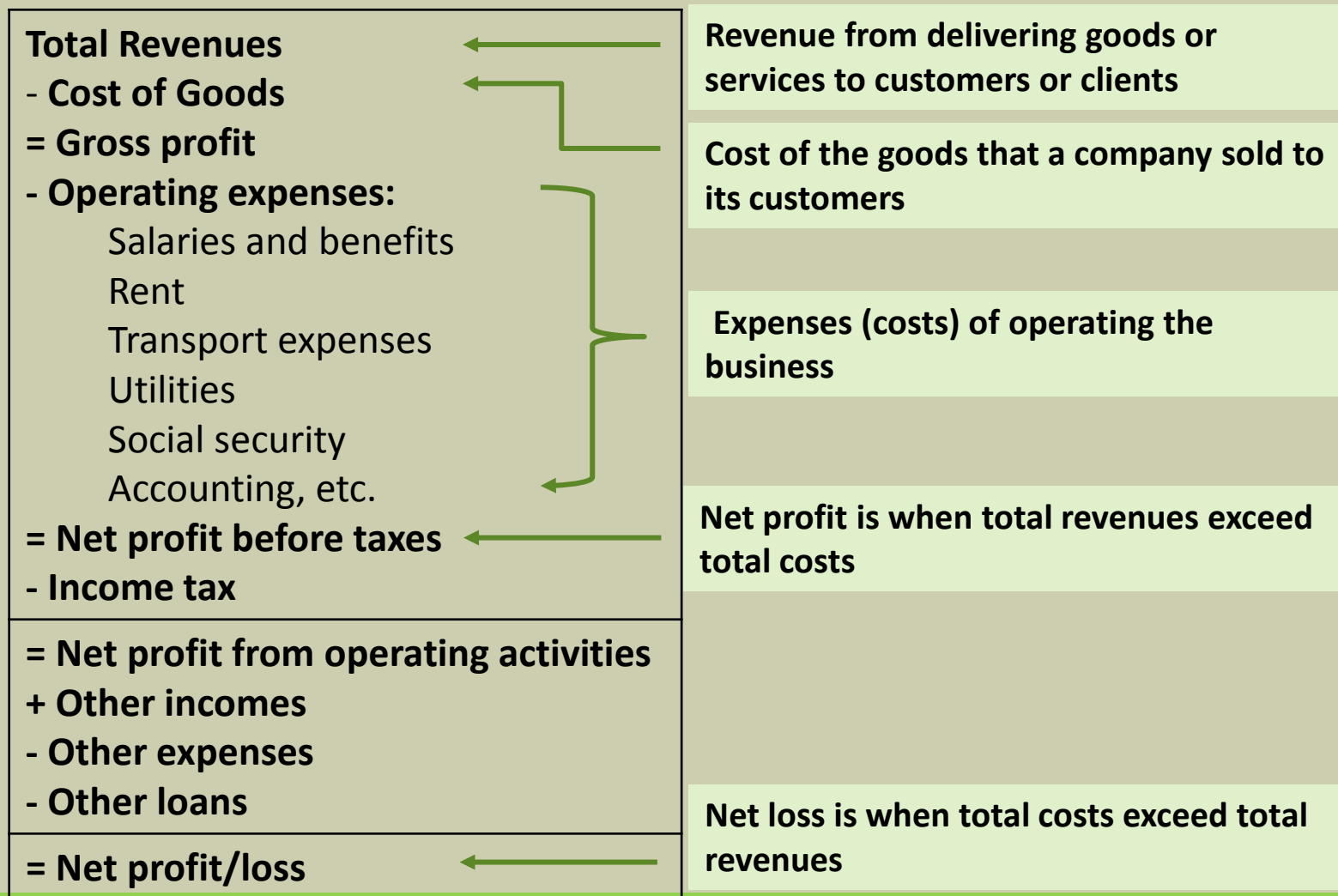
# 1b. The Profit & Loss Statement

	Total sales / income
—	Cost of goods sold
==	Gross income (Gross profit)
—	Operating costs
==	Operating profit
—	Income taxes
==	Net income (Net profit)
—	Family Expenses
+	Family income
—	Other loan payments
==	Disposable funds (before the loan)

Notice what is added in this P&L (family expenses, family income and other loan payments)



## 2. P&L: Basic Structure





# 3. Total Sales/Revenues

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The actual revenue from the sale of goods and services during a given period of time

- Including both sales in cash and sales on credit. So:

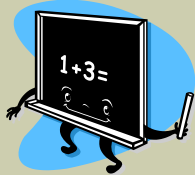
**Total revenues  $\neq$  Cash received (during the period)!**

- Production business:

**Sales  $\neq$  Production output (during the period)!**

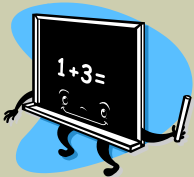
- Use the SALES price to calculate revenues

## 3a. Total Sales/Revenues



Why is total revenue different from cash received?

- Review previous slide
- Consider the example of a business that is NOT profitable but benefits from a cash injection (from a family member for instance). Therefore, the business would not be bankrupt.



Why are sales and production output different?

- Sales revenue may come from more than one source (doing several activities or same activity in different areas); collect data for each activity and area!



## 4. Cost of Goods Sold (COGS)

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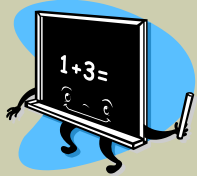
COGS is directly related to total revenues

### Traders

- COGS typically calculated using the purchase price.
- However, customs duties, transportation or other costs directly related to procurement and sale of the goods should also be included in COGS.

## 4a. Cost of Goods Sold (COGS)

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Explain COGS in your own terms with examples.



## 4b. Cost of Goods Sold (COGS)

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### MANUFACTURERS

- COGS calculation is based on the production cost per unit.
- If the enterprise produces more than one product, the cost for a unit of each product needs to be taken into account. If there are costs involved in generating the sale that can be directly attributed to each unit, these, too, should be included.

### SERVICE INDUSTRY

- COGS refers to the materials and labour consumed in providing the service.
- Micro lending: to simplify the approach we do not calculate COGS for service providers. The material and salaries consumed are all included in the operating expenses.



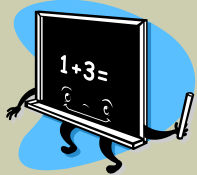
## 5. Gross income / Gross profit

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- A comparison of gross profit ratios for enterprises in the same sector can give you some information on the business “efficiency” of a certain enterprise.  
i.e. “Who can purchase or produce goods cheaper than others”.

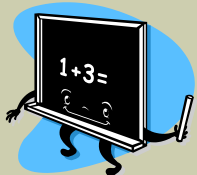
$$\text{Gross income} = \text{Total sales} - \text{COGS}$$

## 5a. Gross income / Gross profit



What is the formula to calculate Gross profit ratio?

- Gross profit ratio (margin) =  $(\text{Selling price} - \text{Purchasing price}) / \text{Selling price} * 100\%$ ; indicates the share of profit per XFA 1 sold



What is the formula to calculate Mark-up rate?

- Mark-up rate =  $(\text{Selling price} - \text{Purchasing price}) / \text{Purchasing price} * 100\%$ ; indicates the percentage added to the purchase price (or marked up from the purchase price)



## 6. Operating Expenses (Costs)

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Operating expenses are the regular expenses incurred which are necessary to be in a position to make sales or provide services during the period under consideration. They are NOT those directly associated with the sales revenue of the period (different from COGS).

- Operating expenses are regular and relatively stable expenses like salaries (the fixed part), rent, the market's management fee, tax, water and electricity fee, etc.
- When doing the analysis, be sure to get all operating expenses of the enterprise (incl. payment date and frequency)
- Typically, there are at least some records or receipts that can help you with further verification, e.g. rent contract, electricity bill, tax payment invoice, etc.

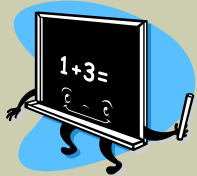


# 7. Operating Profit

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- The profit of an enterprise in a certain period before income tax is deducted
- Taxes are determined by government policy and not directly related to the operational efficiency of an entity
- Operating margin = Operating profit/Sales \* 100%
- Comparing operating margins can be used to compare businesses and evaluate the quality of their management:
  - An enterprise with a higher operating margin than the industry's average has a higher gross margin and/or lower operating expenses than its competitors.

# 7a. Operating Profit



What is the formula to calculate Operating margin?

- Operating margin = Operating profit/Sales \* 100%

An enterprise with a higher operating margin than the industry's average has a higher gross margin and/or lower operating expenses than its competitors. i.e. it is more efficient at purchasing (producing) goods or more efficient at how it organizes operations. This may indicate better management and more flexibility than others in the same business.



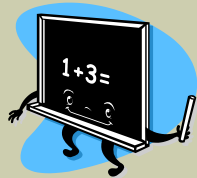
## 8. Net Profit

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The final operating result of an enterprise for the period (after tax)

$$\text{Net Profit Margin} = \text{Net Profit} / \text{Total Sales} * 100\%$$

## 8a. Net profit



How does Net profit vary?

- Net profit margins vary by industry and region.
- Within the same region and industry, differing margins can indicate quality differences in management.
- Typically within a given industry, the higher the net profit margin, the more efficient an enterprise is operating (the better its management).



## 9. Calculating Gross Profit Ratio (Margin)

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- Calculation of the Gross profit ratio is a crucial part of the P&L statement
- Mistakes in calculation can significantly affect the profitability of a business

**Gross Profit Ratio = (Sales price – Buying price)/sales price\*100%**

**Buying price of chair = XFA 30**

**Selling price of chair = XFA 50**

$$\text{Gross profit ratio} = \frac{(50 - 30)}{50} = \frac{20}{50} \times 100\% = 40\%$$

## 9a. Calculating Gross Profit Ratio (Margin)

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- This ratio is expressed as a percentage and shows what the gross profit is for every unit of sales revenues. It measures the relative profitability of an enterprise, revealing how effectively an enterprise makes decisions regarding pricing and direct costs.
- This ratio on its own shows the gross profitability of the enterprise at a certain point in time, but a downward trend over time, provided that the business line has remained the same, may be a sign of future problems for the enterprise and its net profits. Therefore it needs special attention from the LO/ALO.
- This ratio has to be compared with the figures for other enterprises with similar activities in the same business sector. There are many factors that affect the gross margins, but a higher gross margin than its competitors in the sector allows the enterprise more flexibility and provides a better financial standing.



## 9b. Calculating Gross Profit Ratio (Margin)

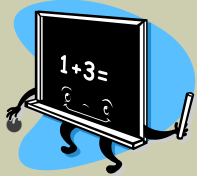
The Gross profit ratio is calculated using the weighted average method (weighted cost)

	Selling price	Buying price	Gross profit ratio	Share of sales	Share of total gross profit ratio
Product 1	20	10	50%	30%	15%
Product 2	10	6	40%	10%	4%
Product 3	14	8	42.86%	20%	8.57%
Product 4	22	16	27.27%	15%	4.09%
Product 5	40	20	50%	20%	10%
Product 6	12	4	66.67%	5%	3.33%

**Average = 44.99%**



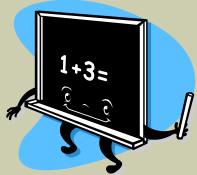
## 9c. Calculating Gross Profit Ratio (Margin)



How was Gross profit calculated in the previous slide? And what is the meaning of “share of sales”?  
(clue: when all added, it is 100%)

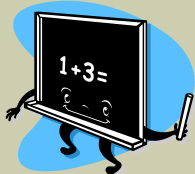
- Product 1:  $(20-10)/20 \times 100 = 50\%$
- Product 2:  $(10-6)/10 \times 100 = 40\%$  etc.

## 9d. Calculating Gross Profit Ratio (Margin)



How was weighted average calculated in slide 23?

- Weighted average:  
 $(30\% * 50\%) + (10\% * 40\%) + (20\% * 42.86\%) + (15\% * 27.27\%) + (20\% * 50\%) + (5\% * 66.67\%) = 44.99\%$



How was simple average calculated in slide 23?

- The simple average (i.e. equal weight to all) in this case would be:  
 $(50\% + 40\% + 42.86\% + 27.27\% + 50\% + 66.67\%) / 6 = 46.13$
- It does not look like a big difference, but 2% can make a difference. And, it is not always just 2%!



## 9e. Calculating Gross Profit Ratio (Margin)

For trade businesses with large and diverse inventories, we choose the most frequently sold products with their buying and selling prices and weight them:

	Selling price	Buying price	Share of sales	Gross profit ratio	Share of total gross profit ratio
Wooden chair	70	40	0.45	0.43	$0.45 \times 0.43$
Armchair	100	60	0.2	0.40	$0.2 \times 0.4$
Elegant chair	80	50	0.2	0.37	$0.2 \times 0.37$
Plastic chair	40	20	0.05	0.50	$0.05 \times 0.5$

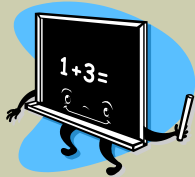
**Weighted estimated average = 37.25%**

## 9f. Calculating Gross Profit Ratio (Margin)

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By choosing the 4 best sellers we have covered 90% of the client's sales. The other 20 products the client has on stock can be ignored, because they are sold very rarely.

## 9g. Calculating Gross Profit Ratio (Margin)



How was weighted average calculated in the slide 26?

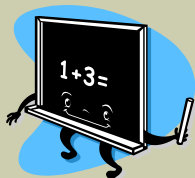
- $0.45 \times 0.43 + 0.2 \times 0.4 + 0.2 \times 0.37 + 0.05 \times 0.5 = 0.3725$  i.e. 37.25%
- Please note: if we do not weight, but assume equal shares in sales, the result looks very different: 42.5%.
- This is more than a 5% difference. Such a mistake can mean that a client could have difficulties repaying installments. So, be careful!



## 9h. Calculating Gross Profit Ratio (Margin)

For production businesses we must know the “recipe”, i.e. the “ingredients” needed to make one unit

WOODEN CHAIR	
Wood	XFA 20,000
Glue	XFA 3,000
Nails	XFA 1,000
Polish	XFA 6,000
Total costs	XFA 30,000
Selling price	XFA 70,000



Calculate gross profit ratio for the above example.



## 9h. Calculating gross profit ratio - Answer

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**For production businesses we must know the “recipe”, i.e. the “ingredients” needed to make one unit**

WOODEN CHAIR	
Wood	XFA 20,000
Glue	XFA 3,000
Nails	XFA 1,000
Polish	XFA 6,000
Total costs	XFA 30,000
Selling price	XFA 70,000

**Gross Profit Ratio = 57%**

## 9i. Calculating Gross Profit Ratio (Margin)

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Note: This includes all direct costs. This means that it can also include work (man hours needed) and others, such as electricity, water, etc. (not just materials)

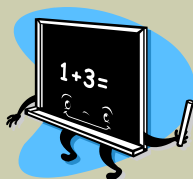


## 10. P&L in Service Sectors

For many service sector businesses COGS cannot be calculated or can only be calculated with an undue investment of time and effort; therefore, we treat all business related costs as operating expenses.

### Income Statement for a Travel Agency for April 2012

Service revenue	8,500	
- Expenses:		
Salary expenses	1,200	
Rent expenses		1,100
Utilities	400	
Total expenses		<u>2,700</u>



Calculate Net Income for this example.



# 10. P&L in Service Sectors - Answer

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## Income Statement for a Travel Agency for April 2012

Service revenue	8,500	
- Expenses:		
Salary expenses	1,200	
Rent expenses		1,100
Utilities	400	
Total expenses		<u>2,700</u>
<b>Net Income</b>	<b>5,800</b>	



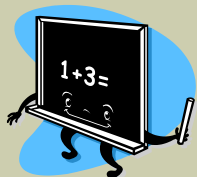
# 11. Case Study 1 - Analysis of P&L

## Mr. Ndicho's Clothing Factory

Mr. Ndicho has a factory making and selling clothes. In June the factory sold 1,000 items of clothing (XFA 100 each), 1,500 in July and 2,000 in August. The cost for each item is XFA 85. Material loss amounts to approx. 2% of the production cost per unit.

Every month, Mr. Ndicho pays XFA 7,500 in fixed salaries to workers and salesmen, XFA 3,700 for rent, XFA 400 for water and electricity, XFA 500 for transport, and XFA 200 for telephone expenses. Income tax is fixed at XFA 500 per month.

**Please calculate the Gross profit ratio and draw up the P&L for the three months.**



What is the fixed amount of operating expense? What is the tax?  
Calculate Gross profit ratio and draw up the P&L for the 3 months.



# 11a. Case Study 1 - Answer

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**What is the fixed amount of operating expense?**

**Fixed amount of operating expenses is: 12,300; tax is 500.**

**What are the Gross profit ratio and Mark-up rate?**

**Gross profit ratio = (Sales price - purchase price)/Sales price \* 100%**

**i.e.  $(100 - 85)/100 * 100\% = 15\%$**

**Mark-up rate = (Sales price - purchase price)/Purchase price \* 100%**

**i.e.  $(100 - 85)/85 * 100\% = 17.6\%$**



## 11b. Case Study 1 – Answer – P&L

	Jun	Jul	Aug
Sales	100,000	150,000	200,000
COGS	-85,000	-127,500	-170,000
<b>= Gross profit</b>	<b>=15,000</b>	<b>=22,500</b>	<b>=30,000</b>
Salary	-7,500	-7,500	-7,500
Rent	-3,700	-3,700	-3,700
Utilities & water	-400	-400	-400
Transport	-500	-500	-500
Telephone	-200	-200	-200
Material loss	-1,700	-2,550	-3,400
<b>= Operating profit</b>	<b>=1,000</b>	<b>=7,650</b>	<b>=14,300</b>
Income taxes	-500	-500	-500
<b>= Net profit</b>	<b>=500</b>	<b>=7,150</b>	<b>=13,800</b>

Although it is possible to do the P&L in this simplified way, the material loss could be easily included in the COGS. They are clearly direct costs, directly related to the number of units produced and sold.

# 11c. Case Study 1 – Answer – Corrected P&L

	Jun	Jul	Aug
Sales	100,000	150,000	200,000
COGS	-86,700	-130,050	-173,400
<b>= Gross profit</b>	<b>=13,300</b>	<b>=19,950</b>	<b>=26,600</b>
Salary	-7,500	-7,500	-7,500
Rent	-3,700	-3,700	-3,700
Utilities & water	-400	-400	-400
Transport	-500	-500	-500
Telephone	-200	-200	-200
<b>= Operating profit</b>	<b>=1,000</b>	<b>=7,650</b>	<b>=14,300</b>
Income taxes	-500	-500	-500
<b>= Net profit</b>	<b>=500</b>	<b>=7,150</b>	<b>=13,800</b>

This would be a more correct way of presenting the data. The fact that the material loss is part of the unit COGS becomes clearer and the actual amount of operating costs also becomes clearer.



# 11d. Case Study 1 – Net Profit Margin

What is the net profit margin for these three months?

$$\text{Net profit margin} = \text{Net profit} / \text{Total sales} * 100\%$$

<b>June</b>	<b><math>500/100,000 * 100\%</math></b>	<b><math>= 0.5\%</math></b>
<b>July</b>	<b><math>7,150/150,000 * 100\%</math></b>	<b><math>= 4.77\%</math></b>
<b>August</b>	<b><math>13,800/200,000 * 100\%</math></b>	<b><math>= 6.9\%</math></b>

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