



FINANCIAL FORECASTING IN PYTHON

# Introduction to the balance sheet

Victoria Clark

CGMA Financial Analyst

# Types of financial statements



**1. Income Statement**  
Income and Expenses



**2. Balance Sheet**  
Assets, Liabilities and  
Capital



**3. Cash Flow Statement**



**4. Statement of  
Shareholder's Equity**



# Assets and liabilities

Asset = Economic Resource

- Can be used to make money

Liability = Economic Obligation

- Usually the obligation to pay something



# Equity

```
equity = assets - liabilities
```

**Equity:** portion of owner's interest in a property or business

```
# House example  
house_cost = 100000  
down_payment = 20000  
mortgage = 80000  
tot_equity = house_cost - mortgage
```

```
# Balance sheet  
owners_equity = assets - liabilities
```





## Income Statement

Mark's Gadget Shop		
Sales		1,000
Costs of Goods Sold	-	600
Gross Profit		<u>400</u>
Operating Expenses		
Selling and Admin	-	100
R&D Expense	-	30
Training	-	20
Total Operating Expenses	-	<u>150</u>
Net Profit		<u><u>250</u></u>

## Balance Sheet

Mark's Gadget Shop		
Assets		
Bank		200
Debtors		50
Total Assets		<u><u>250</u></u>
Equity		100
Liabilities		
Loans		50
Creditors		100
Total Equity and Liabilities		<u><u>250</u></u>



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## FINANCIAL FORECASTING IN PYTHON

**Let's practice!**



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# Balance sheet efficiency ratios - Part 1

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CGMA Financial Analyst





# Debtors and creditors

- Sell now, get paid later
  - debtors
- Buy now, pay later
  - creditors





# The debtor days ratio

- How many days to receive payment from debtors
- Lower ratio is better
- Formula:

$$\blacksquare \text{ Debtor Days} = \frac{\text{EndingBalanceDebtors}}{\text{Sales}} \times \text{DaysInFinancialYear}$$

```
ddays_ratio = (debtors_end/sales_tot) * 365
```

# Days payable outstanding (DPO ratio)

- How many days to pay our creditors
- Higher ratio is better

- Formula:

$$\blacksquare DPO = \frac{EndingBalanceCreditors}{TotalCostOfGoodsSold} \times DaysInFinancialYear$$

```
dpo = (creditors_end/cogs_tot)*365
```



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**Let's practice!**



FINANCIAL FORECASTING IN PYTHON

# **Balance sheet efficiency ratios - Part 2**

Victoria Clark

CGMA Financial Analyst





# Days in inventory

## The inventory question:

How much stock is too little, and how much is too much?

- How many days to sell our inventory

- Days in inventory ratio:

- $$DII = \frac{\text{AverageInventory}}{\text{TotalCostOfGoodsSold}} \times \text{DaysInFinancialYear}$$

- Desired level depends on the industry



# Asset turnover ratio

- Assets compared to sales generated
- Highly dependent on the industry
- Formula:

- $$\text{Asset Turnover} = \frac{\text{Sales}}{\text{Total Average Assets}}$$

- **Production company:** high level of assets & low ratio
- **Tech start up:** low level of assets & high ratio



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