MODULE 03: FINANCIAL ANALYSIS

Lecture Title 05: ACCOUNTING RATIOS & SOURCES OF FINANCE

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Date: 25 January 2025

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What we covered in Lecture 04

- Profitability Ratios
- Efficiency Ratios

Use of Ratio Analysis

- Ratios are useful because:

  - Provide a quick and simple means of interpreting a business' financial information
  - Provide a picture of a company's financial health

  - They enable comparisons between companies that may differ in size (direct comparison of figures may be misleading)
  - Highlight financial strengths and weaknesses of the business

Classifications of Ratios

Ratios may be grouped into the following categories:

- Profitability
- Efficiency

- Liquidity
- Financial gearing
- Investment

Profitability Ratios

How successful is the business at using resources to make profit?

Key ratios:

- Return on capital employed (ROCE)
- Return on Equity
- Gross profit margin
- Operating profit margin

Profitability Ratios

RETURN ON CAPITAL EMPLOYED

$$\frac{\text{Net Profit for the year}}{\text{Equity + Liabilities}} \text{ X 100}$$

RETURN ON EQUITY

$$\frac{\text{Net Profit for the year}}{\text{Capital}} \text{ X 100}$$

$$\frac{\text{Gross Profit}}{\text{Sales Revenue}} \text{ X 100}$$

$$\frac{\text{Gross Profit}}{\text{Cost of Sales}} \text{ X 100}$$

Ratio Analysis and Efficiency

- Efficient management of assets and liabilities
- Measuring productivity of assets by comparing asset values to sales revenue
- Measuring stock turnover/receivables collection/payables payment

Efficiency Ratios

$$\frac{\text{Sales}}{\text{Net Assets}}$$

$$\frac{\text{Sales}}{\text{Fixed Assets}}$$

$$\frac{(\text{Opening Stock} + \text{Closing Stock}) / 2}{(\text{Cost of Sales}) / 365}$$

$$\frac{\text{Average trade receivables}}{\text{Credit Sales revenue}} \text{ X } 365$$

$$\frac{\text{Average trade payables}}{\text{Cost of Sales}} \text{ X } 365$$

Today's Agenda

Ratios

Management Accounts

Sources of Finance

Liquidity Ratios

Ratio Analysis and Liquidity

- A difficult concept
- Difficult to interpret
- Resources available to maintain working capital (current assets – current liabilities)
- Current ratio and acid test ratio
- Current assets to current liabilities
- Current assets less stock to current liabilities
- Need industry context (supermarkets run on lower liquidity ratios than aircraft manufacturers)
- Examine components of working capital

Liquidity Ratios

- Liquidity refers to the availability of cash in the near future after taking account of immediate financial commitments

- Key ratios:

CURRENT RATIO

$$\frac{\text{CURRENT ASSETS}}{\text{CURRENT LIABILITIES}}$$

ACID TEST

$$\frac{\text{CURRENT ASSETS - INVENTORIES}}{\text{CURRENT LIABILITIES}}$$

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NAXXAR RETAIL COMPANY LIMITED

INCOME STATEMENT

FOR THE YEAR ENDED 31 DECEMBER 2022

	€
REVENUE	
Sales - Clothing & Accessories	55,400
Sales - Shoes	26,645
TOTAL REVENUE	**82,045**
COST OF SALES	
Opening Stock	24,331
Purchases - Foreign	14,420
Purchases - Local	16,551
Closing Stock	- 19,445
COST OF GOODS SOLD	**35,857**
GROSS PROFIT	**46,188**
EXPENSES	
Accounting Fees	2,800
Bank Charges	921
Insurance	305
Legal Fees	5,500
Motor Expenses	1,960
Rent	1,560
Salaries and Wages	4,850
Sundry Expenses	806
Water & Electricity expenses	516
TOTAL EXPENSES	**19,218**
NET PROFIT / (LOSS)	**26,970**

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NAXXAR RETAIL COMPANY LIMITED BALANCE SHEET AS AT 31 DECEMBER 2022		
		€
FIXED ASSETS		
Buildings		58,000
Shop Fixtures		3,960
Motor Vans		3,500
TOTAL FIXED ASSETS		**65,460**
INVESTMENTS		
Investments in Shares of Other Companies		**15,000**
CURRENT ASSETS		
Stock at End of Year		19,445
Debtors		11,810
Prepayments		1,200
Bank Balances		1,134
TOTAL CURRENT ASSETS		**33,589**
TOTAL ASSETS		**114,049**
REPRESENTED BY:		
EQUITY		
Share Capital		20,000
Retained Earnings		35,521
Profit for the Year		26,972
TOTAL EQUITY		**82,493**
LONG-TERM LIABILITIES		
Bank Loans (over 12 months repayments)		**26,000**
CURRENT LIABILITIES		
Creditors		3,250
Accruals		2,306
TOTAL CURRENT LIABILITIES		**5,556**
TOTAL EQUITY & LIABILITIES		**114,049**

Current Ratio

CURRENT RATIO

$$\frac{\text{CURRENT ASSETS}}{\text{CURRENT LIABILITIES}}$$

$$\frac{33{,}589}{5{,}556}$$

6 : 1

CURRENT ASSETS	
Stock at End of Year	[illegible]
Debtors	[illegible]
Prepayments	[illegible]
Bank Balances	[illegible]
TOTAL CURRENT ASSETS	[illegible]

Creditors	[illegible]
Accruals	[illegible]
TOTAL CURRENT LIABILITIES	[illegible]

Acid Test

ACID TEST

$$\frac{\text{CURRENT ASSETS - INVENTORIES}}{\text{CURRENT LIABILITIES}}$$

$$\frac{33{,}589 - 19{,}445}{5{,}556}$$

2.5 : 1

CURRENT ASSETS	
Stock at End of Year	19,445
Debtors	[illegible]
Prepayments	[illegible]
Bank Balances	[illegible]
TOTAL CURRENT ASSETS	33,589

Creditors	[illegible]
Accruals	[illegible]
TOTAL CURRENT LIABILITIES	5,556

Financial Gearing Ratios

- Financial gearing occurs where a business is financed to some extent by borrowing (i.e. not financed by the owners as equity)

- *Key ratios:*
  - Gearing ratio
  - Interest cover ratio

Gearing Ratio

$$\frac{\text{Non-Current Liabilities}}{\text{Share Capital} + \text{Reserves} + \text{Non-Current Liabilities}} \times 100$$

EQUITY	
Share Capital	20,000
Retained Earnings	35,521
Profit for the Year	26,972
TOTAL EQUITY	**82,493**
LONG-TERM LIABILITIES	
Bank Loans (over 12 months repayments)	26,000

Gearing Ratio

$$\frac{\text{Non-Current Liabilities}}{\text{Share Capital} + \text{Reserves} + \text{Non-Current Liabilities}} \times 100$$

$$\frac{26{,}000}{20{,}000 + (35{,}521 + 26{,}972) + 26{,}000} \times 100$$

23.96 %

Interest Cover Ratio

- Measures the amount of operating profit available to cover interest payable

$$\frac{\text{Operating Profit before Interest}}{\text{Interest Payable}} \quad \frac{26,970 + 921}{921} \quad 30.28$$

- Assuming that Interest Payable was €921 (shown as Bank Charges)

Ratio Analysis and Investment

- Investment ratios indicate the health of the business from the point of view of the investor
- This involves a consideration of:
  - the way in which the business is financed
  - its ability to pay interest charges, and dividends
  - the relationship between returns to shareholders and the market price of the company shares
  - ability to pay interest and dividends
  - proportion of debt to equity

Investment Ratios

- Designed to help shareholders assess the returns on their investment

- Key ratios:
  - Dividend per share
  - Earning per share (EPS)
  - Price to earning ratio (P/E)

Dividend Per Share

- Measures the dividend paid per share in issue

$$\frac{\text{Total Dividend Paid}}{\text{Number of shares in issue}}$$

- Assuming €5,000 was paid out as Dividends

$$\frac{5{,}000}{20{,}000} \qquad \text{€ } 0.25 \text{ per share}$$

Earnings Per Share

- Relates the earnings generated by the business (available to shareholders) during a period, to the number of shares in issue

$$\frac{\text{Profit after tax}}{\text{Number of shares in issue}}$$

$$\frac{26{,}970}{20{,}000}$$

€ 1.35 per share

Price to Earnings Ratio

- Relates the market value of a share to the earnings per share

$$\frac{\text{Market value per share}}{\text{Earnings per Share}}$$

- If the market value of Company is € 2.85

$$\frac{2.85}{1.35}$$

2.11 : 1

Limitations of Interpretation Techniques

- Ratios and other calculations need to be compared to a standard measure
- Terms used to calculate ratios must be clearly defined, as there is considerable variation in their calculation
- Inflation may have a considerable distorting effect on the comparison of ratios over time or between industries
- Accounting policy choices by different companies can affect comparability
- Historical results may not be an accurate guide to the future

Limitations of Ratio Analysis

- Quality of financial statements (errors, historic cost).
- Based on figures at the date of the statement of financial position.
- Do not take into account the effects of inflation.
- Ratios are only useful if you can make comparisons – e.g. between companies, year on year.
- Different accounting policies may be applied in different years or by different companies, making comparisons difficult.

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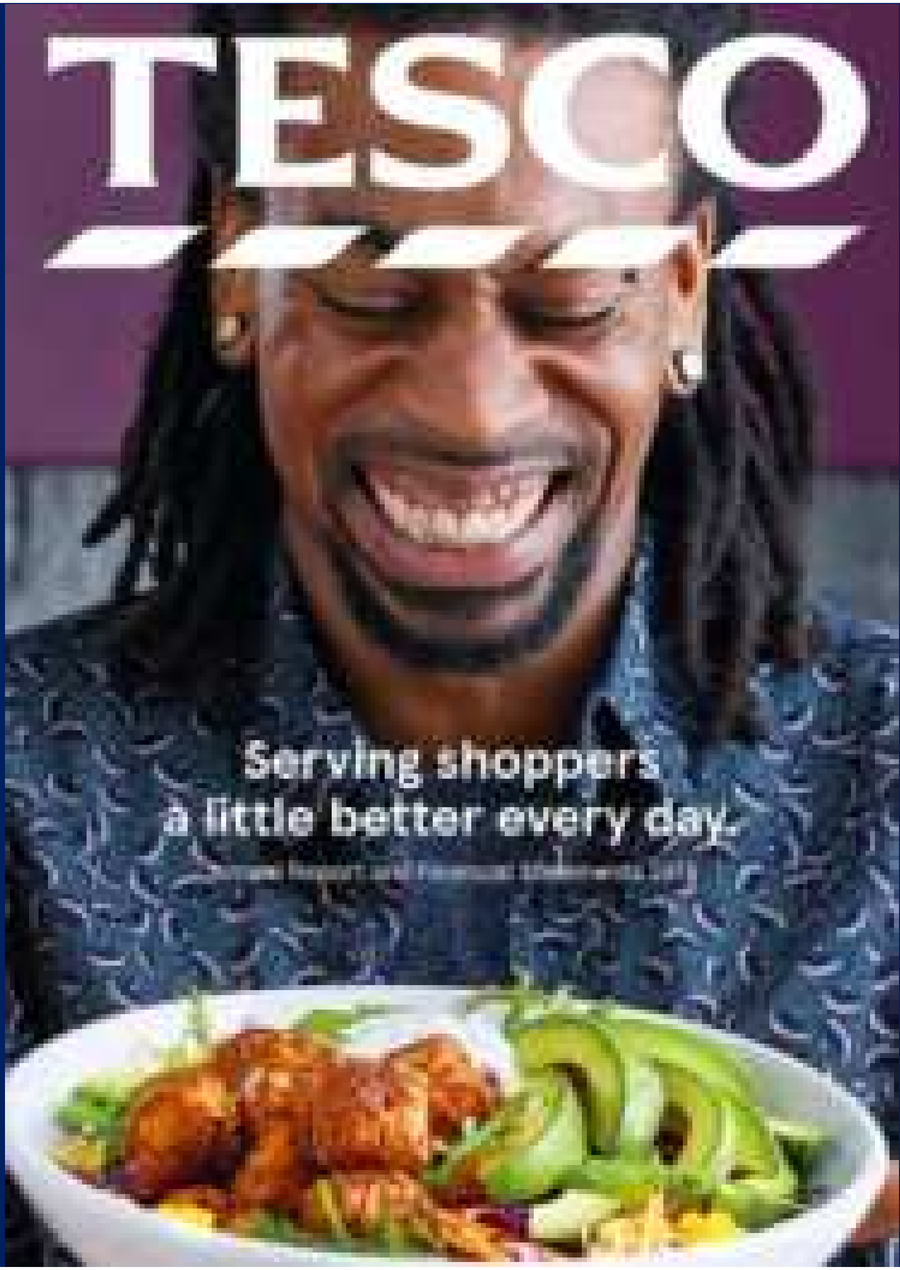
Group Work


TESCO
Serving shoppers
a little better every day.

Tesco at a glance

As a leading retailer, with 460,000 colleagues, we serve millions of customers every week, in our stores and online.

£49.9bn

£55.9bn

£1,280m

£1,017m

£145m

7.90p

0.81p

£(3.7)bn

6,809

79m

23m

460,000

Groups

GROUP A	GROUP B	GROUP C	GROUP D
Rajneet	Muhammad Yousaf	Abisek Shiwakoti	Nirmala Gajurel
Rohan Singh Jastoria	Rana Shehroz Sabir	Dipesh Kunwar	Mayank Dhiman
Saloni Gupta	Shrawan Das	Saroj Khadka	Sajan Rijal
Vishav Partap Singh	Hajra Haneef	Nisha Shestha	Aashika Khatiwoda
Moiz Jalil	Usman Ali	Nisha Shestha	Ajaya Ghimire
Gagandeep Singh	Manpreet Kaur	Nischal Rimal	Bebina Dahal
Juliet Nkiru Okele	Mahendra Dawadi	Bijay Uchai	Malik Habib Sultan

TESCO 2017 Ratios

- Calculate and comment on:
  - PROFITABILITY
  - the return on equity (ROI)
  - the return on capital employed (ROCE)
  - gross profit margin (GPM)

  - LIQUIDITY
  - The current ratio
  - The acid test ratio

  - FINANCING
  - Gearing ratio
  - Interest cover ratio

TESCO 2017 Ratios

- Calculate and comment on:
  - EFFICIENCY
  - Inventories turnover period
  - Trade receivables days period
  - Trade payables payment period
  - Non-current asset turnover

  - INVESTMENT
  - Dividend cover
  - Earnings per share
  - Price earnings ratio

TESCO 2017 Ratios - Solutions

- Return on capital employed (ROCE)

$$\frac{\text{Operating Profit for the year}}{\text{Equity + Non-CurrentLiabilities}} \quad X\ 100$$

$$\frac{1{,}017}{6{,}414 + 20{,}034} \quad X\ 100$$

3.84 %

TESCO 2017 Ratios - Solutions

- Gross profit margin (GPM)

$$\frac{\text{Gross Profit}}{\text{Sales Revenue}} \times 100$$

$$\frac{2{,}902}{55{,}917} \times 100$$

5.19 %

TESCO 2017 Ratios - Solutions

- Current Ratio

$$\frac{\text{CURRENT ASSETS}}{\text{CURRENT LIABILITIES}}$$

$$\frac{15{,}073}{19{,}234}$$

0.79 : 1

TESCO 2017 Ratios - Solutions

- Quick Ratio (Acid test)

$$\frac{\text{CURRENT ASSETS - INVENTORIES}}{\text{CURRENT LIABILITIES}}$$

$$\frac{15{,}073 - 2{,}301}{19{,}234}$$

0.68 : 1

TESCO 2017 Ratios - Solutions

- Gearing ratio

$$\frac{\text{Non-Current Liabilities}}{\text{Share Capital} + \text{Reserves} + \text{Non-Current Liabilities}} \times 100$$

$$\frac{20{,}034}{6414 + 20034} \times 100$$

75.75 %

TESCO 2017 Ratios - Solutions

- Interest cover

$$\frac{\text{Operating Profit before Interest}}{\text{Interest Payable}}$$

$$\frac{1{,}017}{874}$$

1.16 times

TESCO 2017 Ratios - Solutions

• Inventory turnover period	15.84 days
•	
• Trade receivables days	9.63 days
• Trade payables days	61.10 days
• Non-current asset turnover	1.84 times

TESCO 2017 Ratios - Solutions

- Dividend cover $= \dfrac{(£54m)}{£0} =$ N/A
- Earnings per share $= \dfrac{-£54m}{8{,}174{,}932{,}553} = -0.66p$
- Price earnings ratio $= \dfrac{188.99\ p}{-0.66p} = -286.35$

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Management Accounts

Management accounts

- Management accounting analyses and provides information to the internal management for the purposes of planning, controlling and decision making

- Not legally required
- Focused on the present and forecasts for the future
- Have an informal format and show only the required information
- Are used only inside the business
- Can be done daily, weekly, monthly
- Include non-financial information

Users of managerial accounting

The managerial accounting provides essential data used to run the business

It produces the information for the internal users:

- Board of directors – in fact it is an almost must for monthly board meetings
- Chief executive officer (CEO)
- Chief financial officer (CFO)
- Senior Management Team
- Business unit managers
- Plant managers
- Store managers
- Line supervisors

Outputs – information required by managers

The outputs of the management accounting provide the management with all necessary data to help them determine the status of their business

- achieving the set targets
- a loss or a profit

Outputs – information required by managers

The information that should always be on the managers' Radar

- Sales volumes
- Margins
- Fixed expenses
- Overdue accounts receivable
- Slow-moving inventory items

Outputs – information required by managers

The outputs that managers need

- Information on the cost of products and services
- Budgets
- Performance reports
- Other information

Outputs – information required by managers

Tools used by managers when making decisions regarding the future of the business

- Ratio analysis
- Budgets (financial plans)
- Forecasts (of costs and revenues)

Vertical Analysis

- Replace numbers with percentages
  - P&L - % of sales
  - Balance sheet - % of net assets
- Certain relationships between costs and revenue should be explicable
  - Gross profit %
  - Net profit %
  - Overhead cost categories as % of sales
- Indicates important balance sheet items
- Allows comparison between companies of different sizes/ companies reporting in different currencies
- A focus for further investigation

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NAXXAR RETAIL COMPANY LIMITED

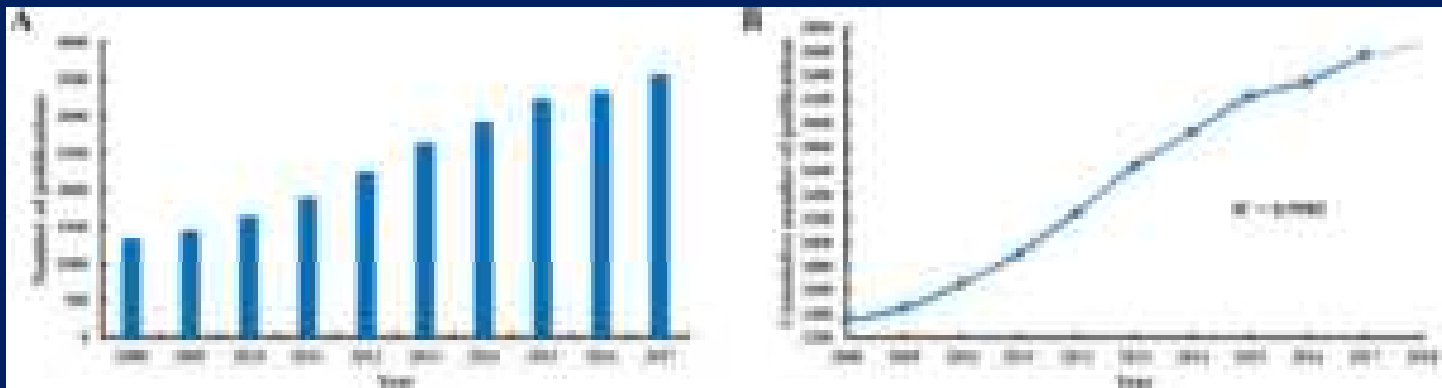
INCOME STATEMENT

FOR THE YEAR ENDED 31 DECEMBER 2022

	€	%
REVENUE		
Sales - Clothing & Accessories	55,400	68%
Sales - Shoes	26,645	32%
TOTAL REVENUE	82,045	100%
COST OF SALES		
Opening Stock	24,330	
Purchases - Foreign	14,420	
Purchases - Local	16,550	
Closing Stock	- 19,445	
COST OF GOODS SOLD	35,855	44%
GROSS PROFIT	46,190	56%
EXPENSES		
Accounting Fees	2,800	3%
Bank Charges	921	1%
Insurance	305	0%
Legal Fees	5,500	7%
Motor Expenses	1,960	2%
Rent	1,560	2%
Salaries and Wages	4,850	6%
Sundry Expenses	806	1%
Water & Electricity expenses	516	1%
TOTAL EXPENSES	19,218	23%
NET PROFIT / (LOSS)	26,972	33%

Horizontal Analysis

- % changes over time
- Indicates key changes (used by auditors)
- Five year summaries in annual reports



The Story behind the Numbers

- Impossible to read numerical tabulations with any accuracy
- Concentrate on main numbers (profits – net assets – debt- net cash flow movement)
- Major asset movements
- Major changes in group structure
- Major changes in financing
- Prospects for future growth
- Additional information outside accounting statements
- Compare interest paid to loans
- Changes in management

Samples of Management Accounts

Copy the P&L Data and paste it in the actuals sheets

Item	01-ene-19	01-feb-19	01-mar-19	01-abr-19	01-may-19	01-jun-19	01-jul-19	01-ago-19	01-sep-19	01-oct-19	01-nov-19	01-dic-19
Revenue	**757.388**	**1.531.004**	**2.320.788**	**3.126.685**	**3.948.719**	**4.786.835**	**5.640.966**	**6.511.036**	**7.397.081**	**8.299.130**	**9.217.208**	**10.151.162**
Recurrent Revenue	**743.032**	**1.502.277**	**2.277.673**	**3.069.166**	**3.876.781**	**4.700.561**	**5.540.141**	**6.395.742**	**7.267.304**	**8.154.853**	**9.058.414**	**9.977.836**
Subscriptions Revenue	743.032	1.502.277	2.277.673	3.069.166	3.876.781	4.700.561	5.540.141	6.395.742	7.267.304	8.154.853	9.058.414	9.977.836
Other Revenues	**14.356**	**28.727**	**43.115**	**57.519**	**71.938**	**86.374**	**100.826**	**115.294**	**129.777**	**144.277**	**158.794**	**173.326**
Set-up Fees	14.356	28.727	43.115	57.519	71.938	86.374	100.826	115.294	129.777	144.277	158.794	173.326
Post Launch Services	0	0	0	0	0	0	0	0	0	0	0	0
Reimbursement of expenses	0	0	0	0	0	0	0	0	0	0	0	0
Services Revenue	0	0	0	0	0	0	0	0	0	0	0	0
Cost of Sales	**56.314**	**112.963**	**169.944**	**227.251**	**284.887**	**342.847**	**403.084**	**465.806**	**528.845**	**592.202**	**655.877**	**719.862**
COGS	**56.314**	**112.963**	**169.944**	**227.251**	**284.887**	**342.847**	**403.084**	**465.806**	**528.845**	**592.202**	**655.877**	**719.862**
Subcontracted Services	38.174	76.347	114.521	152.694	190.868	229.041	271.341	313.642	355.942	398.243	440.543	482.843
Hosting Costs	18.092	36.519	55.276	74.359	93.770	113.503	131.385	151.752	172.435	193.436	214.751	236.377
Other COGS	48	97	147	198	250	303	357	412	468	526	583	642
Gross Profit	**701.074**	**1.418.041**	**2.150.844**	**2.899.433**	**3.663.832**	**4.444.088**	**5.237.883**	**6.045.229**	**6.868.236**	**7.706.928**	**8.561.331**	**9.431.301**
Operating Expenses	**490.758**	**981.507**	**1.471.375**	**1.960.474**	**2.449.572**	**2.938.671**	**3.429.450**	**3.918.568**	**4.408.295**	**4.898.853**	**5.384.741**	**5.872.489**
Payroll Expenses	**405.659**	**811.319**	**1.216.978**	**1.622.638**	**2.028.297**	**2.433.956**	**2.839.616**	**3.245.275**	**3.650.934**	**4.056.594**	**4.462.253**	**4.867.913**
Salaries and Wages	331.329	662.658	993.987	1.325.316	1.656.645	1.987.974	2.319.303	2.650.633	2.981.962	3.313.291	3.644.620	3.975.949
Payroll Taxes	30.821	61.643	92.464	123.285	154.107	184.928	215.749	246.570	277.392	308.213	339.034	369.856
Employee Benefits	43.509	87.018	130.527	174.036	217.545	261.054	304.563	348.072	391.581	435.090	478.599	522.108
Marketing & Advertising	**53.211**	**106.423**	**159.634**	**212.846**	**266.056**	**319.268**	**372.479**	**425.690**	**478.902**	**532.113**	**585.324**	**638.535**
Advertising	40.786	81.572	122.358	163.144	203.930	244.716	285.502	326.288	367.074	407.860	448.646	489.433
Paid Content	12.425	24.850	37.276	49.701	62.126	74.551	86.977	99.402	111.827	124.252	136.678	149.103
G&A Expenses	**23.705**	**47.411**	**71.116**	**94.821**	**118.526**	**142.232**	**167.437**	**191.142**	**214.847**	**238.553**	**262.258**	**285.963**
Postage & Delivery	0	0	0	0	0	0	0	0	0	0	0	0
Royalties	0	0	0	0	0	0	0	0	0	0	0	0
Commissions & Bonuses	0	0	0	0	0	0	0	0	0	0	0	0

Source of Finance

Sources of Finance

- Short-Term Finance
- Long-Term Finance
- Outside Investment at start up phase
- Outside Investment at ongoing phase

- Importance of having adequate finances
- Based on size, type, development phase, scope and purpose of business entity

Short-Term Sources of Finance

- Short-term purposes
- NEVER use short-term finance to finance long-term activity (hard core)
- Day-to-day operations
- Linked to seasonal needs of the business
- Internal Sources
  - Stricter credit controls (cash conversion cycle)
  - Extending payment terms
  - Dispose of Inventory
  - Using Retained Earnings

Short Term Finance

- Overdraft facility
- Usually immediate solution to short-term difficulties
- Advantages
  - Flexible
  - Arranged fairly quickly with banks
  - Collateral may be minimal
- Disadvantages
  - Repayable on demand
  - Higher interest rates
  - Commitment fees payable annually
  - Secured against a source of income

Short-Term Finance

- Short-term Loan
- Fixed interest rates and repayment
- Established for the whole period of time
- Lower interest rates vs. overdraft
- Disadvantages
  - Interest paid on full amount
  - Restrictions on operations and Board decisions
  - Security
  - Longer times to negotiate

Short-term Finance

- Trade Credit
  - Interest Free
  - No early repayment discounts
  - Reputation – good credit lines

- Leasing
  - Monthly payments vs. outright purchase
  - No large initial capital
  - Costlier than straight purchase
  - Has to be paid till end f agreement, even if not required

Long-Term Sources of Finance

- To purchase and finance long-term assets (Fixed Assets)
- Cheaper than short-term finance
- Longer to obtain
- Colalteral

- Long-term Debt
- Equity

Long-term Bank Debt

- Long-term Loan – fixed amount for a fixed period
- Advantages
  - Exact amount of interest payments
  - Fixed interest
  - Balance cannot be changed
  - Lower interest rate
- Disadvantages
  - Early payment penalty fee
  - Covenants imposed by Bank
  - Security is higher (related to amounts taken)

Bonds

- Bonds are similar to bank loans
- Sold directly to investors
- Accessible to very good credit rating businesses
- Costly to issue bonds
- Advantages
  - Cheaper than bank debt (in the long run)
  - No need for collateral
  - Trade on capital markets
- Disadvantages
  - High issue costs
  - Increased governance

Equity

- Sale of ordinary shares to investors
- Initial Public Offering (IPO)
- Advantages
  - Permanent capital
  - No fixed repayment of returns – no Dividends policy
  - Investment pool is larger
  - Owners can divest parts of their company
- Disadvantages
  - Costliest form – issue costs
  - Losing control
  - Only attractive when business is healthy

Hybrid instruments

- Convertible Bonds
  - Established date to convert to equity
  - Debt → Equity
  - Interest due when debt; Dividends when Equity

- Preference Dividends
  - Equity, with fixed dividend
  - Only when profits are registered
  - Higher priority than Ordinary Shares - Liquidations