

MODULE 03: FINANCIAL ANALYSIS

Lecture Title 05: ACCOUNTING RATIOS & SOURCES OF FINANCE

Lecturer: Antoine P. Portelli

Date: 20 January 2024



**Undergraduate Diploma in
Business Administration**

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

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

RETURN ON EQUITY

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

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

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

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

Sales	Sales
Net Assets	Fixed Assets

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

Average trade receivables	X 365
Credit Sales revenue	

Average trade payables	X 365
Cost of Sales	



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		
CURRENT ASSETS		
CURRENT LIABILITIES		

ACID TEST		
CURRENT ASSETS - INVENTORIES		
CURRENT LIABILITIES		



Undergraduate Diploma in Business Administration

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
<u>COST OF SALES</u>		
Opening Stock		24,331
Purchases - Foreign		14,420
Purchases - Local		16,551
Closing Stock		- 19,445
<u>COST OF GOODS SOLD</u>		35,857
<u>GROSS PROFIT</u>		46,188
<u>EXPENSES</u>		
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
<u>TOTAL EXPENSES</u>		19,218
<u>NET PROFIT / (LOSS)</u>		26,970



Undergraduate Diploma in Business Administration

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



Current Ratio

CURRENT RATIO
CURRENT ASSETS
CURRENT LIABILITIES

33,589
5,556

6 : 1

CURRENT ASSETS	
Stock at End of Year	19,445
Debtors	11,810
Prepayments	1,200
Bank Balances	1,134
TOTAL CURRENT ASSETS	33,589

CURRENT LIABILITIES	
Creditors	3,250
Accruals	2,306
TOTAL CURRENT LIABILITIES	5,556



Acid Test

ACID TEST	
CURRENT ASSETS - INVENTORIES	
CURRENT LIABILITIES	

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

2.5 : 1

CURRENT ASSETS	
Stock at End of Year	19,445
Debtors	11,810
Prepayments	1,200
Bank Balances	1,134
TOTAL CURRENT ASSETS	33,589

Creditors	3,250
Accruals	2,306
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

Non-Current Liabilities

X 100

Share Capital + Reserves + Non-Current Liabilities

EQUITY

Share Capital	20,000
Retained Earnings	35,521
Profit for the Year	26,972
<u>TOTAL EQUITY</u>	<u>82,493</u>

LONG-TERM LIABILITIES

Bank Loans (over 12 months repayments)	26,000
--	--------



Gearing Ratio

Non-Current Liabilities	X 100
Share Capital + Reserves + Non-Current Liabilities	

26,000	X 100
$20,000 + (35,521 + 26,972) + 26,000$	

23.96 %



Interest Cover Ratio

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

Operating Profit before Interest	26,970 + 921	30.28
Interest Payable	921	

- 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

$$\frac{5,000}{20,000}$$

€ 0.25 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

Profit after tax

Number of shares in issue

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

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.



Undergraduate Diploma in
Business Administration

Group Work



TESCO

Serving shoppers
a little better every day.

Annual Report and Financial Statements 2013



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** <small>Group sales Year: 2013 vs. Year 2012/14: 2.1% down</small>	£55.9bn** <small>Group turnover Year: 2013 vs. Year 2012/14: 2.2% down</small>	£1.280m** <small>Group operating profit before taxation & finance Year: 2013 vs. 2012/14</small>	£1.017m** <small>Operating profit Year: 2013 vs. 2012/14</small>
£145m** <small>Operating profit before tax Year: 2013 vs. 2012/14</small>	7.90p** <small>Operating profit per share before taxation & finance Year: 2013 vs. 2012/14</small>	0.81p** <small>Operating profit per share Year: 2013 vs. 2012/14</small>	£(3.7)bn** <small>Net assets Year: 2013 vs. 2012/14</small>
6,809** <small>Stores across the world Year: 2013 vs. 2012/14</small>	79m** <small>Shopping trolleys per week Year: 2013 vs. 2012/14</small>	23m <small>Money returned through our Trust Scheme to our customers since we launched our first Trust Collection</small>	460,000** <small>Colleagues at work on Year: 2013 vs. 2012/14</small>

** Represents a continuing operations measure
* Includes the contribution of Tesco Bank
© Tesco PLC 2013

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^{Δ (a)}

Group sales
less: VAT, exc. fuel^(b)
(2015/16: £47.9bn)

£55.9bn^(a)

Statutory revenue
less: VAT, inc. fuel^(b)
(2015/16: £53.9bn)

£1,280m^{Δ (a)}

Group operating profit
before exceptional items
(2015/16: £985m)

£1,017m^(a)

Operating profit
(2015/16: £1,072m)

£145m^(a)

Statutory profit before tax
(2015/16: £202m)

7.90p^{Δ (a)}

Diluted earnings per share
before exceptional items
and net pension finance costs
(2015/16: 5.61p)

0.81p^(a)

Statutory diluted EPS
(2015/16: 3.22p)

£(3.7)bn^{Δ (a)}

Net debt
(2015/16: £15.1bn)

6,809^{(a)(c)}

Shops around the world
(2015/16: 6,733)

79m^(a)

Shopping trips per week
(2015/16: 78m)

23m

Meals donated through our food
surplus redistribution work and
Neighbourhood Food Collection

460,000^(a)

Colleagues at year end
(2015/16: 471,000)

- ^(a) Reported on a continuing operations basis
- ^(b) Excludes the net debt of Tesco Bank
- ^(c) Includes franchise stores

Δ Alternative Performance Measures

Measures with this symbol Δ are defined in the Alternative Performance Measures section of the Annual Report on pages 170 to 172.



Groups

1	2	3	4
Anushree Dhunghel	Gurbhag Singh	Marina Selivanova	Bimash Pariyar
Gaganjot Singh	Manjot Singh	Muhammad Moaz	Rina Karki
Lokesh Rana	Manpreet Khaur	Varinder Singh	Rohit Kumar
Panth Piya Singh	Nitish Singh	Mahimaben Bhupendrabhai Parmar	Sajan Rai
Vipin Yadav	Sahil		Sukraman Lama

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



Group Work



TESCO 2017 Ratios - Solutions

- Return on equity (ROI)

Net Profit for the year		X 100
Capital		
-	54	X 100
	6,414	

- 0.84 %



TESCO 2017 Ratios - Solutions

- Return on capital employed (ROCE)

Operating Profit for the year	X 100
Equity + Non-Current Liabilities	

1,017	X 100
6,414 + 20,034	

3.84 %



TESCO 2017 Ratios - Solutions

- Gross profit margin (GPM)

Gross Profit	X 100
Sales Revenue	
2,902	X 100
55,917	

5.19 %



TESCO 2017 Ratios - Solutions

- Current Ratio

CURRENT ASSETS
CURRENT LIABILITIES

15,073
19,234

0.79 : 1



TESCO 2017 Ratios - Solutions

- Quick Ratio (Acid test)

CURRENT ASSETS - INVENTORIES

CURRENT LIABILITIES

15,073 - 2,301

19,234

0.68 : 1



TESCO 2017 Ratios - Solutions

- Gearing ratio

Non-Current Liabilities	X 100
Share Capital + Reserves + Non-Current Liabilities	

20,034	X 100
6414 + 20034	

75.75 %



TESCO 2017 Ratios - Solutions

- Interest cover

Operating Profit before Interest

Interest Payable

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 = $\frac{(\pounds 54\text{m})}{\pounds 0}$ = N/A

• Earnings per share = $\frac{-\pounds 54\text{m}}{8,174,932,553}$ = -0.66p

• Price earnings ratio = $\frac{188.99 \text{ p}}{-0.66\text{p}}$ = -286.35



Undergraduate Diploma in
Business Administration

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



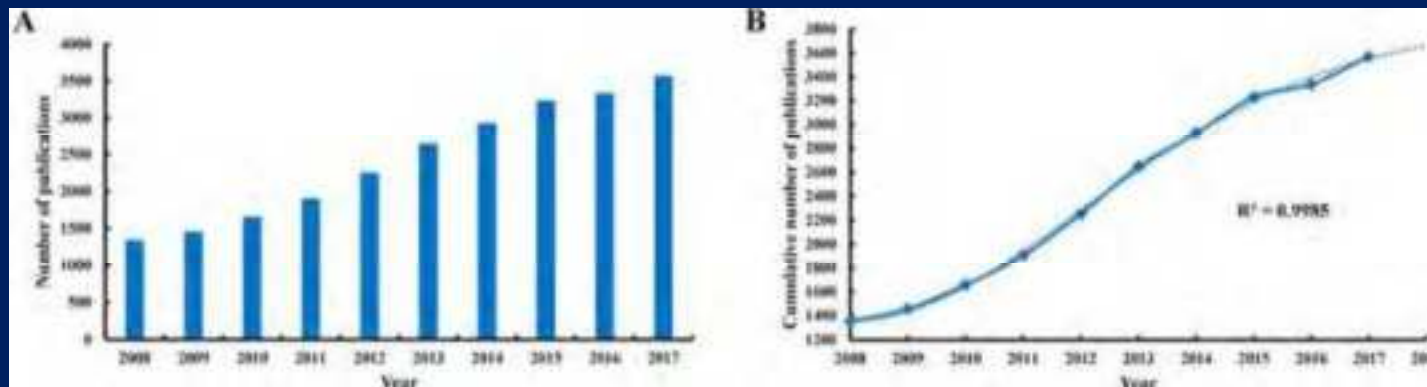
Undergraduate Diploma in Business Administration

NAXXAR RETAIL COMPANY LIMITED		
INCOME STATEMENT		
FOR THE YEAR ENDED 31 DECEMBER 2022		
	€	%
<u>REVENUE</u>		
Sales - Clothing & Accessories	55,400	68%
Sales - Shoes	26,645	32%
TOTAL REVENUE	82,045	100%
<u>COST OF SALES</u>		
Opening Stock	24,330	
Purchases - Foreign	14,420	
Purchases - Local	16,550	
Closing Stock	- 19,445	
<u>COST OF GOODS SOLD</u>	35,855	44%
<u>GROSS PROFIT</u>	46,190	56%
<u>EXPENSES</u>		
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%
<u>TOTAL EXPENSES</u>	19,218	23%
<u>NET PROFIT / (LOSS)</u>	26,972	33%



Horizontal Analysis

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



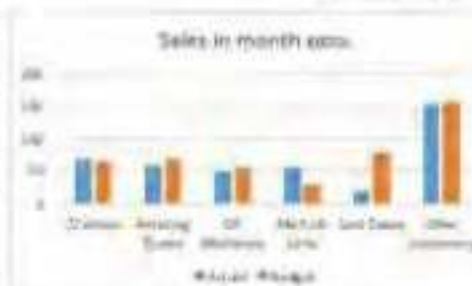
The Story behind the Numbers

- 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

ABC MANUFACTURE PROFIT AND LOSS ACCOUNT				AUGUST 2016			
	Month			Year to date			Last year
	Actual £000s	Budget £000s	Variance £000s	Actual £000s	Budget £000s	Variance £000s	
Sales							
Retailer	310	321	(11)	3,021	3,225	(204)	2,350
Wholesaler	105	136	(31)	1,320	1,375	(55)	1,250
	415	457	(42)	4,341	4,600	(259)	4,100
Gross margin							
Retailer	145	158	(13)	1,225	1,352	(127)	1,150
Wholesaler	42	53	(11)	430	591	(161)	520
	187	197	(10)	1,655	1,943	(288)	1,670
Gross margin %							
Retailer	47%	49%	(2%)	40%	42%	(2%)	49%
Wholesaler	40%	40%	0%	40%	43%	(3%)	42%
Distribution costs	(12)	(14)	2	(152)	(140)	(12)	(130)
Contributions	175	183	(8)	1,777	1,803	(26)	1,540
Overheads							
Production	(30)	(33)	3	(102)	(99)	(3)	(95)
Sales & marketing	(11)	(5)	(6)	(102)	(114)	12	(110)
Administration	(28)	(23)	(5)	(56)	(104)	(48)	(100)
Total overheads	(69)	(61)	(8)	(300)	(317)	(17)	(305)
Operating profit/(loss)	106	122	(16)	1,440	1,486	(46)	1,225
Interest	(18.0)	(13.8)	(4.2)	(25.5)	(13.8)	(11.7)	-
Profit/(loss) before tax	90	108	(18)	1,422	1,472	(50)	1,225
Taxation	(18)	(21.6)	3.6	(284.4)	(294.5)	10.1	(245.0)
Profit/(loss) after tax	72.0	86.6	(14.6)	1,137.6	1,177.8	(40.2)	980.0





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 of 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
 - Colateral
-
- 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

