

Undergraduate Diploma in Business Administration

Module 03 Financial Analysis MQF Level 5 (8 ECTS)

Lecture 7

Phase 3: Financial Analysis and Interpretations



Lecturer: Christabel Debono

Date: 2nd May 2026

**Undergraduate Diploma in
Business Administration**

1

Explain the purpose and limitations of ratio analysis

2

Calculate the principal profitability, liquidity, efficiency and solvency ratios

3

Interpret each ratio meaningfully — beyond the number to what it tells us

4

Apply benchmarks and trend analysis to assess financial health

5

Identify five factors that distort cash-flow & ratio analysis

6

Perform a full ratio analysis on a real Annual Report





Ratio Analysis Fundamentals

What is Ratio Analysis?

Turning numbers into information

A ratio expresses the relationship between two figures from the financial statements as a single number.

An absolute figure means little:

“Profit of €450,000” — is that good?

Compared to revenue of €5m, it becomes **9% net margin** — a number we can compare across years and against competitors.



Three Questions

1. Compared to what?

Prior year, competitor, industry

2. Improving or deteriorating?

Trend matters more than level

3. What's the business reason?

Always link back to operations

Who Uses Ratios — and Why?

Different users, different questions



Investors

What return am I earning?

ROE · ROCE · EPS · P/E



Lenders

Will I get paid back?

Gearing · Interest cover · Current ratio



Suppliers

Will my invoices be paid?

Quick ratio · Payables days



Employees

Is my job secure?

Profitability · Solvency



Management

How is the business performing?

All of the above

The Four Families of Ratios

Every ratio you'll ever calculate fits one of these four boxes



PROFITABILITY

Is the business making enough money?



LIQUIDITY

Can it pay its bills next month?



EFFICIENCY

Is it using resources productively?

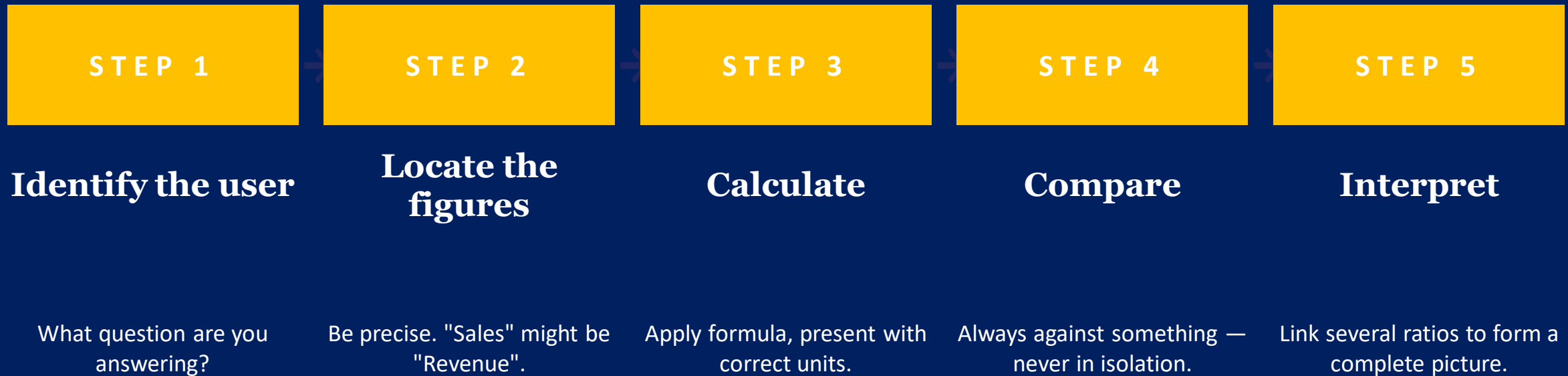


SOLVENCY

Will it survive the long term?

A Disciplined 5-Step Framework

Apply this to every ratio analysis you ever produce



Where the Numbers Come From

Three primary statements, three sets of figures



INCOME STATEMENT

Revenue · Cost of Sales · Gross Profit ·
Operating Profit · Finance Costs · PBT
· PAT



BALANCE SHEET

Non-current assets · Inventory ·
Receivables · Cash · Payables ·
Borrowings · Equity



CASH FLOW STATEMENT

Operating cash flow used in cash-
based liquidity ratios and coverage
ratios



When mixing income-statement and balance-sheet figures (e.g. ROCE), use the AVERAGE balance-sheet figure: $(\text{Opening} + \text{Closing}) \div 2$



Ratios Formulas

Formula Reference Card

GP Margin	$\text{Gross Profit} \div \text{Revenue} \times 100\%$	Inventory Turnover	$\text{COS} \div \text{Avg Inventory}$
OP Margin	$\text{Op. Profit} \div \text{Revenue} \times 100\%$	Inventory Days	$\text{Avg Inv} \div \text{COS} \times 365$
Net Margin	$\text{PAT} \div \text{Revenue} \times 100\%$	Receivables Period	$\text{Receivables} \div \text{Sales} \times 365$
ROCE / RONA	$\text{Op. Profit} \div \text{Capital Employed} \times 100\%$	Payables Period	$\text{Payables} \div \text{Purchases} \times 365$
ROE	$\text{PAT} \div \text{Average Equity} \times 100\%$	Cash Cycle	$\text{Inv} + \text{Recv} - \text{Pay days}$
ROTA	$\text{Op. Profit} \div \text{Avg Total Assets} \times 100\%$	Asset Turnover	$\text{Revenue} \div \text{Capital Employed}$
Current Ratio	$\text{Current Assets} \div \text{Current Liab}$	NCA to Sales	$\text{Non-current Assets} \div \text{Revenue}$
Quick Ratio	$(\text{CA} - \text{Inv}) \div \text{Current Liab}$	Gearing (D/E)	$\text{LT Debt} \div \text{Equity} \times 100\%$
		Interest Cover	$\text{Op. Profit} \div \text{Finance Costs}$



Profitability & Liquidity

Profitability — At Five Levels

Each level tells you about a different part of the business

GP%	Gross Margin	→ <i>Pricing power & production efficiency</i>
OP%	Operating Margin	→ <i>Performance after overheads</i>
NP%	Net Margin	→ <i>What's left for shareholders</i>
ROCE	Return on Capital	→ <i>Productivity of long-term funding</i>
ROE	Return on Equity	→ <i>Return earned for shareholders</i>

Gross Profit Margin

The cleanest measure of pricing power & production efficiency

GROSS PROFIT MARGIN

$$\text{Gross Profit} \div \text{Revenue} \times 100\%$$

Why it matters

Shows the % of every euro of sales left after direct costs. Free of overhead distortions — purely about pricing & production.

How to read it

Industry-dependent: supermarkets ~20%, software 80%+. **Always watch the trend.**

BETA TRADING — WORKED EXAMPLE

Revenue: €2,000,000

Cost of Sales: €1,300,000

Gross Profit: €700,000

$$\text{GP}\% = 700 \div 2,000 = \mathbf{35.0\%}$$

Gross Profit Margin

BETA TRADING — WORKED EXAMPLE

Revenue: €2,000,000

Cost of Sales: €1,300,000

Gross Profit: €700,000

$$\text{GP\%} = 700 \div 2,000 = 35.0\%$$

Operating & Net Profit Margins

After overheads, then after interest and tax

OPERATING PROFIT MARGIN

$$\text{Op. Profit} \div \text{Revenue} \times 100\%$$

Operating margin

Captures core trading profitability.

Strips out interest & tax for fair cross-company comparison.

If GP% is steady but OP% is falling, cost creep in overheads.

Operating & Net Profit Margins

After overheads, then after interest and tax

NET PROFIT MARGIN

$$\text{PAT} \div \text{Revenue} \times 100\%$$

Net margin

Bottom line: % of every euro of sales that ends up as distributable profit.

Gap between OP% and NP% = interest + tax.

BETA TRADING: Op. profit €270k → OP% = 13.5% | PAT €189k → NP% = 9.5%

ROCE — The Primary Ratio

Where the income statement meets the balance sheet

RETURN ON CAPITAL EMPLOYED

$$\text{Operating Profit} \div \text{Capital Employed} \times 100\%$$

Capital Employed = Equity + Non-current Liabilities (use AVERAGE)

Why we use it

Apex of profitability analysis.
Single % capturing how
productively the business uses
long-term funding.

Why it matters

Closest accounting equivalent
to investor return. Below cost
of capital = destroying value.

How to read it

ROCE = Operating Margin ×
Asset Turnover. High margins
(premium) or high volume —
both work.

ROCE — Worked Example

Beta Trading Ltd

THE NUMBERS

Operating Profit

€270,000

Equity (closing / opening)

€900,000 / €820,000

NCL (closing / opening)

€600,000 / €580,000

THE CALCULATION

Closing CE = 900 + 600 = €1,500k

Opening CE = 820 + 580 = €1,400k

Average CE = €1,450k

$\text{ROCE} = 270 \div 1,450 \times 100$

18.6%

Cost of capital ~10% → creating value

Return on Equity (ROE)

The return shareholders earn on their money

RETURN ON EQUITY

$$\text{Profit After Tax} \div \text{Average Shareholders' Equity} \times 100\%$$



Why ROE > ROCE in geared businesses

Debt magnifies returns when the business earns more than it pays in interest.

Shareholders capture the difference.



...but high ROE from high gearing = risk

A small drop in profits wipes out shareholder returns. Always read ROE alongside the gearing ratio.

Class Exercise — Gamma plc

EXTRACTS FROM ACCOUNTS (€)

Revenue:	4,800,000
Cost of Sales:	(3,120,000)
Operating expenses:	(960,000)
Finance costs:	(90,000)
Tax:	(157,500)
Equity (open / close):	1,800k / 2,050k
NCL (open / close):	1,000k / 1,150k

REQUIRED — CALCULATE

- (a) Gross profit margin
- (b) Operating profit margin
- (c) Net profit margin
- (d) ROCE (using average CE)
- (e) ROE (using average equity)
- (f) Comment on overall profitability picture*

Liquidity — Three Layers of Strictness

From broadest test to acid test

CURRENT RATIO

$$CA \div CL$$

All current assets

Broadest

QUICK RATIO

$$(CA - Inv) \div CL$$

Excludes slow-moving inventory

Stricter

CASH RATIO

$$\text{Cash} \div CL$$

Cash & equivalents only

Strictest

Current Ratio

Broadest measure of short-term liquidity

CURRENT RATIO

$$\text{Current Assets} \div \text{Current Liabilities}$$

Below 1.0

CA cannot cover CL — short-term distress likely. Watch for overdraft growth.

1.5 – 2.0

Traditional 'healthy' range. Industry-dependent.

Above 3.0

May signal idle cash, excess inventory or sluggish receivables. Inefficient.

INDUSTRY MATTERS: Supermarkets routinely run below 1.0 (cash from customers, 60-day terms with suppliers). Manufacturers typically need 1.5+.

Quick Ratio — The Acid Test

What if you couldn't sell another item from stock?

QUICK RATIO (ACID TEST)

$$(\text{Current Assets} - \text{Inventory}) \div \text{Current Liabilities}$$

Why strip inventory?

Inventory is the slowest current asset to convert to cash. To turn stock into cash you must:

1. Sell it (often on credit)
2. Wait 30–60+ days for the customer to pay

DELTA MANUFACTURING

Current ratio: **1.67** *'looks fine'*

Strip inventory of €280k:

Quick ratio: **1.04**

Much tighter than the headline. Heavy reliance on inventory turning to cash.

Class Exercise — Epsilon Ltd

Liquidity of Epsilon Ltd

EPSILON BALANCE SHEET (€)

Inventory:	520,000
Trade receivables:	380,000
Prepayments:	30,000
Cash:	40,000
Trade payables:	340,000
Bank overdraft:	180,000
Accruals:	60,000
Tax payable:	70,000

REQUIRED

- (a) Current ratio
- (b) Quick ratio
- (c) Cash ratio

(d) Comment on Epsilon's overall liquidity position

Unde



**Undergraduate Diploma in
Business Administration**



Efficiency & Solvency

The Cash Operating Cycle

How long is cash tied up between paying suppliers and collecting from customers?

CASH OPERATING CYCLE

$$\text{Inventory Days} + \text{Receivables Days} - \text{Payables Days}$$

INVENTORY +

Days held

RECEIVABLES +

Collection period

PAYABLES -

Payment period

Shorter cycle = cash returns faster = less working-capital financing needed

Inventory Turnover & Inventory Days

How fast does stock move through the business?

INVENTORY TURNOVER

$$\text{COS} \div \text{Avg Inventory}$$

INVENTORY DAYS

$$\text{Avg Inv} \div \text{COS} \times 365$$

Industry benchmarks vary hugely:

180+

Jewellery retailer (days)

60

Manufacturer (days)

12–15

Supermarket (days)



RED FLAG: lengthening days while sales are flat → demand falling, overstocked, or obsolescence risk

Collection Period & Payment Period

How fast you collect — how slowly you pay

RECEIVABLES COLLECTION PERIOD

$$\text{Receivables} \div \text{Sales} \times 365$$

PAYABLES PAYMENT PERIOD

$$\text{Payables} \div \text{Purchases} \times 365$$

FASTER IS BETTER

Compare to your stated credit terms.

If terms are 'net 30' but you collect in 65 days, customers are taking >2× as long.

Rising trend = weak credit control or customers in distress.

SLOWER... BUT WITHIN TERMS

Suppliers = free short-term finance.

Stretching = strength (bargaining power) OR weakness (can't pay).

Beyond agreed terms → late-payment interest, broken supplier trust.

Asset Turnover

How ROCE is built up

ASSET TURNOVER

Revenue ÷ Capital Employed

$$\text{ROCE} = \text{Operating Margin} \times \text{Asset Turnover}$$

PREMIUM STRATEGY: high margins, low volume

VOLUME STRATEGY: low margins, high turnover

Non-current Assets to Sales

How asset-heavy is the business model?

NON-CURRENT ASSETS TO SALES

Non-current Assets ÷ Revenue (or × 100%)

Inverse of fixed-asset turnover. Measures capital intensity.

5–15%

Service / software

30–60%

Manufacturing / retail

100%+

Utilities · telecoms · airlines

Watch for sudden jumps (recent capex) or creeping rises (assets becoming under-productive)

Return on Total Assets (ROTA)

Productivity of the entire asset base

RETURN ON TOTAL ASSETS

$$\text{Operating Profit (PBIT)} \div \text{Average Total Assets} \times 100\%$$

ROCE

Op. Profit $\div$ Capital Employed

Excludes current liabilities.

Easier to flatter via working-capital tricks.

ROTA

Op. Profit $\div$ Total Assets

Includes the FULL asset base.

Harder to manipulate — cleaner measure of operational productivity.

Class Exercise — Theta Ltd



THETA LTD — KEY FIGURES (€)

Revenue (credit):	5,000,000
Cost of sales:	3,500,000
Operating profit:	420,000
Inv (open / close):	280k / 340k
Trade receivables:	750,000
Trade payables:	490,000
Non-current assets:	1,800,000
Total assets (avg):	3,050,000

REQUIRED

- (a) Inventory turnover & days
- (b) Receivables collection period
- (c) Payables payment period
- (d) Cash operating cycle
- (e) Asset turnover (CE = €2.5m)
- (f) Non-current assets to sales
- (g) ROTA
- (h) *Comment*

Solvency — The Survival Question

Balance of debt vs equity, and ability to service that debt

Liquidity asks: "Can I pay this month?"

Solvency asks: "Will I survive the next decade?"



Why some debt is good

- Cheaper than equity
- Interest is tax-deductible
- Magnifies shareholder returns



Why too much debt kills

- Interest must be paid in loss years
- Rate rises hit profits hard
- Refinancing risk at maturity

Gearing Ratio — Debt vs Equity

Two formulas, both widely used — pick one and stay consistent

DEBT-TO-EQUITY

$$\text{LT Debt} \div \text{Equity} \times 100\%$$

DEBT-TO-CAPITAL

$$\text{LT Debt} \div (\text{LT Debt} + \text{Equity}) \times 100\%$$

There is no single "right" gearing level — it depends on the industry:

Tech / start-ups



0–25%

Cyclicals (mining, airlines)



low

Manufacturing



moderate

Utilities, real estate



100–200%

Interest Cover

Can the business actually afford its debt?

INTEREST COVER

Operating Profit (PBIT) ÷ Finance Costs (× times)

<2×

Risky

Small profit drop = trouble

3–5×

Comfortable

Most healthy businesses

>10×

Very safe

Very low debt risk

Class Exercise — Solvency Comparison



Class Exercise — Solvency Comparison

Kappa vs Lambda · Same industry, different finance · 15 minutes

	KAPPA	LAMBDA
Equity	€5,000,000	€2,000,000
Long-term loans	€1,500,000	€5,500,000
Operating profit	€900,000	€900,000
Finance costs	€100,000	€440,000

REQUIRED

- (a) Gearing for each
- (b) Interest cover for each
- (c) Which is riskier? Justify.

*(d) If profit falls 50%,
recalculate interest cover.
Comment.*



Practical Workshop

Mediterra Foods — Income Statement

Year ended 31 December 20X5 (€'000)

	2025	2024
Revenue	12,400	11,200
Cost of sales	(8,060)	(7,000)
Gross profit	4,340	4,200
Distribution costs	(1,240)	(1,120)
Administrative expenses	(1,310)	(1,180)
Operating profit	1,790	1,900
Finance costs	(290)	(250)
Profit before tax	1,500	1,650
Tax expense	(450)	(495)
Profit for the year	1,050	1,155

Mediterra Foods plc — Balance Sheet

As at 31 December 20X5 (€'000)

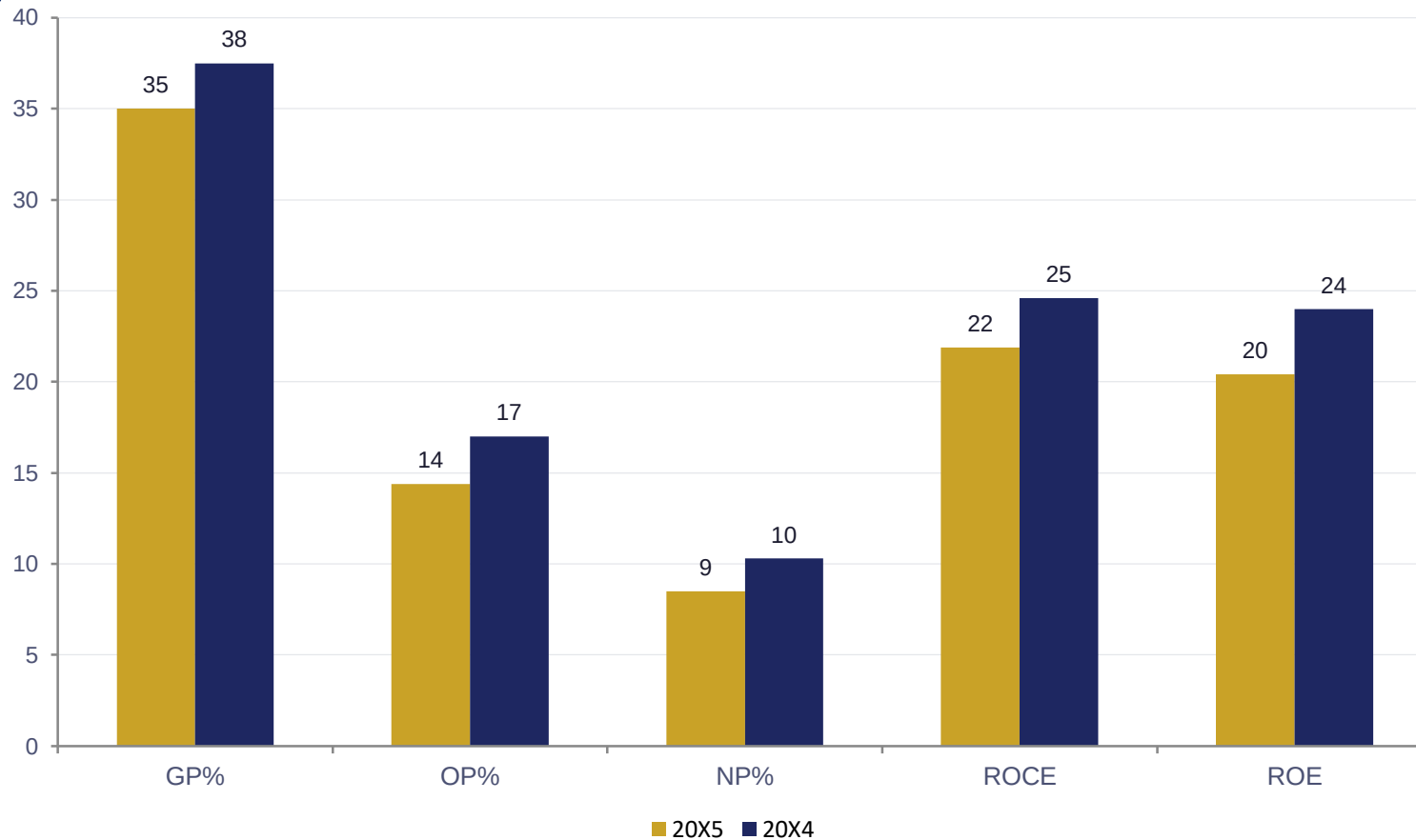
	20X5	20X4
Total non-current assets	7,200	6,620
Inventory	1,610	1,260
Trade receivables	1,870	1,470
Cash	180	450
TOTAL ASSETS	10,860	9,800
Total equity	5,460	4,810
Long-term loans	3,200	2,900
Trade payables	1,420	1,250
Bank overdraft	330	250
Tax payable	450	590

Mediterra Foods plc

Lets Work them out

Mediterra — Profitability

20X5 vs 20X4 · the trend is wrong



THE STORY

Revenue +10.7%

But ALL margins fell:

GP%: 37.5 → 35.0

OP%: 17.0 → 14.4

NP%: 10.3 → 8.5

ROCE: 24.6 → 21.9

ROE: 24.0 → 20.4

Growth-at-cost-of-margin pattern.

Mediterra — Liquidity

Headline ratio LOOKS better — but the truth is hidden underneath

CURRENT

1.66

20X4: 1.52



looks better...

QUICK

0.93

20X4: 0.92

barely moved

CASH

0.08

20X4: 0.22



alarming drop

Mediterra — Working Capital

Cycle has lengthened by 16 days · ~€540k of cash absorbed

65

days

INVENTORY

prior year: —

55

days

RECEIVABLES

prior year: 48

64

days

PAYABLES

prior year: 65

CYCLE

56

days



OVERTRADING WARNING

16 extra days × €34k/day ≈ €540k of cash absorbed by working capital — explains the cash collapse and overdraft growth.

Mediterra — Overall Verdict

Growing but deteriorating · direction of travel is wrong

PROFITABILITY

Down

All margins fell. Net profit down despite higher sales.

LIQUIDITY

Hidden risk

Headline up; cash & quick ratios deteriorating.

EFFICIENCY

Worsening

Cycle +16 days. Receivables stretching. Inventory build-up.

SOLVENCY

Still safe

Gearing moderate. Interest cover comfortable but falling.



Five Factors That Distort Ratio Analysis



Five Distortion Factors

Why ratios can lie

1 Accounting Policies

FIFO vs WAC, depreciation methods, capitalisation choices

2 Window Dressing

Year-end manipulation of inventory, receivables, payables

3 Inflation

Historical-cost figures distort asset values & depreciation

4 Seasonality

Year-end snapshot may be unrepresentative of the year

5 One-off Items

Disposals, restructurings, fair-value moves, acquisitions

1. Different Accounting Policies

Same transaction, different reported numbers — all legitimate under IFRS

INVENTORY VALUATION

FIFO vs Weighted Average changes COS and inventory values — particularly in inflation.

DEPRECIATION

Straight-line vs reducing-balance + useful-life choice = very different fixed-asset values.

REVENUE RECOGNITION

Long-term contracts, subscriptions, bundles — timing differs.

CAPITALISATION POLICIES

Development costs, borrowing costs — capitalised or expensed?

LEASE ACCOUNTING

IFRS 16 standardised most leases, but lease term & discount rate are still judgement.

IMPACT

GP%, ROCE, asset turnover, gearing — all distorted purely by policy choice.

2. Window Dressing

The balance sheet is a single-day snapshot — and management know it



Delay purchases

Year-end inventory artificially low



Chase receivables

Collection rate boosted; cash up



Delay paying suppliers

Trade payables reduced at cut-off



Sale-and-leaseback

Convert fixed assets to cash



Factor receivables

Boost cash, reduce days outstanding

Year-end ratios may look very different from average ratios during the year.

3. Inflation & Historical Cost

Asset values and depreciation become misleading in inflationary times



Asset values understated

Historical cost < replacement cost → ROCE flattered



Depreciation too low

Won't fund replacement → profits overstated



Gross margin flattered

Revenue at today's prices, COS at older costs



Trends deceptive

Nominal growth may hide real-terms decline

4. Seasonality & Year-End Timing

When you take the snapshot matters as much as what's in it

RETAILER • January Year-End

- Inventory: **low** (post-Christmas)
- Cash: **high** (festive sales)
- Current ratio: **looks great**

...even if the same business struggles for cash in October.

RETAILER • August Year-End

- Inventory: **high** (pre-Christmas build-up)
- Cash: **low** (working capital absorbed)
- Current ratio: **looks weak**

...same business, same year, totally different picture.

5. One-off Items

Profit can be flattered or depressed by items unrelated to operations

Disposal gains/losses

Sale of assets or businesses

Restructuring charges

Redundancy, impairments, write-downs

Insurance & litigation

Recoveries or settlements

Fair-value movements

Investments, financial instruments

Acquisitions / disposals

Part-year results, changing scope

FX gains and losses

Multi-currency operations

Companies present "adjusted" profits to strip these out — but adjustments are at management's discretion.

Un



**Undergraduate Diploma in
Business Administration**