

# Chapter 8

## Basic Ratio Analysis

### Functions of accounting ratios

- Accounting ratios are usually used to **evaluate** the financial performance and position of a business.
- They are also useful in making **comparison** between different **periods** or different **firms**.
- Accounting ratios can state meaningful **relationships** between different figures in financial statements.
- Accounting ratios can be used to evaluate many different aspects of a business, in particular **liquidity** and **profitability**.

Liquidity ratios	Profitability ratios
Measure the ability to pay <b>short-term liabilities</b> when due	Measure the ability to make <b>profits</b>
1. Current ratio 2. Quick ratio	1. Gross profit ratio 2. Net profit ratio 3. Return on capital employed

### Liquidity ratios

#### 1. Current ratio (working capital ratio)

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}} : 1$$

- The **current ratio** indicates the **liquidity** of a business.
- It measures the size of **current assets** relative to **current liabilities**.
- The higher the ratio, the **more** liquid the business is.
  - The business is more likely to be able to pay its **short-term** liabilities when due.
- A current ratio of **2 : 1** is generally regarded as acceptable.
- If the current ratio is too low, the business may have difficulty meeting its **short-term obligations**.
- If the current ratio is excessively high, too many current assets may be lying **idle**.
  - These current assets are not being **efficiently** used to generate revenues and profits for the business.

#### Exhibit 8.2

Famous Handbag Boutique Statements of Financial Position as at 31 December (extract)			
	2013 \$	2012 \$	
Current assets			
Inventory	15,000	30,000	
Accounts receivable	35,000	45,000	
Bank	10,000	15,000	
	<b>60,000</b>	<b>90,000</b>	
Less Current liabilities	<b>30,000</b>	<b>30,000</b>	
Net current assets	<b>30,000</b>	<b>60,000</b>	
Famous Handbag Boutique's current ratios for 2012 and 2013:			
	2012	2013	
	$\frac{\$90,000}{\$30,000} : 1 = 3 : 1$	$\frac{\$60,000}{\$30,000} : 1 = 2 : 1$	

# 第 8 章

## 基本比率分析

### 會計比率的功用

- 為了能準確地**評估**企業的財務表現和狀況，我們會使用會計比率作為評估標準。
- 會計比率也令我們能夠**比較**同一企業在不同**年度**的表現，以及比較不同**企業**之間的業績。
- 會計比率可用以表達財務報表上不同數字之間的**關係**。
- 會計比率可用來評估企業在各方面的表現，特別是**變現能力**和**盈利能力**。

變現能力比率	盈利能力比率
評估企業償還 <b>短期負債</b> 的能力	評估企業賺取 <b>利潤</b> 的能力
1. 流動比率 2. 速動比率	1. 毛利率 2. 淨利率 3. 運用資金報酬率

### 變現能力比率

#### 1. 流動比率 (營運資金比率)

$$\text{流動比率} = \frac{\text{流動資產}}{\text{流動負債}} : 1$$

- **流動比率**反映企業的**變現能力**。
- 這個比率量度**流動資產**相對**流動負債**的比例。
- 流動比率越高，反映企業的變現能力**越強**。
  - 企業的償還**短期負債**的能力越高
- 一般來說，流動比率有 **2 : 1** 的話，便算達到可接受的水平。
- 如果企業的流動比率太低，即反映它在償還**短期債務**時可能出現困難。
- 不過，這個比率也不宜太高，因為流動比率過高表示企業持有**過剩**的流動資產。
  - 反映企業沒有**善用**流動資產來賺取收益和利潤。

#### 示例 8.2

財務狀況表 (摘錄)  
於 12 月 31 日

	2013 年 \$	2012 年 \$
流動資產		
存貨	15,000	30,000
應收帳款	35,000	45,000
銀行存款	10,000	15,000
	<b>60,000</b>	<b>90,000</b>
減 流動負債	<b>30,000</b>	<b>30,000</b>
流動資產淨值	<b>30,000</b>	<b>60,000</b>

2012 和 2013 年度的流動比率計算如下：

2012 年	2013 年
$\frac{\$90,000}{\$30,000} : 1 = 3 : 1$	$\frac{\$60,000}{\$30,000} : 1 = 2 : 1$

- The current ratio **fell** in 2013 but the level is still acceptable.
- However, if this ratio continues to fall, the firm may have difficulty paying its short-term liabilities when due.

## 2. Quick ratio (liquid ratio or acid test ratio)

$$\text{Quick ratio} = \frac{\text{Current assets} - \text{Inventory}}{\text{Current liabilities}} : 1$$

- The **quick ratio** indicates the liquidity of a business without considering **inventory**.
- It takes into account only cash and other current assets that can be quickly converted into **cash**, such as bank balances and accounts receivable.
- Inventory, which is usually considered **less** liquid, is excluded from the calculation.
- The higher the ratio, the **more** liquid the business is.
- Compared to the current ratio, the quick ratio is a **stricter** measure of liquidity because it includes only current assets which are very liquid.
- In general, a quick ratio of **1 : 1** is regarded as acceptable.

### Exhibit 8.3

Famous Handbag Boutique  
Statements of Financial Position as at 31 December (extract)

	2013 \$	2012 \$
Current assets		
Inventory	15,000	30,000
Accounts receivable	35,000	45,000
Bank	10,000	15,000
	60,000	90,000
Less Current liabilities	30,000	30,000
Net current assets	30,000	60,000

Famous Handbag Boutique's quick ratios for 2012 and 2013:

2012	2013
$\frac{\$90,000 - \$30,000}{\$30,000} : 1 = 2 : 1$	$\frac{\$60,000 - \$15,000}{\$30,000} : 1 = 1.5 : 1$

- The quick ratio **fell** in 2013 but the level is still acceptable.
- However, if this ratio continues to fall, the firm may have difficulty paying its short-term liabilities when due.

- 雖然企業 2013 年度的流動比率**下跌**，但仍屬可接受水平。
- 不過，如果這個比率繼續下跌的話，企業在償還短期負債時便可能出現困難。

## 2. 速動比率 (酸性測驗比率)

$$\text{速動比率} = \frac{\text{流動資產} - \text{存貨}}{\text{流動負債}} : 1$$

- **速動比率**反映企業在扣除**存貨**後的變現能力。
- 這個比率只計算**現金**和其他變現能力較高的流動資產，例如銀行存款餘額和應收帳款。
- 存貨一般被視為變現能力**較低**的資產，所以不納入計算之列。
- 速動比率**越高**，反映企業的變現能力越強。
- 由於速動比率只計算變現能力很高的流動資產，因此與流動比率相比，速動比率是量度變現能力較**嚴格**的標準。
- 一般來說，速動比率達到 **1 : 1** 的水平。

### 示例 8.3

花美手袋專門店  
財務狀況表 (摘錄)  
於 12 月 31 日

	2013 年 \$	2012 年 \$
流動資產		
存貨	15,000	30,000
應收帳款	35,000	45,000
銀行存款	10,000	15,000
	60,000	90,000
減 流動負債	30,000	30,000
流動資產淨值	30,000	60,000

2012 和 2013 年度的速動比率計算如下：

2012 年	2013 年
$\frac{\$90,000 - \$30,000}{\$30,000} : 1 = 2 : 1$	$\frac{\$60,000 - \$15,000}{\$30,000} : 1 = 1.5 : 1$

- 企業 2013 年度的速動比率**下跌**，但仍屬可接受水平。
- 不過，如果這個比率繼續下跌的話，企業在償還短期負債時便可能出現困難。

## Profitability ratios

### 1. Gross profit ratio (gross profit margin or margin)

$$\text{Gross profit ratio} = \frac{\text{Gross profit}}{\text{Net Sales}} \times 100\%$$

- **Gross profit** = Sales – Cost of goods sold
- The **gross profit ratio** indicates the profitability of a business after deducting the **cost of goods sold**, but not **expenses**.
- It shows the gross profit for every \$100 in **sales**.
- The higher the ratio, the **more** profitable the business is.

#### Exhibit 8.4

Famous Handbag Boutique  
Income Statements for the years ended 31 December

	2013		2012	
	\$	\$	\$	\$
Sales		80,000		70,000
Less Cost of goods sold:				
Opening inventory	9,000		5,000	
Purchases	67,000		60,000	
	76,000		65,000	
Less Closing inventory	11,000	65,000	9,000	56,000
Gross profit		15,000		14,000
Less Expenses		6,200		5,600
Net profit		8,800		8,400

Famous Handbag Boutique's gross profit ratios for 2012 and 2013:

2012	2013
$\frac{\$14,000}{\$70,000} \times 100\% = 20\%$	$\frac{\$15,000}{\$80,000} \times 100\% = 18.75\%$

- The gross profit ratio **fell** even though both sales and gross profit **increased**.
- This means that gross profit increased at a **lower** rate than sales.

#### Reasons for a fall in gross profit ratio

1. The cost of goods sold increased by a **greater** percentage than sales.
2. In order to boost sales, the **selling prices** of goods were reduced.
3. There was an unfavourable change in the **sales mix**.
  - For instance, the proportion of goods sold with lower margins was **larger** than that sold with higher margins.
4. There was a greater **wastage** of goods, which increased the **cost of goods sold**.

## 盈利能力比率

### 1. 毛利率

$$\text{毛利率} = \frac{\text{毛利}}{\text{淨銷售}} \times 100\%$$

- 毛利 = 銷貨 – 銷貨成本
- **毛利率**反映企業在扣除**銷貨成本**後(但在扣除**費用**前)的盈利能力。
- 它顯示企業從每\$100的**銷貨收益**中所獲得的毛利。
- 毛利率**越高**,反映企業的盈利能力越強。

#### 示例 8.4

花美手袋專門店  
損益表  
截至 12 月 31 日止年度

	2013 年		2012 年	
	\$	\$	\$	\$
銷貨		80,000		70,000
減 銷貨成本:				
期初存貨	9,000		5,000	
購貨	67,000		60,000	
	76,000		65,000	
減 期末存貨	11,000	65,000	9,000	56,000
毛利		15,000		14,000
減 費用		6,200		5,600
淨利		8,800		8,400

2012 和 2013 年度的毛利率分別計算如下:

2012 年	2013 年
$\frac{\$14,000}{\$70,000} \times 100\% = 20\%$	$\frac{\$15,000}{\$80,000} \times 100\% = 18.75\%$

- 雖然花美手袋專門店 2013 年度的銷貨和毛利均**上升**,但毛利率卻**下跌**了。
- 這反映毛利的升幅**小於**銷貨的升幅。

#### 毛利率下跌的原因

1. 銷貨成本的升幅**大於**銷貨的升幅。
2. 企業**減價**促銷。
3. 銷售品種**結構**出現不利的轉變。
  - 例如在企業售出的貨品中,低毛利率的貨品所佔的比重比高毛利率的貨品大。
4. 貨品的**損耗**增加,令**銷貨成本**上升。



## 2. Net profit ratio (net profit margin)

$$\text{Net profit ratio} = \frac{\text{Net profit}}{\text{Net Sales}} \times 100\%$$

- **Net profit = Gross profit + Other revenues – Expenses**
- The **net profit ratio** indicates the profitability of a business after deducting all **costs** and **expenses**.
- It shows the net profit for every \$100 in **sales**.
- The higher the ratio, the **more** profitable the business is.
- Compared to the gross profit ratio, the net profit ratio gives a **more** accurate picture of profitability. This is because all costs and expenses are deducted in arriving at the **net** profit figure.

### Exhibit 8.5

Famous Handbag Boutique  
Income Statements for the years ended 31 December

	2013		2012	
	\$	\$	\$	\$
Sales		80,000		70,000
Less Cost of goods sold:				
Opening inventory	9,000		5,000	
Purchases	67,000		60,000	
	76,000		65,000	
Less Closing inventory	11,000	65,000	9,000	56,000
Gross profit		15,000		14,000
Less Expenses		6,200		5,600
Net profit		8,800		8,400

Famous Handbag Boutique's net profit ratios for 2012 and 2013:

2012	2013
$\frac{\$8,400}{\$70,000} \times 100\% = 12\%$	$\frac{\$8,800}{\$80,000} \times 100\% = 11\%$

- The net profit ratio **fell** even though both sales and net profit **increased**.
- This means that net profit increased at a **lower** rate than sales.

### Reasons for a fall in net profit ratio

1. The gross profit ratio **decreased**.
2. **Expenses** increased by a greater percentage than gross profit.
3. Poor in controlling expenses
  - For this reason, a firm should exercise tighter **control** over its expenses.

## 2. 淨利率 (純利率)

$$\text{淨利率} = \frac{\text{淨利}}{\text{淨銷貨}} \times 100\%$$

- 淨利 = 毛利 + 其他收益 – 費用
- 淨利率反映企業在扣除所有**成本**和**費用**後的盈利能力。
- 它顯示企業從每\$100的**銷貨收益**中所獲得的淨利。
- 淨利率**越高**，反映企業的盈利能力越強。
- 由於企業在計算淨利時已扣除所有成本和費用，因此**淨利率**能較準確地反映企業的盈利能力。

### 示例 8.5

花美手袋專門店  
損益表  
截至 12 月 31 日止年度

	2013 年		2012 年	
	\$	\$	\$	\$
銷貨		80,000		70,000
減 銷貨成本：				
期初存貨	9,000		5,000	
購貨	67,000		60,000	
	76,000		65,000	
減 期末存貨	11,000	65,000	9,000	56,000
毛利		15,000		14,000
減 費用		6,200		5,600
淨利		8,800		8,400

2012 和 2013 年度的淨利率分別計算如下：

2012 年	2013 年
$\frac{\$8,400}{\$70,000} \times 100\% = 12\%$	$\frac{\$8,800}{\$80,000} \times 100\% = 11\%$

- 雖然花美手袋專門店的銷貨和淨利均**上升**，但淨利率卻**下跌**了。
- 這反映淨利的升幅**小於**銷貨的升幅。

### 淨利率下跌的原因

1. 毛利率**下跌**。
2. **費用**的升幅大於毛利的升幅。
3. 控制費用很差
  - 針對這個原因，企業應加強**控制**費用。

### 3. Return on capital employed

$$\text{ROCE} = \frac{\text{Net profit}}{\text{Average capital employed}} \times 100\%$$

- The year-end capital balance is used in the calculation of the ROCE only if the opening capital balance is not given.
- The return on capital employed (ROCE) indicates the profitability of investing **capital** in a business.
- It shows the net profit for every \$100 of **capital employed**.
- The higher the ratio, the **more** profitable the owner's investment is.
- For sole proprietorships, capital employed means the **capital** balance, which is the **average** of the opening and closing balances of the capital account for the period.

#### Exhibit 8.6

Famous Handbag Boutique  
Statements of Financial Position as at 31 December (extract)

	2013	2012
	\$	\$
Net assets	105,000	100,000
Capital		
Opening balance	100,000	95,000
Add Net profit for the year	8,800	8,400
	108,800	103,400
Less Drawings	3,800	3,400
	105,000	100,000

The rates of return on capital employed for 2012 and 2013 are:

2012	2013
$\frac{\$8,400}{(\$95,000 + \$100,000) \div 2} \times 100\%$	$\frac{\$8,800}{(\$100,000 + \$105,000) \div 2} \times 100\%$
= 8.62%	= 8.59%

- The return on capital employed **dropped** even though net profit **increased**.
- This means that net profit increased by a **smaller** percentage than capital employed.
- The owner's investment was **less** profitable.

### 3. 運用資金報酬率 (動用資金報酬率)

$$\text{運用資金報酬率} = \frac{\text{淨利}}{\text{平均運用資金}} \times 100\%$$

- 如果題目沒有提供期初資本餘額，你應使用期末資本餘額計算。
- 運用資金報酬率反映企業**資金**的盈利能力。
- 它顯示企業每運用\$100的**資金**所獲得的淨利。
- 運用資金報酬率**越高**，反映東主投資的盈利能力越強。
- 對獨資企業來說，運用資金是**資本**帳戶的期初和期末餘額的**平均值**。

#### 示例 8.6

花美手袋專門店  
財務狀況表 (摘錄)  
於 12 月 31 日

	2013 年	2012 年
	\$	\$
淨資產	105,000	100,000
資本		
期初餘額	100,000	95,000
加 年度淨利	8,800	8,400
	108,800	103,400
減 提用	3,800	3,400
	105,000	100,000

2012 和 2013 年度的運用資金報酬率計算如下：

2012 年	2013 年
$\frac{\$8,400}{(\$95,000 + \$100,000) \div 2} \times 100\%$	$\frac{\$8,800}{(\$100,000 + \$105,000) \div 2} \times 100\%$
= 8.62%	= 8.59%

- 雖然花美手袋專門店 2013 年度的淨利**上升**，但其運用資金報酬率卻**下跌**。
- 這反映淨利的升幅**小於**動用資金的升幅。
- 換句話說，東主的投資回報**下跌**了。

## Comparison of financial results of different businesses

### Exhibit 8.6

Statements of Financial Position as at 31 March 2013 (extract)

	Edward Co \$	Frankie Co \$
<b>Current assets</b>		
Inventory	20,000	35,000
Trade receivables	25,000	18,000
Bank	15,000	7,000
	<u>60,000</u>	<u>60,000</u>
<b>Current liabilities</b>	20,000	30,000

	Edward Co	Frankie Co
<b>Current ratio</b>	$\frac{\$60,000}{\$20,000} : 1 = 3:1$	$\frac{\$60,000}{\$30,000} : 1 = 2:1$
<b>Quick ratio</b>	$\frac{\$40,000}{\$20,000} : 1 = 2:1$	$\frac{\$25,000}{\$30,000} : 1 = 0.83:1$

- When comparing the current ratios, it appears that both firms have **sufficient** liquidity.
- Edward Co's quick ratio appears to be sufficient but Frankie Co's low quick ratio of 0.83 : 1 indicates that it may have difficulty meeting its **short-term obligations**.

### Exhibit 8.7

Income Statements for the year ended 31 March 2013

	Edward Co \$	Frankie Co \$
Sales	100,000	80,000
Less Cost of goods sold	<u>60,000</u>	<u>50,000</u>
Gross profit	40,000	30,000
Less Expenses	<u>26,000</u>	<u>18,000</u>
Net profit	<u>14,000</u>	<u>12,000</u>

Statements of Financial Position as at 31 March 2013 (extract)

	Edward Co \$	Frankie Co \$
<b>Capital</b>		
Opening balance	80,000	90,000
Less Net profit for the year	<u>14,000</u>	<u>12,000</u>
	94,000	102,000
Less Drawings	<u>4,000</u>	<u>2,000</u>
	<u>90,000</u>	<u>100,000</u>

	Edward Co	Frankie Co
<b>Gross profit ratio</b>	$\frac{\$40,000}{\$100,000} \times 100\% = 40\%$	$\frac{\$30,000}{\$80,000} \times 100\% = 37.5\%$
<b>Net profit ratio</b>	$\frac{\$14,000}{\$100,000} \times 100\% = 14\%$	$\frac{\$12,000}{\$80,000} \times 100\% = 15\%$
<b>Return on capital employed</b>	$\frac{\$14,000}{(\$80,000 + \$90,000) \div 2} \times 100\% = 16.47\%$	$\frac{\$12,000}{(\$90,000 + \$100,000) \div 2} \times 100\% = 12.63\%$

## 比較不同企業的財務業績

### 示例 8.6

財務狀況表 (摘錄)  
於 2013 年 3 月 31 日

	艾氏企業 \$	霍氏企業 \$
<b>流動資產</b>		
存貨	20,000	35,000
應收貨款	25,000	18,000
銀行存款	15,000	7,000
	<u>60,000</u>	<u>60,000</u>
<b>流動負債</b>	20,000	30,000

	艾氏企業	霍氏企業
<b>流動比率</b>	$\frac{\$60,000}{\$20,000} : 1 = 3:1$	$\frac{\$60,000}{\$30,000} : 1 = 2:1$
<b>速動比率</b>	$\frac{\$40,000}{\$20,000} : 1 = 2:1$	$\frac{\$25,000}{\$30,000} : 1 = 0.83:1$

- 就流動比率來說，兩家企業都有足夠的變現能力。
- 艾氏企業的速動比率是足夠的，但霍氏企業的速動比率卻偏低，只有 0.83 : 1，顯示該企業在償還短期負債時可能出現困難。

### 示例 8.7

損益表

截至 2013 年 3 月 31 日止年度

	艾氏企業 \$	霍氏企業 \$
銷貨	100,000	80,000
減 銷貨成本	<u>60,000</u>	<u>50,000</u>
毛利	40,000	30,000
減 費用	<u>26,000</u>	<u>18,000</u>
淨利	<u>14,000</u>	<u>12,000</u>

財務狀況表 (摘錄)  
於 2013 年 3 月 31 日

	艾氏企業 \$	霍氏企業 \$
<b>資本</b>		
期初餘額	80,000	90,000
減 年度淨利	<u>14,000</u>	<u>12,000</u>
	94,000	102,000
減 提用	<u>4,000</u>	<u>2,000</u>
	<u>90,000</u>	<u>100,000</u>

	艾氏企業	霍氏企業
<b>毛利率</b>	$\frac{\$40,000}{\$100,000} \times 100\% = 40\%$	$\frac{\$30,000}{\$80,000} \times 100\% = 37.5\%$
<b>淨利率</b>	$\frac{\$14,000}{\$100,000} \times 100\% = 14\%$	$\frac{\$12,000}{\$80,000} \times 100\% = 15\%$
<b>運用資金報酬率</b>	$\frac{\$14,000}{(\$80,000 + \$90,000) \div 2} \times 100\% = 16.47\%$	$\frac{\$12,000}{(\$90,000 + \$100,000) \div 2} \times 100\% = 12.63\%$

- Edward Co has a **higher** gross profit ratio but a **lower** net profit ratio compared with Frankie Co, due to a much higher proportion of **expenses** to sales.
- Overall, Frankie Co is **more** profitable than Edward Co.
- However, Edward Co has a **higher** return on capital employed. This means Edward Co has made better use of its **capital** than Frankie Co. The owner's investment in Edward Co is **more** profitable.

### Importance of maintaining adequate profitability and liquidity

- If a firm cannot pay its **trade creditors** on time, they may reduce or even stop supplying goods to the firm.
- A firm's profitability is closely linked to its liquidity because **earnings** are ultimately reflected in **cash flows**.
  - If a firm's profitability remains low, its liquidity will eventually be adversely affected.
  - A firm that is highly profitable does not necessarily mean it has high liquidity. For example, the firm may have a lot of funds tied up in **inventories** and **non-current assets**, which will adversely affect its liquidity.

- 與霍氏企業相比，艾氏企業的毛利率**較高**，但淨利率卻**較低**，原因是艾氏企業的**費用**佔銷貨的比重較大。
- 整體來說，霍氏企業的盈利能力比艾氏企業**高**。
- 然而，艾氏企業的運用資金報酬率**較高**，反映該企業較能善用**資金**，即艾氏企業的東主有**較高**的投資回報。

### 保持足夠的盈利能力和變現能力的重要性

- 如果企業不能如期償還貸款，**供應商**可能會減少甚至停止供應貨品。最終企業會因為沒有足夠的貨品出售而被逼停業。
- 企業的**盈利**最終會反映在**現金流量**上，因此盈利能力與變現能力是息息相關的。
  - 若企業的盈利能力持續偏低，變現能力也會隨之下跌。
  - 即使企業的盈利能力良好，也不代表它的變現能力同樣優秀。例如，企業可能積存了大量存貨及使用大量資本來購置非流動資產，這會影響企業的變現能力。