



## **Essential Business Finance 2** **(Ratio Analysis)**

This document has been produced to provide a non finance trained manager / business owner with

- a basic understanding of 'ratio analysis' as used to review the relative performance of a business,
- Core key ratios that each business owner manager should periodically review to monitor the performance of their business.

The document is not trying to teach accounting or finance but merely to remove some of the mystique that accountants and finance managers like to build around their subject.

If it helps you when you next look at the figures for your own business then it has achieved its objective. The next step is for owner managers to tailor the information that is provided for them by their own book keeper / accountant so that it is produced in a specific format that can assist in the decision making processes of the business.

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### **Document content**

- Ratio Analysis – what is it
- Hierarchy of Ratios – six core ratios to monitor financial performance of the business.
- Example – Essential Angels

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## **Ratio Analysis – What is it?**

Ratio analysis is a straightforward statistical technique to measure the relative performance of a business over time, or against its peers.

It is a two stage process:

- the calculation of the ratios; and
- the analysis of the ratios in comparison to others - the real value derived from the process depends upon an understanding of the organisation from which the ratios are taken. i.e. in isolation the ratios are pointless mere data that need analysis to derive information that then enables management to make decisions that effect their business.

As a business technique ‘Ratio Analysis’ has its origins in the measurement of the financial performance of organisations however from the introduction of scientific management techniques (work study etc) and the beginning of measurement of everything and everyone within an organization an industry has been created in measuring, it seems, everything about a business, down to (if you want) the amount of toilet paper used per employee. Yes, indeed, it is possible to naval gaze and the widespread use of the computer processing enables everyone to collate and process information – producing statistics at the press of a button.

As it is possible to measure almost anything about a business different stakeholders, who look at a company’s ratios, be they creditor, financier, or Shareholder / Investor; will focus upon different issues and ratios from the plethora of information that can be made available. We look at ratios rather than absolute figures because of the difficulty determining what is good when dealing with different sized organizations – a net profit of £50,000 may be good for a one man band but a disaster for a Footsie 100 company.

Within an organization there are different levels of information and decision making; whether strategic for owner managers, intermediate for managers or operational for the shop floor. Similarly different ratios might be more appropriate for different levels of analysis.

As the ‘Essential’ title of this paper implies we shall steer clear of the more esoteric and woolly ratios and initially stick to a few financial fundamentals which are focused upon why we are in business in the first place. We will also look at those ratios that are important at a strategic level for owner / managers. These give an overview of the performance of the business and can highlight areas of concern that lead you to ask questions about the performance of the business. If need be you can then drill down through a hierarchy of ratios to determine more precisely areas of concern.

As a business owner there is a balance between purely making money and other issues but the primary motivation remains to make money as without money you are unlikely to be able to do all the other things in your life that you want. What we also want is that the money we make (the return) on our investments (or the amount of money in our business) is maximised for the risks involved in the transaction / activity.

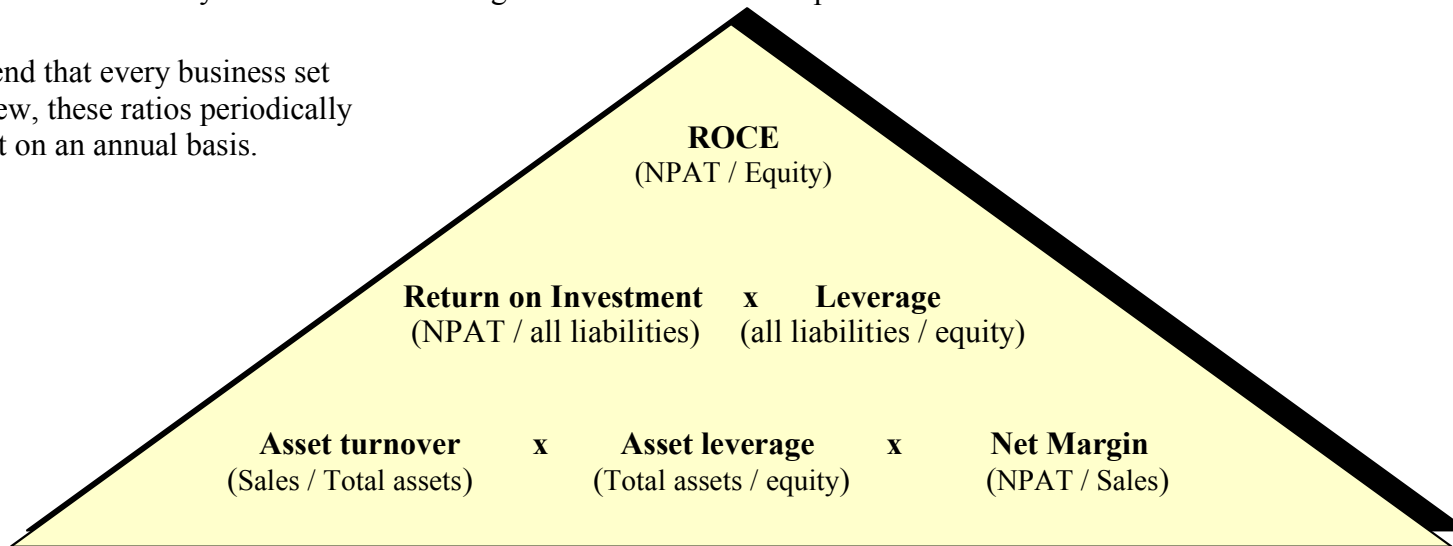
So why are we in business?

- Is it to provide employment for others? ... Maybe
- Is it to have control of our own destiny? ... Maybe
- Is it because no one else would risk employing us? ... Perhaps
- Is it to make 'money' ... you bet it is!

**Hierarchy of Ratios – Pyramid of Ratios.**

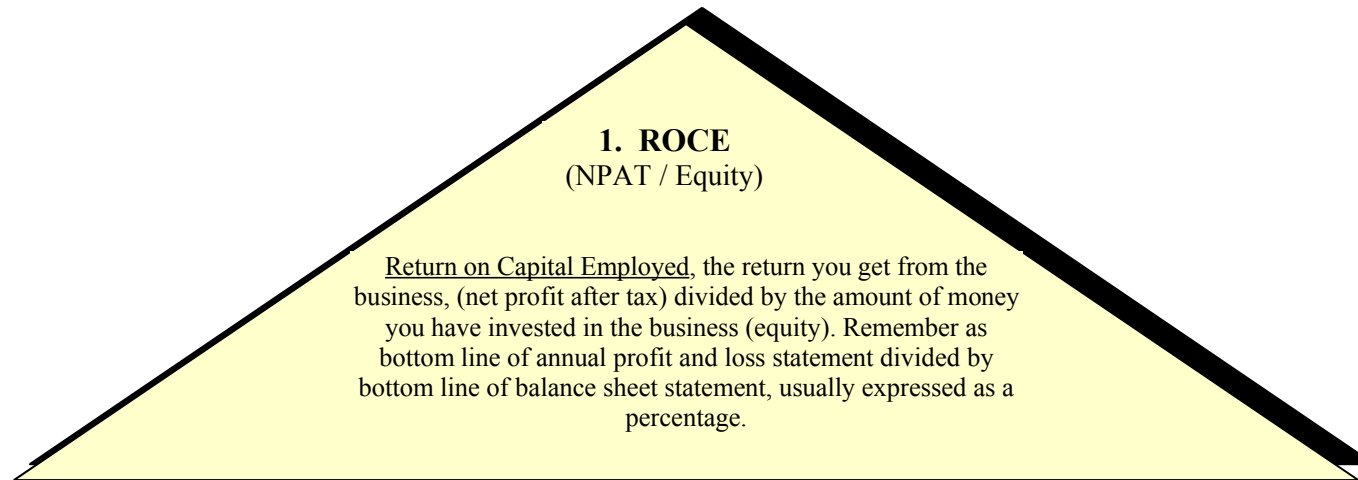
**Six Core ratios** show the financial strength / vitality of an organisation. These can be set out in a hierarchy or more graphically a Pyramid of Ratios. *At the top of the pyramid is the return for shareholders! Return on Capital Employed.* Other ratios contribute an understanding of the way a business operates but these six remain the key ones for owner managers to monitor financial performance.

We would recommend that every business set targets for, and review, these ratios periodically and certainly at least on an annual basis.



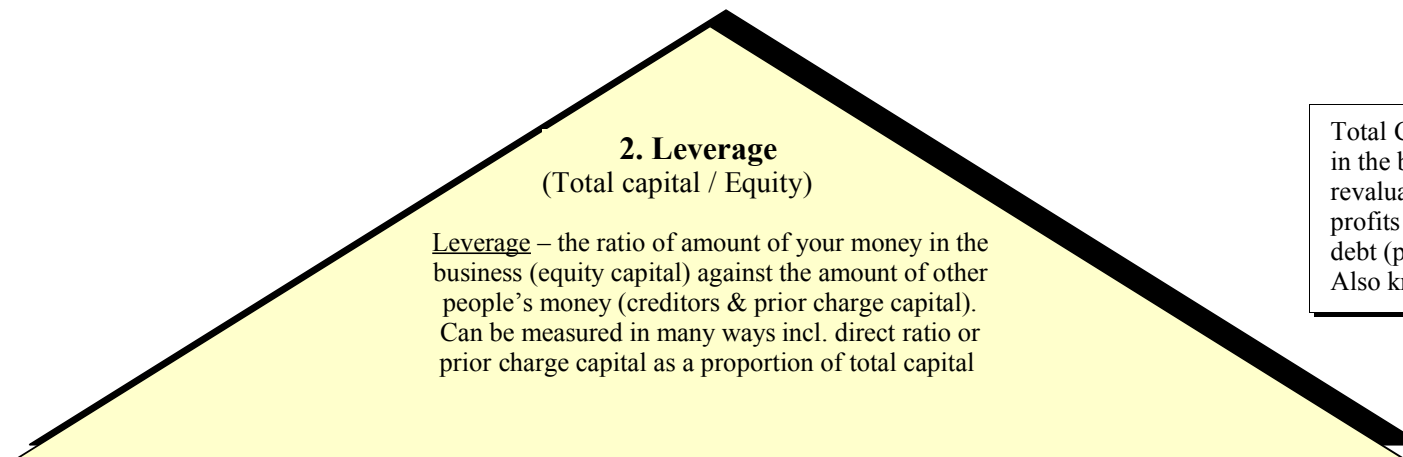
If you are in business to make money the first thing that you need to measure / monitor is how much money you are making but to give this some relevance to the real world you also need to relate how much money you are making in relation to the amount of money, (blood and sweat) you have invested in the business. As a financial ratio we call this 'Return on Capital Employed' – i.e. what you get back as a proportion of what you personally have put in and it is usually measured on an annual basis as a percentage. In this way you can compare it directly with other forms of investment, say if you invest £1,000 and get back £150 each year you have a 15% return on your investment. If you had put that £1,000 in the bank your return might be 5% so for this example for the additional risk (blood and sweat) of running a business you get 10% more.

Therefore the Return on Capital Employed is the ratio that we place at the top of our hierarchy of ratios.



OK we have the key ratio but what else do you need to monitor, what goes into making a better return on our money.

The next ratio to be considered is '**Leverage**'; which is fundamentally a ratio of your money in the business (equity) against other peoples money in the business. Leverage is calculated as the ratio of equity against the total liabilities of the business (debt and equity).



Total Capital = value of all funds invested in the business – whether equity, including revaluation reserves and accumulated profits (equity capital) or borrowed funds / debt (prior charge capital) and creditors. Also known as all liabilities.

So why is leverage a key ratio?

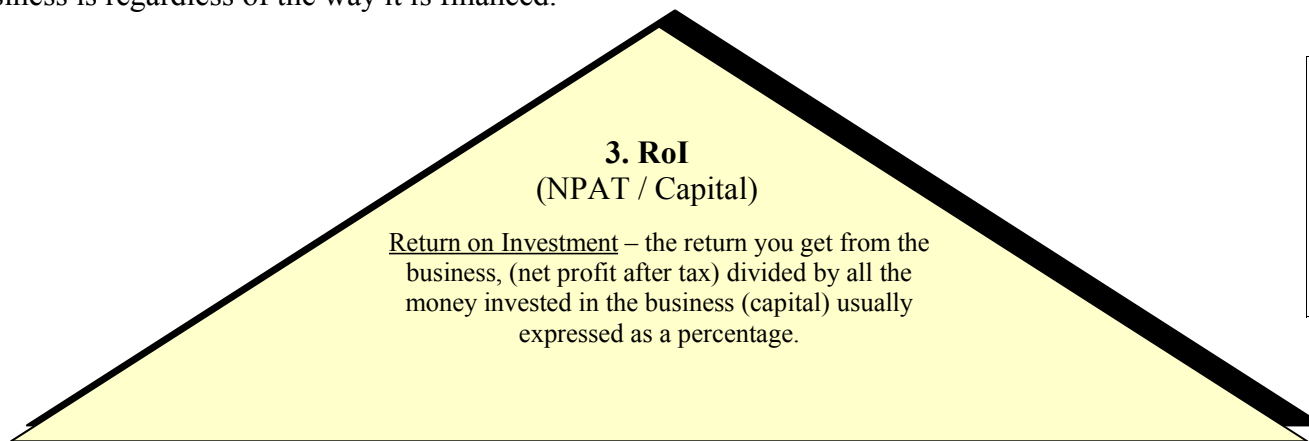
Two main reasons –

- Firstly it is a ratio that bankers look at when considering your business – although they may look more specifically at ‘gearing’ the relationship between equity and prior charge debt (borrowing from traditional lenders) - their view often being why should they put in more capital into the business than you, they will also look at the overall debt burden on the business.
- The second reason is that judicious use of debt finance rather than your own money can increase the return that you make on your own money.

So how does use of debt improve your return? The easiest way to illustrate the effect of leverage and gearing is to consider the residential housing market. If you buy a property for £200,000 with your own money and after twelve months sell it for £215,000 (net of costs) then you have made a 7.5% return on your investment. Ok but not brilliant. What happens to your return, however, if you borrow some of the funds, say 80% of the purchase price. Your personal investment is now only £40,000 and if you sell the property for £205,000 (net of all costs incl. interest) then you have made a 12.5% return on your initial investment. You could then buy five properties for your £200,000 and improving your return in absolute terms from £15,000 to £25,000. In the retail property market it has been possible until recently to borrow up to 90% of the property value is it no surprise with rising capital values that so many joined the band wagon / gravy train.

However, what happens if the capital value falls or the costs of servicing the borrowing increase – well we are back to the early 1990’s - your initial investment, your stake, can be completely wiped out and the bank still wants their money back. So gearing / leverage increases potential return but also risk to the business. It is getting the balance right that will maximize your return but the judgment is not putting the business at unnecessary risk.

Leverage can be a multiplier for your business returns but you still need to monitor the underlying performance of the business, this is known in finance speak as the ‘**Return on Investment**’ (RoI), which is how much return you make on all the capital in the business - it shows how efficient your business is regardless of the way it is financed.



Some analysts, particularly those considering the performance of a business with its peer group will look at RoI as the ratio of ‘Profit before Interest and Tax’ (Operating Profit) divided by Capital. This strips out any anomalies of tax and interest, which could distort comparisons between the efficiency of different businesses.

The profit figure is taken from the company's Profit and loss account and the total Capital calculated from the company's balance sheet. Because this ratio looks at how effective you are in using all the capital at your disposal to generate a profit it is considered by some (often Accountants) as 'the' key ratio. Our opinion is that this fails then to recognize the impact of using financial engineering to improve your overall return and hence RoCE is more important as this is the return that you as a owner actually get.

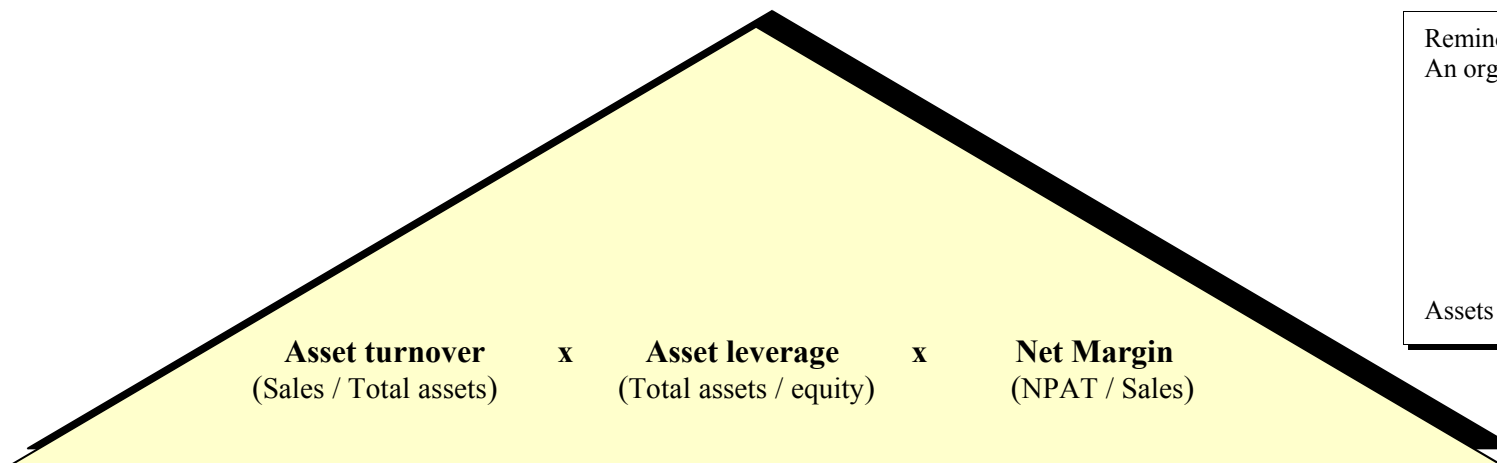
At this point just a reminder, and apologies for the digression, about how to make profits. Understand the Magic "Four-mula" for Profit.

Remember there are basically only four-ways to increase your profit

1. Reduce your costs, improve productivity and efficiency, but this is finite
2. Increase the number of customers, and do not lose them
3. Increase your prices, or your margins on sales
4. Increase the frequency customers buy your product or service

So we now have the underlying business return ratio and the gearing ratio. If you then take the figure for a company's **Return on Investment** and multiply it by its **Leverage ratio** the outcome is the **Return on Capital Employed**.

The third tier of the ratio hierarchy and the final core three ratios are:



Reminder  
An organisation's Assets = it's Liabilities

Assets	Liabilities	
Fixed	Current	Debt
Current	Long term	Equity
	Reserves	

Assets and Liabilities balance



#### 4. **Asset Leverage** = Total Assets / Equity

In Essential Finance 1 the concept of Assets and Liabilities was introduced with the basic truism that for any company its Assets and Liabilities will balance i.e. Total assets = Total liabilities.

For your stake in the business how much have you been able to leverage the asset base? The example of a personal mortgage is an extreme where you could for your own stake of £20k acquire a £200k property (90% mortgage) and leverage ten times your equity. It is similar to the term gearing / Leverage but with gearing the equity is related to 'liabilities' and with this ratio we refer to 'assets' – focusing on the other side of the balance sheet. But remember the sum of total assets and the sum of total liabilities are the same figure!

By focusing on the asset side with this ratio you are forced to look at what makes up the assets of the business and determine if you could make changes here if need be.

#### 5. **Asset Turnover** = Turnover divided by Total Assets in the business.

Asset turnover is a measure of how quickly a business is running or how hard the assets are being worked. It will vary between different business sectors - as a business that needs a building or expensive plant and machinery will have more assets than one that can be run from a small office. But if year on year the asset turnover figure is falling this could be a sign that the asset base is too large – underutilized machinery, stock levels too high, debtors not paying promptly, or holding too much cash? These could all be reasons for more sluggish asset turnover rather than just because sales are not increasing at the level wanted.

#### 6. **Net Margin** = Net Profit after Tax / Turnover (or alternatively Profit before Interest and Tax / Turnover)

This is a measure of a business's profitability and specifically it's bottom line profit as a proportion of its sales. If this is moving in the wrong direction year on year it could be because either gross margins are falling or overheads are increasing faster than the growth in sales.

Now the 'fun' maths. **Asset Turnover** times the **Net Margin** equates to a business's **Return on Investment**.

Return on Investment can therefore be improved by either turning the business assets more quickly – improving operational efficiency or improving the net margin on sales.

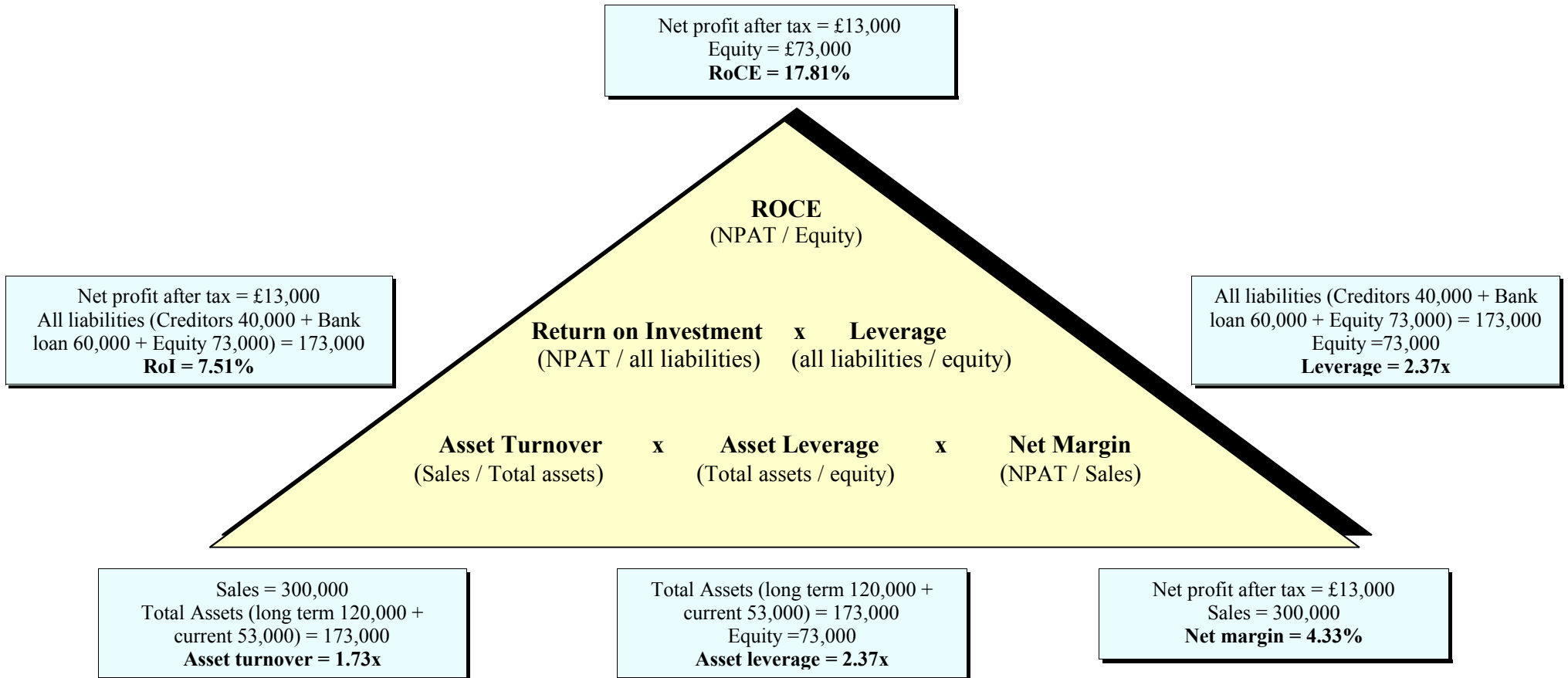
Also given that the Asset leverage figure is similar to leverage we find that when **Asset Turnover** is multiplied by **Net Margin** and multiplied by **Asset Leverage** the resulting figure is the **Return on Capital Employed**.

As an example of how the core ratios inter-relate we return to the **Essential Angels Store**, introduced in Essential Finance 1.

The Profit and Loss account and company Balance Sheet at the end of the first year were as follows:

<u>Profit and Loss</u>		<u>Balance sheet</u>		
<u>Essential Angels Store</u>		<u>Essential Angels Store</u>		
	£'s		Year 1	
			£'s	£'s
Sales	300,000	Long Term Assets	Buildings	100,000
Cost of goods	<u>(150,000)</u>		Vehicles	<u>20,000</u>
<b>Gross Profit</b>	<b>150,000</b>			120,000
<i>(Gross Profit Margin 50%)</i>		Current Assets	Stock	50,000
Admin Costs	(120,000)		Cash	3,000
Depreciation	(10,000)	Current liabilities		53,000
<b>Profit Before Interest &amp; Tax</b>	<b>20,000</b>		Creditors	(40,000)
Interest Charge	<u>(5,000)</u>		Bank	
Profit Before Tax	15,000	Net current Assets		<u>(40,000)</u>
Tax	(2,000)			13,000
Dividend	<u>0</u>	Long Term Liabilities	Bank	(60,000)
<b>Net Profit</b>	<b>13,000</b>	<b>Net Assets</b>		<b>73,000</b>
		Financed by		
		Share capital	60,000	
		Profit & Loss	<u>13,000</u>	
		<b>Equity</b>		<b>73,000</b>

**Essential Angels**  
**Core Performance Ratios**



**Health Warning**

These ratios do not look at the daily operations of an organisation and are usually related to historical data. As with all ratios they are pointless in isolation and without context. They can, however, when used properly provide pointers or identify warning signs that might enable a business to take steps to rectify a problem.

## Additional ratios to use to help identify performance issues within a business.

### **Profitability**

- **Gross Profit Margin** (profit after direct costs of providing product / service are deducted divided by sales, turnover expressed as a percentage) is a fundamental margin that every one in management should be aware of and seek to improve through cutting waste and improving efficiency. It is also worth reminding you that, as has been seen in the core ratios, it is not necessarily a sign of doom and gloom if margins have slipped slightly, if, as a consequence, volumes have increased.

### **Liquidity**

- **Quick ratio** (Current Assets divided by current Liabilities) to show whether you are likely to have the resources available to meet your liabilities as the fall due. Will you run out of cash?
- **Acid test** (current assets minus stock divided by current liabilities) to show the resources that can be quickly converted to cash to meet liabilities as they fall due.
- **Burn rate cover** (available cash divided by monthly overheads) particularly important for early stage businesses with lumpy cash flow.

### **Financial risk**

- **Gross Gearing** (level of prior charge debt divided by equity) A measure that banks will focus upon.
- **Interest cover** (Operating profit before interest and tax divided by cost of interest) – are you making enough money to cover your basic finance costs – look for three times as a minimum, once for interest, once for tax and once for business / owners.

### **Operational effectiveness**

- **Debtor days** (average level of debtors x 365 divided by credit sales turnover) shows how quickly you collect debtor funds – is the figure in line with your terms of trade? If not why not?
- **Stock turn** (average stock levels x 365 divided by cost of materials) shows how quickly you are turning stock levels, the faster the turn the more efficient the operation and less funds tied up in stock sitting on the shelves.

### **A thought to ponder**

Different analysts will argue for the relative importance of different measures. They will also argue over what is the ‘correct’ formula. Our advice is just decide what measures of performance are important for your organisation, then select the ratios (with your financial advisers) that enables you to monitor that best, to provide you with the information that assists you to make decisions that will improve the performance of your business.