oxera
compelling economics

Agenda

Advancing economics in business

Something for nothing? Returns in low-asset industries

The framework for regulating infrastructure is well established, and is designed to provide returns to investors in physical assets. However, market investigations and, potentially, regulation can also arise in other markets where assets are few in number. This article considers whether, and why, a different framework could be more appropriate in such markets

All businesses have assets and liabilities. The sizes of many of these are recorded on balance sheets and used by investors and other parties, including regulators, to understand the size of a business, particularly relative to its competitors.

Most infrastructure businesses are reliant on physical assets, including network assets such as pipes and wires or railway tracks. However, for businesses in other industries, or those that operate only in limited parts of the supply chain, the size of the physical asset base may be small relative to the revenues of the business. Such businesses are referred to as 'asset-light' or with low asset intensity. Examples include:

- **retail businesses**—many retailers, such as energy suppliers or supermarkets, have low assets relative to their operational costs;
- **professional services**—service firms, such as accounting firms, rely on their staff to deliver revenues and profits;
- **IT and high-tech firms**—many IT and high-tech firms have created value not through tangible investment, but by developing valuable technologies and intellectual property that cannot be replicated by their competitors.

There are many other types of business with low asset intensity, most of which are in similar categories to the above.

Does 'asset-light' mean 'return-light'?

Keen readers of *Agenda* will have seen a series of articles in 2013 on the weighted average cost of capital (WACC), which represents the (opportunity) cost of capital for a firm, otherwise known as the 'required return on investment'.

The WACC is the benchmark level of profitability often used in competition and economic regulation. It is supported by economic theory, which establishes that investors will expect a positive return (profit) for investing in assets, to remunerate the non-diversifiable (systematic) risk of that investment.

Investors generally agree with economists that, for many industries, the return on tangible investment is a relevant measure of profitability. However, particularly for businesses with relatively low asset intensity, investors are equally interested in **operating margins**, defined as operating profit divided by revenue.[1]

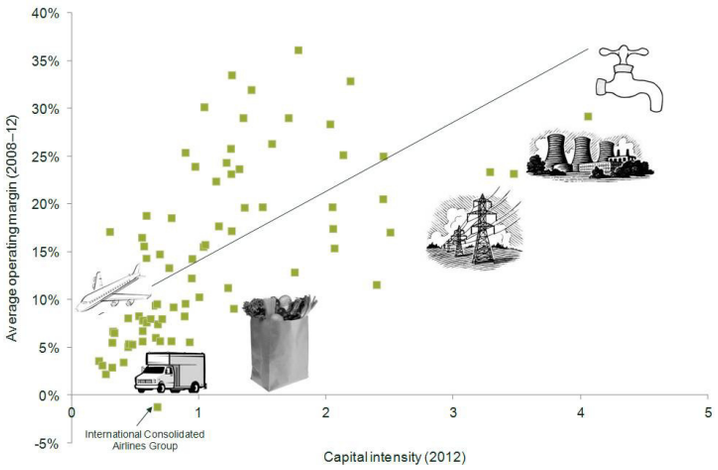
Based on the return on capital approach to profitability, the benchmark operating margin for any firm would be calculated as the required return on investment multiplied by the 'capital intensity'—the amount of assets required to generate revenue, as illustrated by Figure 1.

Figure 1 The relationship between profit margins and WACC

Source: Oxera.

This equation suggests that required profit margins will decrease as assets decrease (relative to revenues). So, for asset-light businesses, the margins should be much lower than the market average. Figure 2 shows how this effect is observed in practice for FTSE 100 companies. There is a clear link between the level of capital intensity and the achieved profit margin.

Figure 2 Profits of FTSE 100 companies relative to their level of assets



Source: Oxera analysis of Bloomberg data for FTSE 100 in 2012.

Figure 2 shows that the slope of the line is clearly positive, which is consistent with the return on capital approach. This indicates that the standard approach works as a reasonable predictor of the average profitability of companies with higher or lower levels of asset investment requirements, assuming that an accurate assessment of the WACC can be derived. There is a reasonably wide range for individual firms, reflecting that in any industry some firms are more successful than others, but the data is consistent with the overall trend that profits are linked to the level of assets.[2]

However, standard finance theory also seems to suggest that, in the absence of asset investment, investors should be willing to accept zero—or very low—profit margins. The reasoning is that if there is no asset investment then there will be little or no capital to remunerate, and therefore companies will continue to enter and invest in the market until any positive margin between prices and operating costs has been eliminated.

Figure 2 appears to show that the 'intercept'—i.e. the predicted level of profit as assets fall towards zero—has been significantly different from zero, and statistical analysis of the data in Figure 2 confirms this: based on actual margins from 2008–12, a typical FTSE 100 company with no assets would still be expected to earn a profit margin of at least 5%.[3]

The effect that companies with no assets still appear to earn significant positive returns is also observed, arguably more strongly, if only relatively asset-light companies are included in the sample. For example, for the companies in the sample that have lower assets than revenues (i.e. those in the bottom left of Figure 2), an analysis of actual achieved returns suggests that there was no link between the level of profits and the level of asset intensity.[4] This, in turn, suggests that, while the WACC may still be the best way to benchmark profitability for most companies, for those that are asset-light it may not be sufficient to predict a required level of operating margin for investors.

In this case, for an economic regulator such as Ofwat (the economic regulator of the water industry in England and Wales) or Ofgem (the energy regulator for Great Britain), which may be seeking to establish a benchmark return for a business such as retail that has limited or no assets, using the standard return on assets approach to profitability may not accurately reflect benchmark profits within the industry.

It's all about the liabilities, not the assets

There are therefore two questions when trying to identify what a benchmark asset-light margin might be. First, why might the return on capital approach break down for businesses with low asset intensity? Second, what does this mean for investors in these businesses?

The first question appears to be more easily addressed than the second. The standard approach to benchmark profitability focuses on assets in defining the required return on capital. This approach is often even described as 'return on assets'. However, a return on assets is not necessarily the correct definition of the WACC, which is more accurately represented as the average return required to repay the liabilities of the firm. On a standard accounting balance sheet, assets and liabilities are the same. However, for the balance sheet of an asset-light business, the nature of liabilities may be more complex than for an infrastructure business, and may not be fully reflected in the accounting balance sheet.

One source of such additional liabilities is where companies invest in 'intangible assets', such as brand value, R&D or customer acquisition. These investments may not meet the accounting criteria for recognition on the balance sheet, but they are very similar in nature to tangible assets. Investment is made today in the expectation of making a return tomorrow. Therefore, today, investors will expect returns on investments from previous years. This can be addressed by 'capitalising' certain operating costs—for example:

- training costs could be capitalised into knowledge assets;
- R&D costs could be capitalised into IP assets;
- marketing costs could be capitalised into brand-value assets.

While they are not 'assets' for accounting purposes, these liabilities and assets are otherwise very similar to those for an asset-intensive business—profits in current and future periods will be driven by the level and effectiveness of investments made in prior periods.

The role of 'contingent liabilities'

Less clear still is the role of risks or liabilities (such as contractual obligations) where there is no clear asset. If a firm takes on a contract and commits to the costs required to deliver that contract, or commits to purchase products for onward sale, this generates a risk that the revenues will

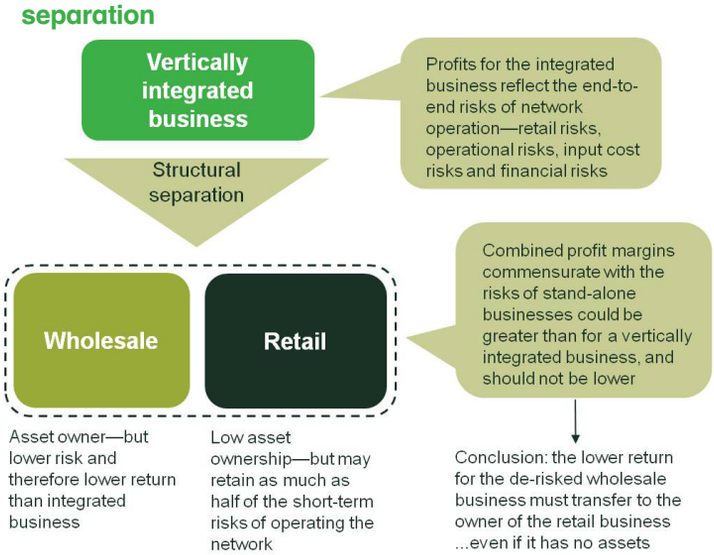
not be sufficient to cover the costs. This is a real liability for the firm's owners, unless they can 'walk away' from losses, which is not a realistic option for many firms.

Water retail and energy supply businesses are a good example. In theory, these could be set up with no capital, depending on the timing of working capital flows. However, the businesses may take significant risks. In the case of water, arguably the largest risk that has been allocated to retailers is that customers do not pay (bad debt risk). The level of bad debt is potentially linked to changes in wider economic conditions. In energy, there is a commitment to supply at a price that is fixed for a period. Energy suppliers will 'hedge' where possible—i.e. will seek to use wholesale energy markets to reduce their input price risk. However, given the uncertainty about the level of demand, any hedging will be imperfect, leaving the company exposed to potentially highly volatile wholesale prices.[5]

Such retail businesses would be expected to hold an appropriate level of risk capital (specifically, equity capital) against these risks, even if this capital is not invested in physical assets. The providers of this equity capital are taking equity risks comparable to other investors in tangible assets. It is then consistent that the investors in these businesses would still expect a return and a positive operating margin. In contrast, the theoretical assumption of an expected profit of zero would seem to suggest that, by removing physical assets, risk can be made to 'disappear'.

For example, if a vertically integrated business is structurally separated into an asset-light retailer and an asset-heavy wholesaler, the risk associated with the assets within the wholesaler will fall. This risk will have transferred to the retailer—the total risk will not have fallen and may even rise following separation. The retailer will have accepted the liabilities and risks associated with recovering the costs of the assets from the end-users, and will expect a return for doing so.

Figure 3 Impact on risk and return of vertical separation



Source: Oxera.

Approaches to deriving benchmark asset-light margins

As described above, the majority of regulated infrastructure businesses have significant levels of assets, and therefore regulated tariffs are based on a WACC approach. However, there is some precedent of regulators having measured return on sales, where it has been recognised that return on assets may not be a reliable measure of required returns.

This is relatively common in competition cases where, in industries such as groceries, the precedent cases have drawn on retail margins, measured as operating profit to revenue. It is less common in regulated businesses, where asset-light industries are generally easier to enter and network effects are less common. Regulation is therefore not normally required to constrain prices, although there are exceptions, including the current Ofwat review of retail margins, and the Ofcom 2012 review of the regulation of postal services.[6] Consistent with the theory described above, the main approaches to assessing retail margins would be:

- **comparator analysis**, where other asset-light businesses are used as a source of margin comparison, potentially with adjustment for different levels of operational risk and/or input cost risk;
- **short-term asset analysis**, where assets and liabilities such as working capital are treated as the relevant asset base;
- **intangible asset analysis**, where operating expenses are capitalised as intangible assets to augment the tangible asset base;
- **risk analysis**, where liabilities associated with the risks of operating the business are reflected in the margin analysis, consistent with the assessment of contingent liabilities discussed above.

Some recent examples are summarised in Table 1 overleaf.

Alongside this actual precedent, there has been much debate about the profit margins earned by retail energy suppliers. In recent years, these have been reported within separated accounts, and have averaged around 2–4% for the 'big six' suppliers.

Oxera's analysis shows that a range of techniques could be combined to identify a benchmark retail margin. The level of equity risk may be larger for energy supply than for water retail, as energy suppliers face greater wholesale input price volatility and volume risk. However, given recent volatility in the postal services market, it is likely that Royal Mail faces still greater uncertainty around the level of industry demand.

Any ongoing review of energy market profitability would therefore be expected to take account of the nature of the risks highlighted above, given the nature of separation within the energy markets.

Table 1 Precedent for regulation of asset-light profit margins

	Regulator	Margin	Rationale
Low-risk (limited input risk)			
Household UK water	Ofwat, 2014	1%	Benchmarking, with return on capital cross-check
Northern Ireland retail electricity	Uregni, 2011	1.7%	Sufficient to cover retail risks: wholesale risks largely passed through to customers
Medium-risk (pass-through of majority of input costs, competition and/or input price risk)			
Non-household UK water	Ofwat, 2014	2.5%	As household, with additional benchmarking against unregulated sectors
High-risk (significant volume/competition risk and/or input price volatility)			
Royal Mail	Ofcom, 2012	5–10%	High demand risk and precedent of significant profit volatility
Network Rail High Speed	ORR, 2014	7.3%	Long-term fixed-price contract with high operational risk

Note: All the 2014 numbers reflect consultation proposals, rather than decisions. The Network Rail High Speed figure is quoted as an 8% margin over costs. CER, Commission for Energy Regulation. ORR, GB Office of Rail Regulation.
Source: Various regulatory documents.

In summary...

Market evidence suggests that, contrary to the apparent implication of the assumptions within the WACC approach to benchmarking required returns, investors in asset-light businesses still require a profit, reflecting the return on the risks that they take from running the business and/or the intangible assets they create as a result of operating the business over time.

Measuring an appropriate level of profit margins is a difficult process—but where a regulator or competition authority is reviewing an asset-light industry, the alternative route of applying the WACC to the tangible asset base appears likely to underestimate the return required by investors.

[1] Operating profit is often referred to as EBIT (earnings before interest and tax). It represents the annual returns to investors from which businesses have to remunerate debt and equity investors, and also make tax payments. It includes depreciation, which is an accounting measure of the annual reduction in the value of tangible assets due to ageing.

[2] There will also be fluctuations around the trend line to reflect other factors, for example that some companies have higher 'betas', which affect the level of required return on assets.

[3] Specifically, the 'intercept' return that the data predicts for an average company with no assets is 6.5–7%, with a standard error of around 1.5%.

[4] The slope of the line linking returns to asset intensity for businesses with capital intensity <1 is small, and not statistically different from zero.

[5] For example, two of the 'big six' energy retailers (the six largest GB energy suppliers) have suffered losses, on average, over the four years since separated accounts were first published. Outside the energy sector, many FTSE 100 retailers, including Clintons (greetings cards), GAME (computer games) and Courts (carpets), have gone into administration or been subject to rescue takeovers.

[6] See Ofcom (2012), 'Securing the Universal Postal Service: Decision on the new regulatory framework', March. Ofcom is the UK communications regulator.