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Does pay TV pay too much? Profitability analysis in the context of market inquiries

Analysis of the profitability of BSkyB has been a significant part of the ongoing Movies on Pay TV market investigation. The investigation illustrates how an economic profitability framework can be applied to a wide range of industries in a way that facilitates meaningful conclusions to be drawn about competitive conditions

The Competition Commission's conclusion

BSkyB, a media company created in 1990, is the largest provider of pay TV in the UK with 10m subscribers in 2010, which is considerably more than its main competitor, at around 4m for Virgin Media, and just over 0.5m for BT Vision.[1] In its Movies on Pay TV market investigation, the UK Competition Commission (CC) was required to determine whether any feature or combination of features of selected markets in which BSkyB operates prevents, restricts or distorts competition.[2] Publishing its Provisional Findings at the end of August 2011, the CC noted that: 'Sky's market power in the pay-TV retail market gives rise to barriers to the acquisition of [first subscription pay-TV window] movie rights',[3] and provisionally concluded that this resulted in an adverse effect on competition, with consumers 'paying around £50–£60 million a year more than would otherwise be the case'.[4]

The CC assessed whether BSkyB's profitability is consistent with a lack of effective competition in the market, and provisionally concluded as follows:

> We have looked in some detail at Sky's profitability and our initial assessment is that Sky has persistently earned profits substantially in excess of its cost of capital [...]. We have not seen evidence that other firms have earned profits in excess of their cost of capital, but we note that Sky itself accounts for a substantial part of the market. Sky's high profitability is consistent with other evidence showing a lack of effective competition.[5]

Some of the key conceptual and practical issues that arise when applying profitability analysis are summarised below, using the ongoing BSkyB case as an example of how these issues might be addressed. The article makes reference to an assessment of BSkyB's profitability conducted by Oxera on behalf of Ofcom, which provided the basis for the CC's analysis.[6]

The role of profitability in competition analysis

The objective of profitability analysis is to assess whether returns are consistent with what would have been expected in a well-functioning market with free entry and exit. The concern is not that high profitability is necessarily undesirable, but rather that it might indicate that the competitive process is impeded. Specifically, returns persistently and significantly in excess of the competitive benchmark can be an indication of market power or a lack of competition in the market.

In an earlier study for the UK Office of Fair Trading (OFT), Oxera demonstrated how the net present value (NPV) and internal rate of return (IRR) investment appraisal concepts can be extended to analyse competitive conditions of markets.[7] In well-functioning markets, NPV-positive investment opportunities would not be expected to persist indefinitely. Over time, such markets would be expected to attract competitor companies, resulting in a reduction in the NPV of investment opportunities. The NPV might be reduced as a result of lower prices and higher quality and costs. If companies can enter and exit the market freely then, over time, the IRR would be expected to converge towards the cost of capital. Evidence of the IRR being persistently above the cost of capital could indicate that the competitive process is not functioning well, and that there may be barriers to entry.

While the accurate measurement of economic profitability is an important and sometimes complex first step, interpretation of the results and what they suggest about how the market is functioning is equally, if not more, important. The discussion below therefore examines one of the key measurement issues in the BSkyB case (asset valuation), and one of the main interpretation issues (risk-taking and innovation).

Asset valuation

Both the IRR and return on capital employed profitability metrics rely on accurate valuations of economic capital employed. The relevant valuation standard in the context of competition policy is a cost-based approach, consistent with the 'value-to-the-owner' principle[8] and, specifically, the modern equivalent asset (MEA) value—ie, the current cost of constructing an asset base to deliver the same level of output as the existing assets. The MEA value is often proxied by the depreciated replacement cost of assets.

Obtaining reliable estimates of the MEA value of capital employed can be challenging, particularly when one or more of the following apply.

- **High price inflation (or deflation)** since the date on which the assets were acquired, and/or wide divergence between rates of inflation for different types of asset.
- **Rapid technological development**, which increases the quantity or quality of output that can be achieved for a given cost and makes the identification of the appropriate MEA more challenging.
- **Intangible assets** comprise a significant proportion of the economic capital employed, and do not qualify for recognition under standard statutory accounting principles.[9]

An important consideration in the BSkyB case is the value of intangible assets and, in particular, customer relationships. Conceptually, customer relationships share many of the economic characteristics of tangible assets. The company typically invests in building a customer relationship with the intention of recovering the cost of the investment through higher net cash flows over the lifetime of that relationship.

Investment in customer relationships often takes the form of marketing, which is used to establish and develop a brand and to communicate the product offering to consumers. A second type of investment often occurs where companies enter into long-term contracts with consumers (eg, in mobile phones, subscription television, energy supply, or financial services). Relationships involving long-term contracts often entail significant initial set-up costs at the point of customer acquisition, including sales and legal costs associated with setting up the contract, and, potentially, the supply of free or subsidised assets for the consumer to use over the lifetime of the contract.

In Oxera's analysis of BSkyB's profitability, a subscriber valuation model was developed to estimate how the depreciated replacement cost of the subscriber base had evolved over time.[10] In this model, cohorts of subscribers are modelled, where each subscriber entering the asset base in a given year is valued at the subscriber acquisition cost for that year. This cost is derived by identifying items of operating expenditure in the accounts that relate to subscriber acquisition, and dividing the total annual subscriber acquisition cost by the gross number of subscribers acquired in that year.

Over time, depreciation of the customer relationship assets is driven by two factors: customers cancelling their contracts, and the ageing of remaining customer relationships. One area of uncertainty in the valuation of such relationships is the economic life of these intangible assets. In the Oxera model developed for Ofcom, this uncertainty was mitigated by calibrating the economic life using the annual churn rates of subscribers (where 'churn' represents the number of subscribers over a given period that terminated their subscription, expressed as a percentage of total average subscribers).

The CC considered that this was an appropriate approach to valuing the subscriber base:

> We agreed with Oxera that the valuation of intangible assets should be based on cost.[11]

and:

> We also agreed with Oxera that the value of subscribers, which is built up largely of marketing costs, would cover many of the costs associated with creating BSkyB's brand, reputation and customer loyalty.[12]

Interpretation of results

The robust measurement of profitability is an important step in assessing competitive conditions in a market. However, it is not straightforward to infer from evidence of high profitability that there are features of a market that are hindering the competitive process. A better understanding of the market can be obtained by investigating the factors that are driving this high profitability.[13]

One important candidate explanation for high realised profits is that they represent compensation for risk-taking. In finance, portfolio theory separates risk into two categories:

- **diversifiable** risk, which relates to a particular project or security, but where the impact of the risk can be mitigated by holding a sufficiently large portfolio of projects or securities;

− **non-diversifiable** risk, which relates to macro-economic conditions and cannot be mitigated by holding the project or security in a portfolio with other assets.

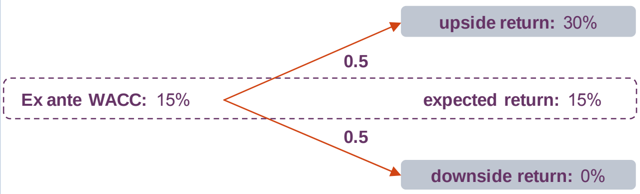
Portfolio theory predicts that investors expect to be compensated for exposure to non-diversifiable risk only. This compensation determines the cost of capital. The relevant benchmark for assessing whether profitability has been high relative to the non-diversifiable risk to which investors were exposed is therefore the cost of capital at the time when the investment decision was made.

The issue then arises as to how to treat diversifiable or company-specific risk if this is not captured by the cost of capital. Such risks might include the probability that an oil exploration company does or does not find a productive well, or that a pharmaceuticals company does or does not develop a blockbuster drug. One explanation for high profitability could be that it is the result of good fortune and represents compensation for risk-taking. In Figure 1 below, this would be consistent with observing the upside return of 30%. Such a scenario would not necessarily suggest that there are problems with the competitive process, since, at the time of the investment, the expected return of 15% (averaged across equally probable upside and downside scenarios) was in line with the weighted average cost of capital (WACC).

Understanding the nature of the risks taken by the company, and the extent to which they would have been expected to lead to a wide range of potential outcomes for profitability, is therefore a critical step in interpreting the analysis of historical profitability. Oxera's second report for Ofcom on the profitability of BSkyB identified the following three features of businesses and markets where high profitability is more likely to represent successful risk-taking than impediments to the competitive process.[14]

− The **nature of investments** is such that businesses put significant amounts of capital at risk in largely irreversible investments against the prospect of uncertain demand.
− **Returns are not persistently high** because, where they are the result of innovation, the innovations would be expected to be replicated by competitors over time.
− **Expected returns at the time of investment are in line with the cost of capital**, taking into account the probabilities attached to different scenarios for cash flows.

Figure 1 Stylised illustration of a risky investment project



Source: Oxera.

Examining a wide range of evidence to assess the nature of risk-taking in the market of interest can help to establish whether high observed profitability is likely to be an indicator of problems with competition.

Having reviewed a significant amount of evidence on BSkyB's historical risk-taking, the CC concluded that the level and persistence of the company's profitability was larger than could be explained by risks that later turned out to be successful:

> Overall, the evidence we have seen with regard to Sky's recent investments suggested that *(a)* Sky believed itself capable of managing the associated risks, *(b)* the costs were largely scalable and largely within Sky's control, and *(c)* the payback periods were relatively short with positive returns expected from the outset.[15]

Summary

Profitability analysis is a tool that can contribute a significant amount of information to a competition investigation. A rigorous theoretical framework grounded in the principles of financial economics has now been implemented in competition inquiries across a number of industry sectors. The ongoing Movies on Pay TV market investigation is an example of how implementation of the framework is more challenging in some industry sectors than in others, but also how these challenges can be addressed in a way such that meaningful conclusions can be drawn about competitive conditions.

[1] Competition Commission (2011), 'Movies on Pay TV Market Investigation—Provisional Findings Report', August 19th, section 2.
[2] The markets concern the supply and acquisition of subscription pay-TV movie rights and the wholesale supply and acquisition of packages including core premium movies channels.
[3] Competition Commission (2011), op. cit., para 41.
[4] Ibid., para 44.
[5] Ibid., para 6.104.
[6] Oxera (2010), 'BSkyB's Profitability in the Context of the Ofcom Market Investigation—Second Report', February, attached as part of Annex 3 to Ofcom's pay-TV statement of March 2010; Oxera (2009), 'BSkyB's Profitability in the Context of the Ofcom Market Investigation', June, attached as Annex 9 to Ofcom's pay-TV phase three document of June 2009.
[7] Oxera (2003), 'Assessing Profitability in Competition Policy Analysis', report prepared for the Office of Fair Trading.
[8] For more details, see Edwards, J., Kay, J. and Mayer, C. (1987), *The Economic Analysis of Accounting Profitability*, Clarendon Press; or Oxera (2007), 'Valuing Intangible Assets: a Tangible Improvement to Competition Policy', *Agenda*, July.
[9] For a discussion of the treatment of intangible assets in earlier CC inquiries, see Oxera (2007), op. cit.
[10] Oxera (2009) and Oxera (2010), op. cit.
[11] Competition Commission (2011), op. cit., Appendix 6.4, para 122.
[12] Ibid, Appendix 6.4, para 123.
[13] See Niels, G., Jenkins, H., and Kavanagh, J. (2011), *Economics for Competition Lawyers*, chapter 3.6.7; Oxera (2005), 'Profitability Analysis and Competition Policy', *Agenda*, April.
[14] Oxera (2010), op. cit.
[15] Competition Commission (2011), op. cit., Appendix 6.4, para 213.

If you have any questions regarding the issues raised in this article, please contact the editor, Dr Gunnar Niels: tel +44 (0) 1865 253 000 or email g_niels@oxera.com

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