

Analysis of profitability and investor returns

Annex 12 to pay TV market investigation consultation

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Contents

Section		Page
1	Introduction	1
2	Historical profitability analysis of Sky	3
3	Internal rate of return on investment of Sky shareholders	5
4	Comparison of enterprise value to asset value	9

Introduction

- 1.1 An analysis of pay TV price levels can be informed by looking at profitability and investment returns. Companies earning excess profits for a sustained period may constitute evidence of the exploitation of market power through charging excessive prices to consumers.
- 1.2 Ofcom has had regard to the OFT's paper on "Assessing profitability in competition policy analysis", of July 2003¹. This in turn offers an extract from the Competition Commission's guidelines on market investigation references, which state that "a situation where, persistently, profits are substantially in excess of the cost of capital for firms that represent a substantial part of a market could be an indication of limitations in the competitive process".
- 1.3 Ofcom is aware of the risks of inferring too much about the effects of the operation of the market on consumers from profitability analysis. Such indicators should not be used in isolation from a fuller assessment of competition in the market. For example, profits in a market characterised by high degrees of innovation may reflect the competitive rewards, and a snapshot of profits would not be an accurate reflection of the competitive situation. Moreover it can be difficult to derive a suitable benchmark for what constitutes a normal level of profitability, above which profits may be deemed excessive.
- 1.4 The ability to conduct analysis of profitability and investment returns earned by various firms is improved when the activities of the firm are wholly and directly related to the relevant market, comparable with each other and owned by a company which trades on a recognised stock market exchange. In the case of the UK pay TV market, such analysis is not straightforward. Top Up TV, for example, is not a listed company, which means that the returns to investors can be difficult to assess. BT Vision is only a small part of a much bigger entity (BT Group) meaning that both costs and returns may not be entirely distinct from that of the parent. Virgin Media is publicly listed but derives a significant proportion of profit from activities which are not directly related to pay TV, such as broadband, mobile telephony and voice telephony. Furthermore, the various mergers and restructurings which Virgin Media and its predecessors have undertaken tends to reduce the visibility of profitability and returns earned over a long period of time.
- 1.5 To some extent, British Sky Broadcasting Group plc ('Sky') also undertakes activities which are not directly related to pay TV. It has also engaged in a number of discontinued or unrelated activities and investments in the past. However, in the case of Sky, unlike the other operators mentioned above, there is a long-running time series of readily available data on its financial performance and the returns offered to investors, which make an analysis more straightforward than is the case for other operators. We have therefore undertaken a preliminary analysis of returns earned by Sky.
 - We first consider a historical profitability analysis of Sky.
 - We then analyse the return on investment for Sky shareholders.

¹ <u>http://www.oft.gov.uk/shared_oft/reports/comp_policy/oft657.pdf</u>

• We make a comparison between enterprise value and asset value.

Historical profitability analysis of Sky

- 2.1 In considering Sky, it is possible to undertake some analysis of the company's profitability, including, to a large extent, the reported profitability specifically of its pay TV operations. However, as noted above, these performance indicators in isolation may be insufficient to draw conclusions about the level of competition in the market.
- 2.2 As also noted above, it is difficult to make like for like comparisons of profitability with other players in the UK market because of the significant differences in the composition of their businesses. Comparisons with international benchmarks may also be of limited value because of significant differences between markets. Additionally, as mentioned above focusing merely on a snapshot of profitability in a dynamic market such as the pay TV sector could be misleading.
- 2.3 Our preliminary analysis shows that there have been very considerable variations in accounting profitability for Sky over the last decade. Although absolute profitability has generally been on an upward trend, operating profits have varied considerably.



Figure 1 Sky turnover and operating margin 1997-2006

Source: Sky annual reports

2.4 This in itself leads to a large number of questions about what time period would be appropriate for a profitability analysis of Sky's activities in the relevant market. We note that accounting-based profitability measures can be a poor estimator of economic profit due to accounting distortions and, in the case of comparator analysis, differing accounting treatments. There are, for example, significant uncertainties

about the appropriate time period over which costs incurred should be matched to revenues.

2.5 It is these uncertainties over the use of accounting-based profitability measures which lead us to look at other ways of understanding financial performance; the next section deals with the internal rate of return on investment received by Sky shareholders.

Internal rate of return on investment of Sky shareholders

- 3.1 One alternative approach to considering profitability analysis is to consider the observed returns experienced by Sky shareholders in terms of capital appreciation and dividend income (which we assume to be reinvested in additional capital.) This is sometimes referred to as a measure of "Total Shareholder Return" and reflects the returns available to shareholders through both actual dividend income received during the relevant past period and changes in the capital values of the shares which reflect changes in the expectations of all future returns anticipated by the market.
- 3.2 By considering Total Shareholder Returns as an investment "project" it is possible to compute the Internal Rate of Return ("IRR"). In this calculation, the initial purchase of shares is treated as a cash outflow in the project, dividends received are invested in shares at the prevailing market value and the value of the shares at the end of the period is treated as a cash inflow. For our calculations, we have considered a hypothetical investor who invested in the Sky shares at flotation, and held them until 2007, with dividends received during that period reinvested into further shares at the prevailing market price. The IRR of the project is then the discount rate which, if applied to these values, would mean that the project had generated a return which equated to zero.
- 3.3 There are various ways of computing returns to investors, including various possible treatments for corporate actions and changes in debt financing. Results can also be influenced by the intermediate data frequency used in the computation (daily, monthly, yearly, etc) and whether an exact or averaged value is used at the end date. However, in general, Ofcom has found that the internal rate of return observed for a shareholder who invested in Sky at flotation in 1994 and sold at recent market values generally falls within the rage of 6-8% per annum, depending upon the precise source data and type of calculation used.
- 3.4 These results measure returns incorporating all activities of British Sky Broadcasting plc and includes a number of activities unrelated to pay TV, some discontinued activities and a number of investments made in other companies by Sky. It is therefore not a pure measure of returns generated from Sky's pay TV business although, given the pre-eminence of pay TV activities, the actual and anticipated returns generated from this line of business might be expected to dominate the returns profile.
- 3.5 We note that a return of 6-8% per annum is lower than total shareholder returns measured by the various indices over an equivalent period. Using yearly averages to the end of Sky's June 2007 financial year, for example, Thomson Datastream data shows an annual return of 7% for Sky, compared to 9% for the FTSE100 index, 12% for the FTSE250 index and 9% for the FTSE All Share index.

Figure 2 IRR of total shareholder returns for Sky vs. major indices: 1994-2007



Source: Thomson Datastream

- 3.6 By way of comparison, using monthly averages from the end of December 1994 to the end of November 2007, Bloomberg data points to annual returns of 8.3% for Sky, below the 9.7% for the FTSE100 Index and 12.7% for the FTSE250 Index.
- 3.7 Accordingly, based on this preliminary analysis, total shareholder returns from Sky over this period since flotation do not appear to have been excessive compared to the stock market as a whole. Although Sky's cost of capital would have varied during this period, it seems unlikely that returns of this magnitude would significantly exceed (if they exceeded at all) the returns demanded by shareholders (or, more formally, Sky's "Cost of Equity").
- 3.8 Under the standard approach to estimating the cost of capital, the capital asset pricing model, for example, the risk free rate observed during the period and market risk premium which might be estimated as applicable for that period would together account for a very significant proportion of Sky shareholders' observed returns, even before taking into account company specific risks.
- 3.9 This analysis is based upon the average annual returns between two points in time, starting at flotation and ending in 2007. Clearly, if we considered other investors that may have bought and sold investments at different times within this period, the equivalent annual returns or cost of capital may be lower or higher than this analysis suggests. There are some periods during which investors would have observed very high returns and other periods where investors would have received low or negative returns. Likewise, as shown in Figure 3 below, there are periods during which investors in Sky would have out-performed the market indices.





Source: Thomson Datastream

- 3.10 It is also important to note that this analysis only measures total shareholder returns in the post flotation period. In the event that at or before flotation Sky was, or was expected in the future to be, in a position to make super-normal returns in excess of its cost of capital, the returns generated from this position would have been incorporated into its valuation at the time of the float. Under these circumstances, capital appreciation since flotation would reflect only *changes* in shareholder expectations of such super-normal returns and would not identify any such expectations that were already incorporated into the value at flotation.
- 3.11 An initial analysis of Sky's valuation at flotation in 1994 suggests that the new shareholders paid a significantly higher sum for the company than the nominal amounts of money that had been invested by the previous shareholders in building the business up to that point.
- 3.12 However, new shareholders at the flotation would have been expected to value the company not based on historical (sunk) costs, but on the anticipated net present value of all future shareholder returns that they could expect to receive. Furthermore, the investment by the original shareholders in the companies which eventually merged to form Sky may well have been regarded as high risk by the providers of the capital and under circumstances of success, high returns on the investment made prior to flotation and/or the investment made prior to the merger of Sky's predecessors might be appropriate.
- 3.13 Accordingly, the fact that Sky's implied market value upon flotation was higher than the sum of investment required to fund the business up to that point is not in and of itself evidence that shareholders were anticipating future super-normal returns in the future which would have been in excess of the cost of capital.

- 3.14 As noted in paragraph 1.5 above, analysis of shareholder returns will incorporate returns on investments which might be unrelated to the UK pay TV market and/or discontinued. In Sky's case, one of the most significant of these was its investment in the German pay TV operations of Kirch Gruppe.
- 3.15 An ex-post adjustment to reflect the losses incurred by Sky in this ultimately unsuccessful investment in order to examine returns in isolation from this particular activity would be likely to raise the IRR by approximately one percentage point if assessing the IRR on an investment by a shareholder at flotation which was held until the present.

Comparison of enterprise value to asset value

- 4.1 One further piece of analysis which can be undertaken in assessing expected returns is to compare the enterprise value implied by the market for Sky with the current replacement cost of Sky's assets. Enterprise value represents a company's market capitalisation (the equity value) plus the additional value implied by the value of the company's debt.
- 4.2 This assessment (sometimes referred to as "Tobin's q") is based upon the premise that if the market values the company at a level which is higher than the cost that would need to be incurred in order to build it, then the difference is attributable to super-normal profits being earned by the company. These returns could be attributable to characteristics of the market which mean the company has market power through, for example, barriers to entry.
- 4.3 Comparing the book values of Sky's assets, excluding goodwill and net of current liabilities, with its implied enterprise value, whether at flotation or at present, suggests that Sky's enterprise value is significantly greater than would be implied by its accounting balance sheet. As Figure 4 shows, the extent of this differential has varied significantly over time. The ratio of enterprise value to balance sheet value is approximately 7:1 based on 2007 values.



Figure 4 Comparison of Sky market to book value from flotation to 2007

Source: Thomson Datastream/Ofcom estimates

4.4 Ofcom compared Sky's ratio of enterprise value to book value with those of the other firms which constitute the FTSE 100 index. These figures showed a significant variation in values, with Sky's ratio in the upper quartile.

- 4.5 However, book values are sometimes considered poor estimators of the economic value of a company's assets and may therefore not be adequate proxies of the current replacement costs of the company's assets. This issue is particularly acute where the company has significant intangible assets which are not captured on the balance sheet. Similarly, the book value of a company's assets will tend to understate the economic value when expenses are written off in a single period for accounting purposes whilst the economic value of such expenditure may extend beyond that period. A better reflection of the economic value of such assets would therefore be to capitalise such expenditure and amortise it over time, recognising that some of the benefits of the expenditure are experienced in subsequent periods.
- 4.6 Moreover there are particular reasons why the unadjusted market to book value ratio will be overstated in Sky's case, as compared with other companies. Specifically, we are aware that there are potentially a large number of assets pertaining to Sky which may have economic value but which are not reflected on its accounting balance sheet. Although this is likely to be true for the majority of FTSE100 companies, the extent of the undervaluation in Sky's case is likely to be particularly large.
- 4.7 For example, marketing costs are expensed in the profit and loss account but may have significant enduring value through the creation of a lasting marketing "asset" such as a brand or brand value. There are a large number of ways in which such an "investment" might be valued, amortised and reflected on the balance sheet if the aim were to reflect the asset's economic value. Including any value for such an asset would reduce the extent to which Sky's market value exceeded the replacement cost of its assets.
- 4.8 Similarly, Sky's subscriber base might be thought of as an "asset" which is not reflected on its balance sheet, but which is likely to be seen as a key source of value by its shareholders. This is because it is access to this subscriber base which provides significant revenue streams for the company. Generating an independent bottom-up estimate for the value of such subscribers which is then capable of being compared to the implied market valuation of such an asset is potentially problematic, although in a competitive market, it would be expected that the value of such an asset should be approximate its cost.
- 4.9 Notwithstanding these concerns, it is clear that a significant proportion of the gap between Sky's recorded asset value and the market implied enterprise value is likely to arise as a result of the exclusion of any value for intangible assets on the balance sheet.
- 4.10 An attempt to capture some estimate of this value can be made by capitalising all marketing expenditure undertaken by Sky during the period, as disclosed in Sky's annual reports. This expenditure incorporates all spending undertaken to develop both the Sky brand during the period and the cost of subsidising consumer equipment during the period since flotation. In an attempt to bring the value of this expenditure into current terms, the value of this spend is inflated by 3% for each year between the year of account in which the expense was recorded and 2007. This assumption appears relatively generous given that the replacement cost of set top boxes has fallen significantly over this period, notwithstanding that the cost of other forms of marketing may have risen.
- 4.11 In principle, Ofcom believes that such capitalised expenditures should be amortised over time, reflecting the likelihood that such investments are unlikely to provide benefits into perpetuity. However, for the purposes of this analysis, Ofcom has not amortised the value of these expenditures and as such considers that the results

presented represent an upper bound estimate of the significance of these intangibles in relation to the comparison between asset value and enterprise value.

4.12 The adjusted book value, taking into account the adjustments set out above, is presented in Figure 5 below. On this basis of calculation, the ratio of enterprise value to the adjusted balance sheet value is approximately 1.7:1, based on 2007 values.

Figure 5 Comparison of Sky market to book value from flotation to 2007, including adjustments



Source: Thomson Datastream/Ofcom estimates

- 4.13 In conclusion, Ofcom notes that on an unadjusted basis, Sky's enterprise value appears to be well in excess of the asset values recorded on its Balance Sheet to an extent that puts it in the upper quartile of the ratios for the FTSE100 firms. In Sky's case however the ratio looks particularly likely to be an overstatement of the true picture, as a high proportion of its assets may not be reflected in its book value. Although this is not a unique situation among the FTSE 100 firms we compared Sky to, the ratio for at least some of these firms would be likely to be less inflated than for Sky because they would be likely to have fewer intangible assets.
- 4.14 Although, with a ratio of 1.7:1, Sky's market valuation still exceeds the asset valuation by a significant amount, this also appears to be true for a significant number of other companies. Whilst there are large numbers of other adjustments which could be made to each company in order to better equate book value and replacement costs, making them in a robust manner would be problematic.