

Financial analysis: Do IFRS standards signal the end of the ROCE?

By Bruno Husson⁽¹⁾

Financial analysts are - or should be - amongst the most assiduous readers of the consolidated accounts published by listed companies, quite simply because this reading is one of the key components of their profession. By neglecting to do so at the height of the stock-market frenzy in 1999-2000, several star analysts had their fingers burnt and tarnished the credibility of an entire profession.

More recently, examples of large scale accounting malpractice, as revealed by Enron-type stock-market scandals, have shown the difficulties faced by financial analysts and the importance of the issues underlying thorough analysis of accounting data.⁽²⁾ In other words, such events militate strongly in favour of a return to established professional principles which dictate that a meticulous examination of previous accounting statements represents the obligatory starting point for any analysis.

In such a context, the new IFRS accounting standards, which shall apply to any listed European company from 2005 onwards, seem to arrive at just the right moment, as they are primarily designed to improve the quality of the financial information that is available to investors with regard to their investment choices. Furthermore as their very role is to shed light on these choices, financial analysts should be very pleased about the arrival of these new standards. However, the widely-voiced scepticism towards the IFRS clearly shows that this is not the case.

The reasons for this situation are explained in this article, which analyses the impact of the IFRS on the calculation and interpretation of one of the most emblematic ratios in modern financial analysis: the ROCE (Return On Capital Employed). Compared to the WACC (Weighted Average Cost of Capital), the ROCE is an indicator of added value creation; for this reason, it has become a favourite communications tool for the leaders of listed companies. Compared to the growth rate, the ROCE also measures the potential of an activity to generate a positive free cash flow and for this reason, it constitutes a precious tool for estimating a company's market value. In both cases, the relevance of the message depends to a great extent upon the accounting conventions that are used to determine the components of the ratio. In this regard, it has to be acknowledged that IFRS accounting standards will tend to muddy the message...if not render it completely inaudible.

(1) Bruno Husson is the head of Close Brothers Fairness, a company specialising in financial evaluation and "fairness opinions", which was created in association with the Close Brothers SA merchant bank. He is also an Affiliate Professor of the HEC School of Management (Finance Department) and a founder member of the *Société Française des Évaluateurs* (French Financial Valuation Society - SFEV). This article was included in the compendium of opinions issued by the AFG (French Financial Management Association) and the FFSA (French Federation of Insurance Companies) in December 2004 under the title "Les points de vue des investisseurs sur l'adoption des normes IFRS" (Investors' viewpoints on the adoption of IFRS standards) and was published in the *Option Finance* journal (no. 841) in July 2005.

(2) See also "L'information financière en crise – Comptabilité et Capitalisme" (Financial information in crisis – accounting and capitalism) by N. Véron with M. Autret and A. Galichon, published by the Éditions Odile Jacob, May 2004

ROCE and the creation of value

Financial analysis has undergone many changes over the past thirty years or so. As it has emerged from the closed world of credit risk analysis, it has redefined its aims and extended its range of tools in response to broader concerns than those of the commercial banker. Financial analysis has thus been gradually transformed in order to integrate the preoccupations of capital investors, be they institutional investors in pension funds or insurance companies, portfolio managers for private banking services, or indeed, professional investors in private equity (venture capital, growth capital and LBO). As shareholders began to regain the central position that they had virtually relinquished in favour of creditors, the central focus of financial analysis shifted from the liabilities side of the balance-sheet, with the examination of financial structure, to the assets side, with the assessment of the return of the portfolio of activities.

The best illustration of the Copernican revolution that has transformed financial analysis since the end of the 1960s is provided by the current definition of “financial balance”. This stipulates that a company in good financial health is no longer a company that is creditworthy on the basis of having a sound balance-sheet that conforms to the rules of financial orthodoxy imposed by commercial bankers, but a company which creates value because the expected return on the capital employed⁽³⁾ is greater than the lenders’ required return (i.e. the cost of the capital employed).

At the start of the 1990s, as a logical extension to the aforementioned evolution of financial analysis, the notion of value creation was updated in a very snappy way by the *Stern & Stewart* consulting firm under the registered name of “Economic Value Added - EVA[®]”. In reality, the two underlying concepts of the return on and cost of capital employed have long been fundamental to the investment selection principles taught in the corporate finance manuals. In fact, the novelty resides more in the intensive use of both of these concepts by financial analysts thanks to analytical tools whose relevance varies according to the inevitable discrepancies that exist between a theory and its operational interpretation.

The expected return on capital employed depends upon the desired cash flows for the investment portfolio. This is a general concept which relates to the return on the capital invested by all capital suppliers (shareholders and creditors) throughout the company’s life span, i.e. a seemingly limitless time span which reflects the legal status of shares. The concrete expression of this concept is logically based upon the accounting data published by the company. It takes the form of a ratio which relates the economic performance achieved over a given period (generally one year) to the amount of capital employed at the start of the period: this ratio is universally known under the acronym ROCE (*Return On Capital Employed*). The very structure of such a ratio means that it cannot embrace the dual temporal and normative dimensions of the underlying concept; indeed, it applies to a given year and its current level may differ from the level that is expected in the medium to long term.

The required return on capital employed depends upon time value of money (or risk-free interest rate) and the uncertainty which prevails over future cash flows. It corresponds to the remuneration normally required by an investor for financing a project that is similar in terms of maturity and risk to the investment portfolio of the company in question. This remuneration incorporates time and risk factors without clearly explaining how the risk relates to time. The practical expression of this concept is the Weighted Average Cost of Capital (WACC). In practice, estimating this rate is a real headache for analysts, as it requires them to find operational

(3) The notion of invested capital (otherwise referred to as capital employed) is based upon a schematic corporate balance sheet, which is currently widely used by financial analysts. It lists fixed assets and working capital needs (i.e. the investments required for operating the business) on the assets side, and shareholders’ equity and net financial debt (i.e. the capital provided by all lenders, shareholders and creditors), on the liabilities side.

responses to problems as complex and varied as the definition, measurement and cost of the risk, or the impact of financial debt upon asset value. The resulting confusion is illustrated by the fact that the same company is rarely given the same WACC by competing teams of analysts on a given date.⁽⁴⁾

Due to the aforementioned discrepancies between concepts and analytical tools, the message given about the creation of value based on an instantaneous comparison of the respective levels of ROCE and WACC, very often falls flat.⁽⁵⁾ Even when this is not the case, this type of message proves, above all, to be sterile with regard to the valuation (and investment consulting) role mentioned below, which, in theory, remains the primary justification for the financial analyst's professional existence. The reason for this is that stock market prices already incorporate the value that is likely to be created by current or future investments, to such an extent that all that matters are the surprises - good or bad - which will gradually be revealed over time, with regard to the value that has actually been created by the investments made.

ROCE and the generation of positive free cash flows

The primary function of the "sell-side" financial analyst is to formulate investment recommendations (regarding purchasing, selling or conservation) aimed at the fund managers, institutional clients or prospects of the stock brokering company that he or she represents. To this end, the analyst must first develop a firm belief in the value of the securities in question before comparing the estimates obtained with actual stock market prices. Today, this valuation process is primarily based on discounting free cash flows (DCF method), because analogical valuation methods (comparable analysis based on a sample of listed companies or on a sample of recent transactions) are often disqualified due to the lack of available data or the circular nature⁽⁶⁾ of the valuations carried out.

For financial analysts, the main challenge posed by the DCF method is how to calculate the free cash flows that are likely to be generated by the company's portfolio of activities. In the short term, i.e. over a horizon that generally covers the current fiscal year and the next two fiscal years, the estimation of these free cash flows is based upon the creation of a complete set of projected financial statements. Beyond this period, the production of detailed forecasts is certainly possible thanks to the magic of spreadsheets, but this is a somewhat artificial exercise which undermines the credibility of the valuation. For all that, it is also unsatisfactory to concentrate exclusively on the free cash flows for the next two or three years and consequently to calculate a terminal value over a very short horizon. This would make the weighting of the terminal value predominant, to such an extent that the valuation would appear to be based upon very shaky foundations.

Hence the interest of an alternative solution, which has now been adopted by a growing number of appraisers. This consists of adding a supplementary period to the visibility period, in which the free cash flows are determined by a simple extrapolation of the two key parameters that condition the future free cash flows, i.e. the return (ROCE) and growth (g) of the capital

(4) On this subject, see: "Evaluation financière: A-t-on encore besoin du WACC ?" (Financial valuation: Do we still need WACC?) by B. Husson, published in *Les Echos* on 28 October 2004, special edition: "L'art du management" (The art of management) produced in collaboration with the HEC Group

(5) According to this analysis, the value created over a given fiscal year is measured by the following formula:
Value created = capital employed * [ROCE - WACC]

(6) Let us consider that a company, A, is valued on the basis of the multiples displayed by the two comparable listed companies B and C. Company B may, in turn, be valued according to the multiples displayed by the two comparable companies C and A. Likewise, company C ...

employed.⁽⁷⁾ These two parameters seem to have a contradictory impact on the type and amount of free cash flows. Thus, thanks to the renowned strategic matrix developed by the *Boston Consulting Group*, it is well known that so-called “cash cow” activities (i.e. which generate large amounts of cash) are activities that combine a high level of profitability with low levels of growth, while activities considered to be “dilemmas” (because they consume a lot of cash), are fast-growing developing activities which are characterised by still modest levels of profitability. In reality, the impact of growth on free cash flows, and consequently upon the market value of an activity, is not so easy to establish.

There are two reasons for this difficulty. Firstly, it is very rare for a change in growth to have no impact upon return. Thus, for activities with “significant operational leverage” characterised by a large proportion of fixed costs (e.g. the hotel industry), any increase in income has a diminishing effect upon the economic margin and thus upon the return on capital. Next, there is no truly significant relationship between free cash flows and growth unless the analysis is based upon the long term and not just upon a limited horizon of a few years. Growth is never eternal: while it is true that the major growth phase generally coincides with a significant need for capital, the mature phase which will sooner or later follow is characterised by the contrasting appearance of very large amounts of positive free cash flows (provided, of course, that the arrival at maturity is not accompanied by diminished profitability due to increased competitive pressure, for example). Thus, subject to examining an activity throughout its entire presumed life span, growth has a positive impact on the total amount of future free cash flows and thus upon the market value of this activity.

Because it helps to rationalise the medium-term extrapolation of cash flows generated by an activity and thus gives credibility to the estimates provided by the DCF method, the ROCE constitutes an extremely precious tool for the appraisal of companies. And it is indeed this second type of use of the ratio focused on the concrete notion of free cash flows, rather than the first approach focused on the abstract concept of value creation which, in our eyes, justifies the significant interest shown in this ratio, not only by financial analysts, but by the entire financial community.

ROCE and accounting standards

However it is used, ROCE remains a ratio whose extrapolation or calculation is based upon financial statements. Because of this, the level of the ratio and its evolution depend largely upon the accounting conventions that are used to determine the value of the elements used in its calculation, i.e. operating income as the numerator and capital employed as the denominator. In order to illustrate this dependency and then assess how the new IFRS accounting standards might potentially affect the relevance of the ROCE, let us consider the following example which simulates the switch from traditional historical cost-based accounting to an accounting system in which all assets and liabilities are assessed according to their market value (“full fair value accounting”).

The activity in question requires no investment on fixed assets (the required structures or equipment are hired), but capital is required to finance working capital needs. The capital employed, which has been stable for two years, amounts to €100K; the expected growth, which is very high over the first two years of the period in question (a threefold and then twofold increase in capital employed), diminishes rapidly to become zero as of the fifth year. The return on investment is considered to be constant and equal to 20%. Nevertheless, there is a time delay of

(7) The free cash flows generated by an activity over a given fiscal year are obtained using the following formula:

$$\text{Free cash flows generated by the activity} = \text{capital employed} * [\text{ROCE} - g]$$

approximately 24 months, meaning that the investments made during year “n” do not generate the expected normative result until the start of year “n+2”. The return required by the capital contributors (WACC) amounts to 8%.

Table 1 below illustrates the expected evolution of the main parameters of this activity over the next five years. Supposing the life span of the activity to be infinite, the normative year gives the parameters to be considered after the fifth year.

Table 1: Basic characteristics of the activity

Year		1	2	3	4	5	normative
Capital employed at the beginning of the year	CE_{t-1}	100.0	300.0	600.0	900.0	990.0	990.0
Capital employed at the beginning of the year	CE_t	300.0	600.0	900.0	990.0	990.0	990.0
change over the year (%)	g	200.0%	100.0%	50.0%	10.0%	0.0%	0.0%
Return on investments	r_t	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
Net operating profit after tax - NOPAT	$R_{a,t} = r_t \cdot CE_{t-2}$	20.0	20.0	60.0	120.0	180.0	198.0
Free cash flows	$F_{a,t} = R_{a,t} - [CE_t - CE_{t-1}]$	-180.0	-280.0	-240.0	30.0	180.0	198.0
Cost of capital	Wacc	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%

The advantage of and limits to the two uses of ROCE described above are quite clearly illustrated in Table 2 below, which relates to the traditional framework of historical cost-based accounting.

Table 2: ROCE and cost-based accounting

Year		1	2	3	4	5	normative
Roce	$R_{a,t} / CE_{t-1}$	20.0%	6.7%	10.0%	13.3%	18.2%	20.0%
Measure of value created over the year	$[Roce - Wacc] \cdot CE_{t-1}$	12.0	-4.0	12.0	48.0	100.8	118.8
Measure of free cash flows generated over the year	$[Roce - g] \cdot CE_{t-1}$	-180.0	-280.0	-240.0	30.0	180.0	198.0

So much for the role of ROCE as a tool for measuring the value created over a given period. Due to the time lag of the return on investments and a high level of growth during the previous year, the comparison between ROCE and WACC for the second year (6.7% and 8% respectively) shows a destruction of value (€4K), even though the investments made during the period actually create value (expected return of 20% compared with a required return of 8%). Due to lower growth, the same error is not reproduced in subsequent years. Nevertheless, due to the delay in the return on investments, it is still the case that the given measurement of the creation of value is undervalued until the normative year, when all of the investments produce the normative return of 20%.

However, such limits are not found with the alternative use of ROCE, as described above. For all of the years in question, comparing ROCE with g , the growth rate of the capital employed, reveals the free cash flows produced by the activity and which are calculated directly in Table 1.

Table 3 below illustrates the same uses of ROCE, but this time in the context of a financial reporting framework in which all assets and liabilities are assessed according to their market value. In such a context, it is important to redefine not only the valuation of the capital employed (given by the current value of the future flows at the rate of return required by the capital suppliers), but also the measurement of the operating result (given by the cash flow generated during the period plus the variation in the market value of the capital employed during the same period).

Table 3: ROCE and full fair value accounting

Year		1	2	3	4	5	normative
Market value at the beginning of the year ⁽¹⁾	$V_{a,t-1}$	1 231.8	1 510.3	1 911.1	2 304.0	2 458.3	2 475.0
change over the year	g'		22.6%	26.5%	20.6%	6.7%	0.7%
Adjusted operating profit	$R'_{a,t} = F_{a,t} + [V_{a,t} - V_{a,t-1}]$	98.5	120.8	152.9	184.3	196.7	198.0
Roce'	$R'_{a,t} / V_{a,t-1}$	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Measure of value created over the year	$[Roce' - Wacc] \cdot V_{a,t-1}$	0.0	0.0	0.0	0.0	0.0	0.0
Measure of free cash flows generated over the year	$[Roce' - g'] \cdot V_{a,t-1}$	-180.0	-280.0	-240.0	30.0	180.0	198.0

(1) Net present value, using a discount rate of 8%, of future free cash flows over an indefinite horizon

As far as measuring value creation by comparing ROCE and WACC is concerned, the findings are conclusive: the exercise becomes totally irrelevant. Indeed, as shown by the data in Table 3, if assets are accounted for at their market value, ROCE and WACC coincide and no indication of the value created by the capital employed can be inferred by comparing the two rates. In other words, when assets are accounted for at their market value rather than at their original historical cost, it is totally pointless to make any judgements about the value created by the investment policy on the basis of the level of ROCE itself or according to the evolution of the ratio over time.

On the other hand, on the basis of figures which have been totally modified by the change of financial reporting framework, the comparison between ROCE and the growth rate of the capital employed (respectively referred to as *Roce'* and *g'* in Table 3) remains perfectly valid and can once again be used to reveal the free cash flows for all years of the period in question.

The advent of the IFRS accounting standards does not signify the immediate creation of an accounting system in which all assets are valued at their market value, even if this does indeed seem to be the ultimate objective of the IASB standards developers. Indeed, at the current development stage of the IFRS, the principle of a “fair market value” accounting system only applies to certain categories of assets and liabilities or under special circumstances. This results in the creation of hybrid financial statements and a ROCE which now becomes inappropriate, not only for understanding the creation of value but also for measuring the generation of free cash flows. The IFRS 3 standard, which applies to the accounting of external growth operations, provides a good illustration of this.

Under the terms of this standard, the acquired assets must be accounted for at their “fair market value” (acquisition cost or purchase accounting method) and it is now forbidden to record them in the acquirer’s balance sheet at their historical original cost shown on the target’s balance sheet (pooling of interest method). Consequently, ROCE becomes a heterogeneous ratio due to the mixed nature of its denominator, consisting partly of the capital employed of the acquiring company, which remains valued at its original historical cost, and partly of the capital employed of the acquired company, which is now valued at its market value (as defined by the price paid by the acquiring company). For this reason, extrapolating the historical ROCE and comparing it with the anticipated growth rate with a view to understanding the future cash flows, leads to erroneous conclusions.⁽⁸⁾

(8) This does not apply to the “pooling interest” method because the ratio remains homogeneous. In theory, to restore this homogeneity, it is simply a question of adjusting the book value of the capital employed by subtracting the goodwill created by external growth. However, such an adjustment is certainly not facilitated by the IFRS framework, which requires the most rigorous allocation of the initial goodwill to different categories of assets (brands, patents, constructions, etc.) and allows for the allocation of residual goodwill to different business units.

This latter conclusion is illustrated in Table 4 below, which uses the previous example but assumes firstly that the increase in the capital employed recorded over years 1 to 4 (cf. Table 1) originates exclusively from external growth, and secondly, that all of these additional investments are accounted for at their market value, as stipulated by the IFRS 3 standard. For this reason, the capital employed is valued in a hybrid fashion: partly on the basis of historical costs for investments existing at the start of year 1, and partly on the basis of market value for all subsequent investments. At the same time, the usual definition of operating profit is retained.

In such a context, the measurement of created value given by comparing ROCE with WACC no longer has any relevance, except for the first year in which the capital employed is accounted for on the basis of historical costs. At the same time, in contrast to the two contexts examined previously, the comparison between ROCE and the growth rate of capital employed (respectively referred to as "Roce" and "g" in Table 4) is no longer sufficient to determine the free cash flows, except in one specific case – when growth has completely stopped (a situation described by the normative year in Table 4). This is of little practical use when performing an evaluation.

Table 4: ROCE and the "hybrid" financial reporting framework

Année		1	2	3	4	5	normative
"Hybrid" capital employed	CEH _{t-1}	100.0	1 260.3	1 661.1	2 054.0	2 208.3	2 225.0
change over the year	g		1160.3%	31.8%	23.7%	7.5%	0.8%
Roce"	R _{a,t} / CEH _{t-1}	20.0%	1.6%	3.6%	5.8%	8.2%	8.9%
Measure of value created over the year	[Roce" - Wacc] . CEH _{t-1}	12.0	-80.8	-72.9	-44.3	3.3	20.0
Measure of free cash flows generated over the year	[Roce" - g] . CEH _{t-1}	-1 140.3	-380.8	-332.9	-34.3	163.3	198.0

ROCE: the subject of all types of accounting malpractice?

Even though the arrival of the IFRS standards may cast serious doubt over the relevance of ROCE, we speculate that this ratio will remain a favourite communications tool for the heads of listed companies for a long time to come. The reason for this is easy to understand: the ROCE is a simple but powerful concept, which, after taking some time to become accepted, has now become so established within groups that it is sometimes used as a key parameter for measuring the performance of operational managers, with a direct impact on the calculation of the variable component of their pay.

Combined with the fact that the new accounting standards, which are very clear and strict when dealing with principles, are often vague with regard to their terms of application, such an observation signifies an increased risk of accounting malpractice. In this respect, we can speculate that companies will use the relative flexibility allowed by the transfer period for the financial reporting framework (cf. IFRS 1) as an opportunity to prevent any untimely reduction of ROCE (or even to improve the ratio), rather than to improve the internal consistency of their published financial statements or to accelerate the convergence of these statements with those of their foreign (especially American) competitors. It would therefore be surprising if, as allowed by the IFRS1 standard, listed groups decided to restate the external growth operations carried out prior to 1 January 2005 according to the purchase accounting method. Moreover, as a consequence of the depth of changes implied by the IFRS standards, it is probable that the restating operations or adjustments which are currently being performed by financial analysts with a view to restoring the original power of the ROCE, especially as a tool for extrapolating the free cash flows, may soon be impossible to implement.

In fact, the overzealous desire to enlighten investors by seeking to offer them self-contained information about the market value of the companies in which they have invested has paradoxically complicated the work of financial analysts whose very role is to enlighten the choices of these same investors, and all this while taking the risk of providing information that could be obsolete even as it goes to press. At this stage, before the release of the first IFRS-standard consolidated accounts of French groups, it is certainly too soon to come to a definitive judgement. Changes are always possible, as shown by the modifications that were finally made to the IAS 39 standard concerning the reporting of financial instruments. But above all, the quality and depth of information that should be published in the appendices, especially in application of the IAS 14 standard concerning segment reporting, will be decisive in deciding the future of ROCE as a favourite tool for financial analysis and communication.