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## **Commentary on the Cement Profitability Analysis**

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### *Objectives*

This is a 'high level' commentary on the CC profitability analysis, in the sense that it concentrates on points of principle rather than attempting to grapple with the details of the cement industry, upon which the author is not qualified to comment.

### *Theoretical Underpinnings*

The analysis is grounded in the Commission's *Guidelines* which in turn are justified by the analysis of Edwards, Kay and Mayer (1987) (EKM), particularly Chapter 4, section 4.4 onwards. In pp. 58-59, EKM discuss the application of their approach to the identification of monopoly power. They demonstrate rigorously that a particular measure of the *ex post* accounting rate of return (ARR) is suitable for comparison with the cost of capital, for this purpose. However, they stress the importance of separating monopoly profits from the consequences of unfulfilled expectations (of which impairment losses are an example). They also acknowledge other measurement difficulties.

EKM's ARR is based upon two critical accounting conventions. First, all assets (and, where relevant, liabilities) are measured on a Value to the Owner basis (often referred to as Deprival Value) in the balance sheet. Second, all gains and losses recorded in the balance sheet (other than transactions with owners, such as dividend payments) are included in the profit measure. Thus, the income measure is 'comprehensive income' and the income statement articulates with the balance sheet, the income in the former reconciling with the change in net assets in the latter.

These two conditions must be fulfilled if EKM is to be cited as the authority for the analysis, and most of the criticisms of the cement analysis relate to them, and particularly to the problem of implementing Value to the Owner (e.g. the measurement of the Modern Equivalent Asset).

The Byatt Report (1986) is cited by the CC and by certain respondents. This provides a very useful examination of the practical application of the Value to the Owner rules, and particularly the measurement of replacement cost on a Modern Equivalent Asset (MEA) basis. The Report is aimed at a different use, the monitoring of nationalised industries, as several commentators have pointed out (e.g. Hanson) but that does not invalidate its relevance as an analysis of practical measurement issues (e.g. depreciation profiles), which tend to be treated more lightly by EKM.

### *The Competition Commission Analysis for Cement: Methodology*

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The accounting figures, based on historical cost, have to be adjusted to a Value to the Owner basis by estimating the new MEA cost of plant and equipment (based on a real case study) and then adjusting for accumulated depreciation to reflect the age of the plant held by each firm.

MEA of new plant is based on the estimated cost in 2007 of a plant with a given standard capacity. This cost is contended by the parties, which demonstrates the approximate nature of the estimates. The capacity of the firm is estimated as its previous year's output, plus a 30% margin, and the MEA of the firm's assets is assumed to be that of the number of standard plants required to produce it. Impairment is measured by the annual change in the number of plants required. These assumptions also are contestable, although the result is some rather severe impairments (see below) and this fact may have encouraged commentators to be less critical than they could have been.

The cost is then depreciated using 3.5% annual reducing balance depreciation: again, both pattern and rate are contentious.

The cost is uplifted for future years by 2.5% annually, to reflect rising nominal prices. Again this is an assumption, contested by some.

### *Comments on the Competition Commission Analysis*

- **Impairment and subsequent asset values**

The calculation of net assets subsequent to impairment should follow the comprehensive income/articulation principle required by EKM.

At present, impairment is not deducted from profit for a period but it is deducted from net assets at the end of the period, thus raising the rate of return in the following period by lowering the net asset base. This meets the EKM criterion if we are looking at each year in isolation, but would be inconsistent with it if we were doing a multi-year single rate of return calculation over the full period. The CC analysis appears not to do a full period calculation, but it does average annual returns over the period which is a proxy for such a calculation.

To achieve consistency, either impairment should be deducted from both profit and subsequent net assets, or it should not be deducted from either, for the purposes of calculating the accounting rate of return. This point is made clearly in the Hanson submission (14.4). It might be desirable to do both calculations, to provide some indication of the sensitivity of the results to impairment value.

- **Should Impairment be deducted from Profit?**

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The next question is which of the rate of return measures is more appropriate: that recognising impairment or that ignoring it?

The case for deducting impairment from profit (and therefore from subsequent net assets) is that it is an unavoidable cost of running a risky business. Investors understand that there is a risk of impairment (effectively, a change in the useful life of an asset due to unforeseen events) and this will affect their view of the prospective returns on their investment. It is therefore one of the ongoing costs of supply.

The case for not deducting impairment from profit is that it is in the nature of a windfall loss, resulting from what EKM describe as 'unfulfilled expectations'. It does not represent a cost of supply that a new entrant would anticipate, because it is an exceptional item which would not be expected to recur and would therefore not be anticipated. This argument has particular force during the period under review, which saw a sharp decline in demand due to an exceptional economic recession.

Hence, it might be better to report two rates of return, one after deducting impairment costs and the other ignoring them, to indicate sensitivity of the rate of return to their effect. The case for doing this is reinforced by the unreliability of the impairment estimates, which means that they may be over-stated in the CC's current analysis (see below), so that the post-impairment measures may be misleading.

- **How should Impairment be calculated?**

The CC analysis adopts a very severe method of calculating impairment. It assumes that all fluctuations in output lead to a change of valuable (MEA) capacity in the following year. However, cement plants can have a prospective life of 50 years or more and it seems implausible that plant will be written off entirely as a result of one or two unexpectedly bad years. Hence the CC method seems to be unduly harsh.

An alternative would be to record as impairments only those plants that were permanently retired during a year, i.e. actual lost capacity rather than notional excess capacity.

This would ignore write-downs in value of operational plant that was under-utilised but not retired. These might be estimated, if the data are available, by using the impaired values used in company accounts. These should represent the recoverable amount of the asset, which is also, in the case of an impaired asset, its Value to the Owner.

- **How should depreciation be calculated?**

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The present CC analysis opts for reducing balance depreciation. For the purpose of measuring economic costs, we should use economic depreciation. This takes account of finance costs, which are particularly important in the case of long-lived assets such as cement plants. If the benefits are a constant stream, economic depreciation writes off the asset slowly at first and at an increasing rate over time (as illustrated in the Byatt Report).

If the benefits decline over time, this justifies a reducing balance pattern only if the decline is sufficient to dominate the effects of financing costs. It is a common argument for straight line depreciation that it represents a practical compromise between the two effects: declining benefits being offset by higher financing costs as the asset ages, of straight line (e.g. Byatt Report ).

Of course, this offsetting effect is unlikely to be exact, and the popularity of straight line in practice owes more to its simplicity than its theoretical superiority.

However, respondents have argued that the benefits of cement plants do not decline with age, e.g. running costs are fairly constant, that life is long (hence financing costs are material) and that older plants (particularly those of Lafarge) are over-depreciated in the CC analysis. It might therefore be helpful to re-work the CC estimates using straight line depreciation, at least as a sensitivity exercise.

- **How should intangible assets be treated?**

Conceptually, 'proper' intangible assets should be included in the balance sheet. This would certainly include all intangibles that had a separate market value and those that had a clearly measurable cost which was justified by measurable benefits. It would not include blanket 'goodwill' figures arising on acquisitions, which can be dominated by measurement errors, over-payments and possibly monopoly rents. This view is consistent with the CC methodology.

In the cement industry, it seems unlikely that there will be important intangible assets such as intellectual property (important in high tech industries such as pharmaceuticals) or brand names (important in consumer industries such as Coca Cola). Hence, the rather stern approach of the CC, excluding intangibles, is substantially justified.

However, the respondents do, justifiably, point out that various start-up costs create intangible assets. It is obviously the case that a new entrant would have to assemble and train a workforce, devise working practices, and possibly have a commissioning period when plant is below full capacity (I do not know whether this is built in to the estimates of plant cost). This should not have much effect on the profit and loss

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account because the absence of depreciation of intangibles is compensated substantially by renewals (recruitment of new staff, upgrading of computer systems etc.) which are charged to profit and loss but would not be so under the capitalisation approach (this argument appears in the CC analysis). It may lead to a lower net assets figure in the balance sheet (and therefore a higher rate of profit) but I doubt if its value there would be material, especially as some may already included in tangible asset values (e.g. commissioning costs in plant values, software costs in computer systems).

Hence, I broadly support the CC approach to intangibles, especially as it is an area where measurement is extremely unreliable.

### **Emissions Permits**

The Government's emissions trading scheme is basically an attempt to restrict emissions by pricing them through a traded permit system. It is designed to affect the ongoing costs (or revenues if emissions are lowered) of the business and there is no obvious reason why it should not be treated like any other cost or revenue item, i.e. it should be included in the profit and loss account.

The scheme might be regarded as an extraordinary windfall item if it was unexpected at the beginning of 2007 and not expected to continue in the future, so that it was not a continuing cost of supply. However, I do not believe that either of these conditions holds.

### **Conclusion**

Subject to the detailed comments above, I believe that the CC Analysis is consistent with the guidelines and with the conceptual framework of Edwards, Kay and Mayer and the implementation guidance in the Byatt Report. I am not qualified to comment on matters specific to the cement industry, such as the cost of building and operating cement plants and their useful lives.