

Fair value in financial reporting: problems and pitfalls in practice – a case study analysis of the use of fair valuation at Enron

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Abstract

This paper contributes to the debate on the use of mark to market accounting in financial reporting by means of a case study-based examination of the use of mark to market accounting by Enron Corp. in the years immediately preceding its collapse. Set in the context of historical developments in and theoretical discussion upon asset valuation and income measurement, the case study highlights: (i) the ease with which Enron was able to ‘monetise’ physical assets so as to bring them within the remit of mark to market accounting; (ii) the unreliability of valuation estimates provided by independent third parties; (iii) and the asymmetry between management desire to recognise mark to market gains through the income statement in contrast to their desire to avoid recognising mark to market losses.

Notwithstanding the particular features of the Enron case, it is argued in the paper that these issues are generic and should be taken into account by standard setters as they move toward encouraging more widespread use of mark to market accounting under IAS 39, SFAS 157, and previous statements, and by other regulators with an interest in the provision of financial information to the capital markets, such as the SEC in the US, the FSA/FRC in the UK and the ASIC/FRC in Australia.

Keywords: Mark to market; Fair value; Income measurement; Enron

‘So much are the modes of excellence settled by time and place, that men may be heard boasting in one street of that which they would anxiously conceal in another.’
(The Works of Samuel Johnson, vol. 4)

1. Introduction

Issues as to the most appropriate manner in which to record assets and liabilities in the balance sheet, and how to reflect changes in these measures in periodic statements of income, have been integral to financial reporting since the development of balance sheet oriented financial statements in the nineteenth century and the emergence of the income or profit and loss statement in the twentieth. In the nineteenth century and earlier, a variety of balance sheet valuation bases were employed in the UK and elsewhere (Yamey, 1977; Richard, 2005; Herrmann, Saudagaran, & Thomas, 2006). Over time, however, the historical cost approach in which assets are recorded at cost and, if they have a finite life, written off over that life, became the dominant convention in the UK, the USA and many other jurisdictions.

In the twentieth century there emerged an academic literature which sought to determine the most appropriate valuation bases for assets, as, for example, in the work of Bonbright (1965), Baxter (1967) and others;¹ and the most appropriate method to measure reported income or profit (Paton, 1922; Edwards & Bell, 1961; Chambers, 1966). Paralleling this work, but, to an extent, divorced from it, was the continuation of a much longer tradition within the economics literature focusing on issues of valuation and income. This work, which can be traced back in origin to that of Ricardo and other classical economists,² was, in the main, directed to issues of distribution and

¹ These authors identified measures such as deprival value, i.e., how much an entity would be worse off if an asset was taken away from it, as possessing characteristics which might be considered more suitable for financial reporting than a strict historical cost approach. See, inter alia, Bell & Peasnell (1997), Stark (1997), Clarke (1998), Australian Accounting Research Foundation (1998) and van Zijl & Whittington (2006) for more recent contributions to the historical cost / deprival value / fair value debate.

² See Sraffa (1951-1973).

accumulation. Some economists, for example Fisher (1906), Lindahl (1933) and Hicks (1946), however, focused, directly or indirectly, on the determination of measures of periodic income within a framework of the calculation of present values of future cash flows associated with assets and liabilities.³

Although these streams of thought were influential in academe, in themselves they had little, if any, effect on the nature and practice of financial reporting. In the UK, however, the high levels of inflation experienced in the 1960s and throughout the 1970s occasioned much debate as to the most appropriate methods of financial reporting within an environment of rapid price change.⁴ This, in turn, overlapped with more basic issues as to the appropriate methods of accounting for and reporting changes in relative price levels⁵ (for a comprehensive review of both the issues and the debate see Tweedie & Whittington, 1984). While the accounting developments consequent to the issuance of SSAP 16⁶ faded with the fall in the level of inflation in the UK during the 1980s,⁷ and the standard fell into disuse before being eventually withdrawn, the need to ensure that current cost accounting was legal under UK company legislation meant that ‘alternative accounting rules’ were introduced into the 1981 UK Companies Act - and have remained in the legislation ever since.⁸ These provisions allow a variety of bases of valuation for different classes of assets; in essence allowing that all assets (other than goodwill) be valued at one of (or, for some categories of asset, at either of) current cost or market value - even if this is greater than historic cost. Any valuation gains until 2004, however,

³ A number of the leading studies in this field, including some of those referenced above, are reproduced, together with an overview of the relevant issues, in Parker, Harcourt, & Whittington (1986).

⁴ This debate was live elsewhere, including the US and Australia - albeit those jurisdictions experienced lower levels of price inflation.

⁵ As Solomons (1961, p.374) noted: ‘In recent years discussion of the measurement of income has been largely colored and dominated by changes in the value of money. Serious as these problems are, they are really secondary ones, for they presuppose some basic agreement about the nature and measurement of income during a period of stable prices. Between accountants and economists, it need hardly be said, no such agreement exists.’

⁶ Statement of Standard Accounting Practice 16, *Current Cost Accounting*, Accounting Standards Committee, UK, 1980.

⁷ SSAP 16 required supplementary current cost disclosures, but also permitted companies to use current cost as the sole basis for their accounts (thereby necessitating the change in the UK Companies Act). Its requirements became non-mandatory in 1986 and it was withdrawn in 1988 (Pong & Whittington, 1996).

⁸ Found in Part C of Schedule 4 of the UK Companies Act 1985.

were not permitted to be credited to the profit and loss statement; rather, they had to be taken direct to equity and shown in a revaluation reserve.

Meanwhile, international interest in the more widespread use of market values in financial statements grew, particularly in relation to financial instruments. For many the conceptual framework statements developed by, inter alia, the Financial Accounting Standards Board (FASB) in the US, the Accounting Standards Board (ASB) in the UK, the Australian Accounting Standards Board (AASB) and the International Accounting Standards Committee (IASC) (now reconstituted as the International Accounting Standards Board (IASB)) were seen as presaging, and to an extent accompanying (or even following), the introduction by standard setters of much more widespread use of market values within financial statements. In December 2000, the Joint Working Group of the major standard setting bodies (the JWG)⁹ produced a draft ‘standard’ which unequivocally recommended the use of market valuation in respect of financial instruments with changes in value being reflected through the income statement.¹⁰ Two years prior to this, the IASB had issued its first version of International Accounting Standard 39 *Financial Instruments Recognition and Measurement* (IAS 39), itself heavily reliant upon US GAAP and, in particular, Statement of Financial Accounting Standards (SFAS) 115 *Accounting for Certain Investments in Debt and Equity Securities* issued in 1993.¹¹ For the last seven years the international accounting standard setting agenda outside the US has been dominated, technically and politically, by the ramifications of IAS 39, which has been revised three times (in 2000, 2003 and 2004) and subsequently amended four times (in December 2004, and April, June and August 2005). In its 2003 iteration the standard allowed the option of any financial asset so designated to be accounted for on a mark to market basis and, as noted above, UK company legislation was amended in 2004 to allow assets so designated to be accounted for ‘at fair value

⁹ The Joint Working Group comprised representatives from the IASC, FASB and eight other international bodies.

¹⁰ See <http://www.icanz.co.nz/StaticContent/download/AGS/summary.pdf>; and Hernandez (2004).

¹¹ For a chronology of the development of IAS 39 and a summary of its present requirements see <http://www.iasplus.com/standard/ias39.htm>

through the profit and loss account'.¹² In the June 2005 amendment to IAS 39, restrictions were placed upon the availability of the mark to market option.

Critical to the use of fair values in financial statements is the manner in which these values are arrived at. In the US, SFAS 157 *Fair Value Measurements* issued in September 2006¹³ adopts the three level hierarchical classification first proposed in 2005¹⁴ comprising: level 1 valuations, being quoted prices in active markets for identical assets and liabilities; level 2 valuations, a more wide ranging category incorporating quoted prices for similar assets and liabilities in active or inactive markets - these prices being appropriately adjusted as necessary to reflect differences in the assets and liabilities and the activity level of the market; and level 3 valuations, where there are no markets for comparable assets and valuations must be based largely on the estimations and judgements of the valuing entity itself. In November 2006 the IASB published a discussion paper on fair value measurements¹⁵ which recommends adoption of a similar hierarchy to underpin fair valuation within individual international standards.

In this paper we address issues of valuation and income measurement within the context of a case study-based investigation of the use of mark to market accounting in the financial reporting of Enron Corporation, the collapse of which in late 2001 - and the ramifications thereof - ranks high in the all-time list of accounting causes célèbres. The case study draws on the extensive and voluminous ex post investigation to explore the motivation for, and the manner of, the use of fair value accounting by Enron, and to interpret and reflect on the insights and lessons that may be gained therefrom. There is already a significant corpus of academic and professional literature on Enron and it is, therefore, necessary to justify the contribution of a further study a number of years on from the company's collapse. We suggest that this contribution comes in relation to the importance of the particular issue, mark to market accounting, which we examine; its

¹² UK Companies Act 1985 (International Accounting Standards and Other Accounting Amendments) Regulations 2004.

¹³ This standard and other material (including a raft of comments on earlier exposure drafts) relating to FASB's Fair Value Measurement project is available on the FASB website at www.fasb.org. See also Dean & Clarke (2005) for an overview of related issues.

¹⁴ In FASB Proposed Statement *Fair Value Measurements*.

¹⁵ Available via <http://www.iasb.org>

contextualisation both within the wider field of valuation and income theory and consideration of previous empirical work in the field; and the use of a more comprehensive, and in part more authoritative, body of evidence than that which was available to earlier researchers and commentators.

In the immediate aftermath of Enron's collapse, much of the initial focus from an accounting perspective was directed at the company's extensive use of special purpose entities (SPEs) to keep large parts of its activities off-balance sheet; at the issues which arose both from the use of these SPEs to support Enron's income numbers through the writing of options which, if enforceable, would protect the value of Enron assets; and at the opportunity provided by these SPEs and their dealings with Enron for certain senior Enron employees to enrich themselves personally (Powers, Troubh, & Winokur, 2002; hereinafter "the Powers report"). It took a little time for a wider and more balanced view of the scale of accounting manipulation at Enron to emerge, most notably in the reports of the court-appointed bankruptcy examiners (Batson, 2002; Batson, 2003a; Batson, 2003b; Batson, 2003c; Goldin, 2003). Issues relating to the inappropriate use of fair valuations did not escape scrutiny altogether, however, and were highlighted in the work of Benston & Hartgraves (2002), McLean & Elkind (2003) and, more specifically, in Benston (2006).¹⁶ To an extent, therefore, this paper overlaps with some of the earlier work but, given the relevance to the continuing debate as to the use of fair valuations in financial reporting, we consider that there is scope for additional insights to be obtained from further investigation and exploration of these issues in the Enron context. In part these insights may be derived from seeking to place the relevant issues within a wider scope of background context and theory and in part, and more specifically, from consideration of the nature and quality of evidential support which Enron obtained to support its valuations. Here we rely on material contained within the Goldin (2003) report, which has received less prominence in the literature than that contained within various Batson (2002; 2003a; 2003b; 2003c) reports, to shed light upon the rôle of third parties in giving support and credibility to the valuations used.

¹⁶ The Benston (2006) analysis is framed specifically in the context of the level 1,2 and 3 'fair-value hierarchy' referred to above as a benchmark against which to assess the nature and quality of the valuations.

Before moving on to the evidence itself, it is worthwhile to consider some of the arguments for and against the use of fair values in financial reporting and also to review briefly recent empirical work which has sought to investigate value relevance and associated issues. Here the purpose is not to offer any new theoretical insights or reinterpretations of the empirical studies that have been carried out - but rather to provide a background to, and a framework for, the case study material which follows.

2. Theoretical Perspectives and Empirical Studies

2.1 Theoretical perspectives

Questions concerning what are the most appropriate valuation measures for assets and liabilities and how changes in such measures should be reported are themselves directly linked to considerations as to the nature and purpose of financial reporting. In the extreme case of the general equilibrium economics model, in which all information is contained with individual asset prices, it is generally agreed that traditional financial reporting in terms of balance sheets and income statements has little, if any, role to play (Beaver & Demski, 1979; Walker, 1988; Barth & Landsman, 1995). In a real world setting of imperfect information and uncertainty, however, financial statements may, potentially, play a variety of roles - both backward looking, in terms of stewardship, the ability to write contracts, employment choices, decisions as to consumption of resources, distribution, etc.; and forward looking, in terms of predictive ability, for example with respect to the amount, timing and likelihood of future cash flows. In this context, the conceptual frameworks developed by FASB, IASC/IASB, ASB and AASB (which, to an extent, reflect attempts by standard setting bodies to provide, or at least articulate their vision of, an underlying normative basis for accounting) identify a number of qualitative characteristics of 'better' financial reporting in terms of relevance, reliability, etc. Here it has been conventional to contrast historical cost valuations which are seen to be reliable but may not be considered relevant, with current or market valuations which may be seen

as more relevant but less reliable. Given this, it is persuasively arguable that where markets for assets and liabilities are sufficiently deep that supportable valuations are available, then reporting assets and liabilities at fair value is appropriate. Standard setters both in the USA and internationally¹⁷ have moved toward this position to an extent. Of course, where markets are deep and transactions costs low, as for example in the markets for some types of government securities, then it is open to an entity holding such securities to convert the current value into an historical cost by ‘bed and breakfasting’¹⁸ the securities at the year end (and thereby crystallising any gain or loss) – in which case the accounting requirements pertaining to fair valuation become less relevant. A significant factor underlying the lack of regulatory interest in the UK in seeking to obtain judicial clarification of whether the widespread use of mark to market accounting by financial institutions¹⁹ ahead of the 2004 changes to the UK Companies Act was, in fact, legal is likely to have been an understanding that there was little economic purpose in requiring entities to incur the (admittedly small) transaction costs which would be necessary to crystallise gains and losses by such means.

The JWG identified the most significant advantages of mark to market accounting for financial instruments as, first, the inclusion of more up-to-date and relevant valuations in the balance sheet and, second, resultant income figures which were of enhanced value both in terms of stewardship and predictive value.²⁰ Although not as clearly articulated in the JWG’s report, there is also, and perhaps equally importantly, the consideration that mark to market accounting removes, in theory at least, management discretion as to when to recognise gains and losses.²¹ Although these arguments are powerful, there still arise a

¹⁷ For example, in Australia, the development and various manifestations of AAS 25 *Financial Reporting by Superannuation Plans* (latest compiled 2006); AASB 1023 *General Insurance Contracts* (latest compiled 2006) (and, earlier, AAS 26 *Financial Reporting of General Insurance Activities*); and AASB 139 *Financial Instruments: Recognition and Measurement* (latest compiled 2007).

¹⁸ That is, selling the securities at the end of the relevant accounting period and repurchasing at the commencement of the next period.

¹⁹ See Macve & Jackson (1991).

²⁰ The bases of the JWG’s conclusions are set out at <http://www.iasplus.com/agenda/jwg.htm>. Barth & Landsman (1995) provide a more general review of the arguments for and against the use of fair values and mark to market accounting in financial reporting.

²¹ For example, although the revaluation of long term liabilities has not been permitted under UK company legislation, it has always been open to a company financed by bonds to refinance those bonds in a manner which will enable any valuation change reflecting movements in interest rates to be incorporated in the

number of issues both practical, primarily in terms of the reliability of the valuations, and theoretical, concerning the manner in which valuation changes should be reported. Here questions as to how the relevant gains and losses should be reported in an income statement throw up a variety of complexities derived from different conceptions of what ‘income’ is, and from different perspectives as to the nature and purpose of financial reporting. Even in the idealised world analysed by Hicks, where at any point in time all cash flows and associated discount rates relating to individual assets and liabilities are thought to be known with certainty (although, since it is a partial equilibrium model, these certainties may change periodically), a plethora of different measures of income (or of consumption possibilities) can be derived around the basic distinction between income as a measure of the difference between net assets at two points in time (which may, loosely, be characterised as the approach taken in the various conceptual frameworks) and income as an amount which is sustainable in future time periods.²² Apart from problems in determining how much ‘better or worse off’ an entity is, there are also issues as to how gains or losses should be disclosed, in particular in terms of whether or not to separate out windfall gains and losses and whether or not, where possible, to distinguish between those gains or losses occasioned by the actions of management and those otherwise occasioned. For example, if one considers that a major role of financial reporting is to enable stakeholders to assess the success or otherwise of management, then how should the recent stockholding gains of the international oil and gas majors be reflected? High demand exacerbated by a series of crises in the Middle East caused prices for oil and natural gas to soar between 2003 and 2006²³ – but to what extent, if any, should these gains be attributed to the activities of management?

income statement for the period in which the refinancing takes place, notwithstanding the fact that, abstracting from transaction costs, there may be no cash flow effects.

²² For more detailed discussion of these issues in the context of fair valuation of liabilities see Horton & Macve (2000).

²³ The price of a barrel of standard crude oil on the New York Mercantile Exchange (NYMEX) rose from under \$25 a barrel in September 2003 to \$78 a barrel in July 2006.

2.2 Empirical studies

Whereas the theoretical literature that has developed over the previous two centuries is extensive and finely honed, it is only recently that this has been accompanied by a body of empirical work which has explored links between valuation choices, market values and other related parameters.²⁴ Here again in the UK the inflation accounting debate of the 1970s and 1980s sponsored a degree of research interest, for example Carsberg & Page (1984) and Lemke & Page (1992). Subsequent to this the combination of more widespread application of positivist research methodology to issues of accounting and financial reporting and the renewed interest in the link between financial reporting and valuation engendered by Ohlson (1991, 1995) and others, have led to a significant upsurge in empirical research in this area.

Botosan et al. (2005) provide a concise summary of the extant academic literature on the relevance and reliability of fair value estimates in financial statements.²⁵ They suggest (citing Barth, 1994, Petroni & Wahlen, 1995, and Nelson, 1996, amongst others, in support) that:

‘The evidence generally shows that fair values obtained from actively traded markets are more reliably associated with share prices than those derived from thinly traded markets or internal estimation models.’²⁶

²⁴ There has, however, been in the UK a long history of legal interest in accounting valuations in relation to issues such as the propriety of dividend distribution and equity to minority shareholders. For example, in *Dimbula Valley* (1961) All ER 769, the legality of distribution from an unrealised reserve was upheld (this is now prohibited by legislation first introduced in the UK Companies Act 1980) - see French (1977) for a detailed review of more than a century of dividend law; and in *re Press Caps* [1949] Ch.434, in the context of whether or not a buyout offer was fair to the minority shareholders, there was some discussion of whether financial statements in which a fixed asset was shown at an historical cost far below its current value did, in fact, appropriately reflect the true position of the entity.

²⁵ The authors also supply general caveats concerning methodology, sample availability and interpretation in the research literature; not least of which is that much of the research evidence concerns firms whose core operating assets comprise financial instruments, i.e., financial institutions. Another useful review of the empirical literature in the field is to be found in Landsman (2005).

²⁶ Botosan et al. (2005, p.189).

Evidence as to whether the involvement of external parties in the valuation process improves the quality and usefulness of the valuations is mixed. Whereas Dietrich, Harris, & Muller (2000) find that the reliability [of property, plant and equipment valuations] increases when the fair values are obtained from external appraisers and are audited by one of the larger international accounting firms, Barth and Clinch (1998) find no difference in reliability between internal and external appraisals for Australian firms' revaluations.

Evidence as to whether managers exercise discretion over fair value estimates, for example in respect to the timing of the recognition of loan losses and the increase in reported fair valuations of fixed assets ahead of the issuance of new debt is also mixed. Bernard, Merton, & Palepu (1995) find little evidence that Danish banks manipulate reported fair values to avoid regulatory intervention but some evidence that managers are slow to recognize loan losses. Dietrich et al (2000), however, find that managers do exercise discretion over property plant and equipment revaluations so as to smooth reported earnings and to increase valuations prior to the issue of new debt.

A recent study by Hodder, Hopkinis, & Wahlen (2006) finds that the time-series volatility of what they term 'full-fair-value income'²⁷ for US banks is higher than that of both comprehensive income and net income; and that the incremental volatility of full-fair-value income, over that of the alternative income measures, is positively related to market-model beta. They interpret their findings as being consistent with the view of the US banking industry at the time of the introduction of comprehensive income that comprehensive income would paint an unrealistic picture of the outcome of a bank's activities, but not with the industry's perspective that it would fail to take into account the use of hedging and other risk management activities and thereby overstate volatility. They also suggest that the market is able to capture elements of the increased volatility by reference to the market betas for individual banks. Again focusing on the US banking

²⁷ A constructed measure encompassing fair value accounting for all financial instruments with gains and losses thereon being taken through the profit and loss account – as compared with the limited use of fair valuation under SFAS115 / SFAS 130 *Reporting Comprehensive Income* / SFAS 133 *Accounting for Derivative Instruments and Hedging Activities*.

industry and the disclosures required under SFAS 119 *Disclosure about Derivative Financial Instruments and Fair Value of Financial Instruments* and SFAS 133, Ahmed et al. (2006) find that recognition of fair values in the financial statements is more relevant to market values than disclosure without recognition.

The empirical studies to date have added to knowledge of relationships between market valuations for entities and valuations of specific assets and liabilities in the financial statements of those entities. They make clear that fair valuations tend to link more closely with capital market valuations than do historical cost valuations and that income reported on a mark to market basis is more volatile than that reported on an historical cost basis or an amended historical cost basis. But less clear is the extent to which they provide much assistance to standard setters and others in relation to a range of issues around appropriate methods of approaches to and acceptable mechanisms for valuation – in particular outside of banking and related sectors.²⁸ In this context it may be that a case study approach will yield insights additional to those obtained from the empirical studies reviewed above. The arguments for and against case study research in accounting and finance have been extensively rehearsed,²⁹ and whilst we acknowledge the value of large sample empirical analysis seeking to identify associations between financial statement variables and market valuations and recognise the difficulties of generalising the findings of a single subject study, we would contend that the richness of the information that can be obtained from case study investigation complements and adds to the perspectives offered by empirical studies of the type reviewed above.

²⁸ For a sample of 145 Fortune 500 manufacturing firms, Wong (2000) found no evidence that SFAS 119 fair value disclosures for derivatives provided incremental risk exposure information.

²⁹ See, for example, Ryan et al. (2000).

3. The case: mark to market at Enron

3.1 Background

The story of the growth and fall of Enron is now very familiar territory and it is necessary to trace it only in outline here. Until its spectacular demise, Enron was one of the fastest growing and, apparently, most successful US corporations. It was formed by merger in 1985, its core business then being the transportation of gas by pipeline. In the late 1980s and early 1990s Enron began to take advantage of the deregulation of the utilities industries to participate in and promote markets for the supply of oil and gas. It also expanded worldwide into the UK, Europe, South America and India. In the late 1990s the primary engine of Enron's growth and apparent profitability was what was termed in the corporation's financial statements as 'wholesale services'.³⁰ These included not only the buying and selling of contracts for the supply of power, but also strategic investments - whether from start-up or by acquisition - in energy and technology-related businesses. Enron's operating performance came under pressure because of increased competition in the market for futures contracts and also because many of its overseas projects were unsuccessful. As one analyst put it:

'All of the attempted diversifications proved to be fiascos. By 2000, Enron ended up with \$10-\$15 billion (about one-third) of its real asset base mostly dead in the water.'^{31,32}

³⁰ Income (before interest, minority interests and taxes) from wholesale services rose by 133% between 1998 and 2000, from \$968m to \$2,260m; whereas income from gas transportation and electricity generation combined increased by only 15%, from \$637m to \$732m.

³¹ Testimony to the US House Committee on Energy and Commerce sub-committee on oversight and investigations, February 2002, available at <http://energycommerce.house.gov/107/hearings/02072002Hearing485/Olson793.htm>

³² It is perhaps a reflection both on corporate culture and the vagaries of human existence that, arguably, one of the main contributors to Enron's collapse, Rebecca Mark, should, having left Enron in 2000 and cashed in her stock options for \$83m, now be enjoying family life raising cattle on a New Mexico ranch see http://www.fastcompany.com/magazine/74/enron_mark.html; whereas her nemesis within Enron, Skilling, who perhaps might plausibly claim to have created something of lasting economic value in terms of the opening up of energy markets, faces a much more bleak future. Ms Mark, as CEO of Azurix, oversaw Enron's disastrous venture into water services, having previously been responsible for negotiating and managing many overseas projects, including Enron's foray into power supply in the Indian sub-continent - projects which had, at best, mixed results.

Although the rapid appreciation of many of its 'hi-tech' investments allowed Enron to mask lack of success elsewhere, when the hi-tech bubble burst Enron suffered accordingly. From a high of \$90 in August 2000 there was a slow but persistent slide in its share value, prompted by concerns as to the quality of Enron's earnings and the solidity of its balance sheet, and exacerbated by significant stock sales by senior executives. This became a headlong fall after the resignation of Enron's Chief Executive Officer in August 2001, followed by the reporting of a \$618m quarterly loss in October 2001, the news that the US Securities and Exchange Commission (SEC) was investigating possible conflicts of interests, and the admission in November 2001 that profits had been overstated by \$600m since 1997. The adverse publicity associated with these events led to increased margin calls by counterparties to its trading contracts. Haemorrhaging cash, and having failed in its attempt to merge with its smaller Houston based competitor, Dynegy, Enron filed for bankruptcy in the US on 2nd December 2001.

On an ex post basis, Enron's activities have been subject to subsequent investigation by a whole range of bodies, including internal investigation initially commissioned by Enron itself, committees of the US Senate and House of Representatives, and bankruptcy examiners. There has also been a vast array of articles, papers, academic studies, etc. concerning various aspects of the collapse.³³ Further, there have been a number of high profile criminal trials which have resulted in the conviction of senior members of Enron's staff, most notably those of the Chief Financial Officer (Fastow), a former Chief Executive Officer (Skilling) and the Chairman (Lay). As to the detail of accounting practices at Enron, although the internally-commissioned Powers report, published within three months of Enron's demise, provides a wealth of insight, by far the most exhaustive and authoritative sources are the reports of the bankruptcy examiners (Batson, 2002; Batson, 2003a; Batson, 2003b; Batson, 2003c; Goldin, 2003). Neal Batson's second interim report, Batson (2003a), which, including the Appendices, runs to more than 2000 pages, provides the most comprehensive overview and detail as to the manner in which Enron systematically manipulated its accounting numbers in the period ahead of its demise. Future references in this paper to the "Bankruptcy Examiner's report" or the

³³ And a film, 'The Smartest Guys in the Room', based upon the book by McLean & Elkind (2003).

“Examiner’s report” are, unless specified otherwise, to Batson (2003a). The Goldin (2003) report is more specific in its focus and sheds significant additional light on the construction of certain of the valuations which supported and facilitated Enron’s use mark to market and fair value accounting.

3.2 Accounting at Enron

The Examiner’s report provides, overall, a devastating indictment of the integrity and quality of Enron’s financial reporting, claiming that the combination of a whole variety of practices which it considered to be either on, or overstepping, the boundaries of GAAP resulted, in the final year for which full published accounts were available, in Enron’s overstatement of profit by 96% and of operating cash flows by 105%; and understatement of debt by 116% (see Appendix). Within the range of accounting practices called into question by the Examiner’s report, mark to market accounting played a significant role: in part in facilitating these practices; but also in necessitating them, because Enron wished to avoid or disguise the negative consequences of mark to market accounting (in that, when asset values fall, losses are taken through the income statement). The following section reviews examples of the manner in which mark to market accounting was utilised at Enron. It also briefly considers the extent to which Enron disclosed its reliance upon mark to market accounting in its financial statements, the reaction of analysts and others to these disclosures, and the manner in which Enron sought to address the perceived ‘quality of earnings issue’ relating to the disparity between the upfront recognition of profit and reported operating cash flows.

3.3 Mark to market

Whereas the US was for many years seen as a champion of historical cost accounting,³⁴ in the 1990s mark to market accounting became increasingly widespread.³⁵ Enron, and in particular, Skilling, who as Chief Operating Officer was credited with

³⁴ For example, in contrast to the situation in the UK, upward revaluation of property was not permitted by the SEC.

³⁵ Colson (2006) attributes this to the effect of the FASB adopting a conceptual framework that: ‘shifted the financial accounting paradigm from revenue recognition and expense matching measured at historical cost to asset and liability recognition measured at fair value.’

masterminding the transformation of Enron from a pipeline operator into an innovative creator and operator of energy and commodity markets, lobbied to be allowed to use mark to market accounting in relation to its contracts for future supply of energy. In June 1991 Enron wrote to the office of the Chief Accountant of the SEC to inform the SEC that Enron intended to use mark to market accounting for its gas trading business. This letter contained a lengthy memorandum setting out Enron's view as to the appropriate accounting treatment – which was essentially that trading in energy futures was directly analogous to trading in securities futures and should therefore be accounted for equivalently – highlighting the opening up of spot and forward markets in gas futures and also attaching letters of support from both Arthur Andersen and Ernst & Young. Although, apparently, there was disquiet as to this proposal amongst SEC staff, Skilling's luck was in, in that in January 1992 Walter Schuetze took over as Chief Accountant of the SEC. Schuetze, a Texan with extensive experience of auditing oil and gas companies, was, perhaps more importantly, then and now, a firm, indeed passionate, supporter of fair value as opposed to historical cost accounting.³⁶ Not surprisingly, therefore, on 30 January 1992 Enron received a letter stating that the SEC would not object to its use of mark to market accounting for its natural gas trades.³⁷ Skilling's apparent reaction was reported thus:

'He won approval over the objections of some SEC staffers. That day he gave an elated shout and a cheer went up in the office.'³⁸

As the Bankruptcy Examiner's report notes, from this 'modest beginning' Enron's use of mark to market accounting spread so that by the end of 2000 approximately 35% (\$22.8 billion) of Enron's reported \$65.5 billion of assets were accounted for on a mark to market basis. Apparently without any further consultation with the SEC, Enron had by this time extended its mark to market accounting to trades in other energy commodities including electric power, paper and pulp, and coal; a significant investment partnership (called 'JEDI', for more upon which see a later section), its merchant investment ventures

³⁶ See, for example, Schuetze (1993, 2001, 2003).

³⁷ Batson (2003a, p.23).

³⁸ http://www.washingtonpost.com/wp-dyn/content/article/2005/06/10/AR2005061000722_5.html

and, in 1999-2000, non-energy commodities.³⁹ Although in 1998 the use of mark to market accounting for energy contracts was generally ‘legitimised’ by the regulators, and indeed, provided certain criteria were met, required,⁴⁰ it is far from clear that the adoption of mark to market accounting in respect to the merchant investments complied with relevant GAAP.⁴¹

The perception within the firm of the use and importance of mark to market accounting for Enron may be gauged by the thoughts of a former Enron trading software manager who claimed:

‘When we marked to market, we were truly controlling our revenue. That was how your business model was set up ... You could always meet [Wall Street’s] expectations.’⁴²

3.4 Mark to market in practice

The majority by far of assets and liabilities covered by mark to market accounting related to what Enron termed ‘price risk management activities’, with overall \$22.8 billion of assets at year end 2000 being balanced by \$19.9 billion of price risk management liabilities.⁴³ As disclosures in Enron’s financial statements reveal, the majority of this related to Enron’s trading activities in energy and other futures. Here, the entry into the market for energy futures of a number of other players is likely to have deepened these markets and improved the reliability of the fair value measures; although some of the products, for example weather derivatives, might not be traded in very complete markets. Notwithstanding the view expressed by the former Enron manager set out above, which might perhaps be interpreted as relating to the use of mark to market for

³⁹ Batson (2003a, pp.24-25).

⁴⁰ Emerging Issues Task Force (EITF) 98-10 (FASB,1998). Following the collapse of Enron, in 2002 EITF 02-3 (FASB, 2002) significantly restricted the use of mark to market accounting for energy contracts.

⁴¹ Batson (2003a, p.25). In respect of its merchant investment ventures Enron justified the use of mark to market accounting on the basis that these investments were analogous to venture capital investment companies which were, under US GAAP, permitted to use mark to market accounting. Batson (2003a, p.28) labelled this stance as ‘aggressive’ and indicative of the problems that both Enron and Arthur Andersen had in addressing the quality of earnings problem.

⁴² http://www.washingtonpost.com/wp-dyn/content/article/2005/06/10/AR2005061000722_5.html

⁴³ Batson (2003a, p.24).

mainstream trading activities, the Examiner's report does not comment adversely on the use of mark to market accounting for these trading activities^{44,45} – but does identify a number of uses of mark to market accounting in relation to particular deals and transactions which were critical to the quarterly and annual earnings figures portrayed by Enron. Five of these are discussed further below.

3.4.1 Rhythms

Many of Enron's investments in new start up ventures were, initially at least, highly successful in the heady days of the hi-tech boom. In March 1998 Enron invested \$10m buying 5.4m shares at \$1.85 each in a privately held internet service provider Rhythms NetConnections, Inc. (Rhythms). Rhythms went public in April 1999 at \$21 a share and by the end of the first trading day the shares had reached \$69. Although the shares subsequently fell back a little, on 1 June 1999 Enron's holding was worth \$260m and was marked to market accordingly - although Enron was locked-in until November 1999.⁴⁶ Enron wished to hedge the volatility in the underlying share price,⁴⁷ and so entered into an arrangement with a structured limited partnership, LJM 1⁴⁸ (managed by Enron's Chief Financial Officer), for this purpose. LJM 1 wrote an option on the Rhythms shares at just over \$56 per share in return for Enron shares worth \$276m on the open market, but

⁴⁴ Batson (2003a, p.29) notes that: 'the Examiner has not engaged valuation experts or otherwise undertaken to determine whether Enron properly valued the assets subject to its MTM [Mark to Market] accounting. Under MTM accounting, assets for which there are not publicly quoted prices are to be valued by management based upon the best information to determine the fair value of the assets. Many of Enron's assets were in this category, including most of its merchant investments and all of the Total Return Swaps it entered into in connection with the SFAS 140 transactions (and treated as price risk management assets or liabilities). In addition, the Examiner has not considered the propriety of Enron's extension of its MTM accounting to commodities not covered by EITF 98-10, or, other than the Prepays, whether contracts that Enron claimed were 'energy trading contracts' or 'energy-related contracts' under EITF 98-10 were in fact those types of contracts.'

⁴⁵ Haldeman (2006) suggests, on the basis of the shortfall of assets available in bankruptcy as compared with those disclosed in the financial statements for 2000, that the valuations placed upon the trading activities must have been inappropriate. No specific examples are provided, however, and, although the overall insight is of indicative value, a number of potential intervening factors might be relevant to the accuracy of the analysis.

⁴⁶ Batson (2003a, Appendix L, Annex 2, p.1).

⁴⁷ Enron's purchase agreement did in fact prohibit the hedging of its stake before November (Batson, 2003a, Appendix L, Annex 2, p.13).

⁴⁸ The actual transactions, which were complex, were executed with a subsidiary of LJM 1 – but for ease of exposition here they are referred to having taken place with LJM 1. For a more complete analysis see Batson (2003a, Appendix L, Annex 2, pp.1-46).

valued by Enron, for the purposes of the deal, at \$108m less because of restrictions placed on LJM 1's ability to sell them. LJM 1 also wrote notes in favour of Enron for \$64m – Enron valuing the initial option at \$104m. Two months after board approval of the transaction, PricewaterhouseCoopers (PwC) provided a fairness opinion, valuing the option at between \$100m and \$140m.⁴⁹ Shortly afterwards Enron entered into further option agreements so as to protect itself against volatility above \$56 per share.

In early March 2000, by which time the Rhythms price had fallen to under \$42 per share (by the end of April it was under \$22), Enron unwound the deal with LJM 1 whereby LJM 1 returned Enron stock with a value of \$217m in exchange for termination of the option and \$27m in cash.⁵⁰ Between April and November 2000 Enron sold the entirety of its holding in Rhythms for approximately \$50m – a significant gain on the purchase price (albeit one greatly reduced if the fees paid to LJM 1, a high proportion of which went to Enron employees, are taken into account – and, of course, much less than would have been achieved if the hedge transaction had had real economic meaning).

3.4.2 Cuiaba

An example of recognition of income with regard to a standard trading contract, but one in which Enron was effectively participating in both sides of the deal, may be seen in the contract relating to the future supply of natural gas to the Cuiaba power station in Brazil, a power station in which Enron held a 65% interest. Deconsolidation of this interest⁵¹ enabled Enron to record mark to market revenue of \$34m and \$31m in the third

⁴⁹ PwC received a fee of \$800,000 for its opinion that the values attributed to the option and the shares were fair – see below for Goldin's critique both of the manner in which PwC arrived at its opinion and more generally of its relationship with Enron and LJM 1.

⁵⁰ Batson (2003a, Appendix L, Annex 2, p.24) notes that for the purpose of this valuation the restrictions on the sale of the stock were ignored (some doubt is also cast, p.17, on whether there had ever been any intention to enforce the restrictions). Batson also notes, p.23, that there was, apparently, no fairness opinion as to the termination transaction, nor was there any evidence that it was approved by the Enron board.

⁵¹ This deconsolidation was achieved by means of the sale of a 13% interest in Cuiaba to LJM 1 (subsequently repurchased at a price which yielded a profit to LJM 1). Accompanying this interest was the right to nominate one of the four directors (a right that was not taken up) - which allowed Enron to argue that, as it no longer had the right to appoint a majority of the directors, it was no longer in a position to control Cuiaba. Batson (2003a, Appendix L Annex 3 p.13) considers that this decision was inappropriate and that Enron should have continued to consolidate its interest in Cuiaba.

and fourth quarters of 1999 respectively (and a further \$19m in the following two quarters) in relation to its gas supply contract, notwithstanding that the building of neither the power station nor the pipeline supplying the gas had been completed.⁵² Unfortunately, neither the Examiner's report nor the Powers report goes into specific detail as to the nature of the accounting, but it would appear that Enron recognised as income the discounted present value of its interest in the contract to supply gas to the power station. Details as to how this valuation was arrived at (and why the amounts booked to income declined over four consecutive quarters) are not clearly available in the source material relating to Cuiaba.

3.4.3 JEDI

Another example which illustrates, in slightly unusual circumstances, the greater willingness of Enron to employ mark to market accounting when it resulted in increases in asset values and earnings, rather than when the opposite applied, may be seen in the accounting for Enron's 50% interest in the merchant investment fund JEDI, held since 1993 and accounted for on an equity basis. JEDI used mark to market accounting for its investment holdings from 1996 onwards, with changes in their value then being directly recorded in the income statement of Enron. JEDI held 12 million shares in Enron and as these rose in value the Enron income statement benefited accordingly. For example, in the first quarter of 2000 Enron recorded \$126m from the appreciation of its own stock held by JEDI. Generally accepted accounting practice normally does not permit entities to show gains from the appreciation of the value in their own stock and, consequently, perhaps as a result of pressure from Arthur Andersen, the decision was taken (apparently in the first quarter of 2000) that, in future, such gains would not be recorded. This decision appears to have been implemented in the first quarter of 2001 when, according to the Powers report,⁵³ Enron would have been required to record a loss of \$90m as a result of the decline in value of its shares. It is suggested that, on the advice of Andersen, this loss was not recorded on the grounds that the intention was not to record increases,

⁵² Powers, Troubh, & Winokur (2002, p.137).

⁵³ Powers Troubh, & Winokur (2002, p.59)

so decreases should not be recorded either. Perhaps with some understatement the Powers report concluded:

‘We do not understand the basis on which Enron recorded increases in value of Enron stock held by JEDI in 2000 and prior years, and are unable to reconcile that recognition of income with the advice apparently provided by Andersen in 2001 concerning not recording decreases in Enron stock value.’⁵⁴

3.4.4 Blockbuster

This example, together with the Eli Lilly transactions outlined below, illustrates the lengths to which Enron went, as its financial circumstances worsened, to recognise income and cash flows via marking to market.

In July 2000 Enron announced a 20-year exclusive deal with Blockbuster, an entertainment company, to supply videos on demand. As the Examiner’s report notes,⁵⁵ this announcement was aspirational in nature - as Enron did not have the technology to deliver videos on demand on a commercial basis and Blockbuster held no rights over such videos. Nevertheless, a 45% interest in the contract was sold, via an Enron subsidiary, to an unconsolidated special purpose entity (SPE)⁵⁶ for \$57m (based on an Andersen supplied valuation for the contract of \$120-150m).⁵⁷ This enabled Enron to recognise \$53m in earnings and \$57m in operating cash flow.

⁵⁴ Powers Troubh, & Winokur (2002, pp.59-60).

⁵⁵ Batson (2003a, p.29).

⁵⁶ SPEs were commonly highly geared entities which, provided they met the SEC ‘rules’ in terms of the percentage of total assets financed by outside equity (then a minimum of 3%) and they were not controlled by the ‘parent’, were not required to be consolidated.

⁵⁷ Batson (2003a, p.30): ‘Andersen appraised the value of this contractual arrangement at between \$120 million and \$150 million, even though the anticipated business did not have the technology to deliver its product or any rights to the product that it proposed to deliver.’ The valuation was obtained on the basis of a number of assumptions as to likely market penetration and the cash flows associated therewith. These cash flows were then discounted at rates ranging from 31 to 34% to arrive at the valuation. In this context the Examiner opined (Batson, 2003a, p.31) that: ‘While a venture capitalist might find the analysis informative in assessing whether to make a seed investment in a speculative start-up situation, given the underlying facts, the Examiner questions whether it was appropriate for a public company to transfer this contract to a structured finance vehicle, assign it a speculative value and recognise that amount as current income and cash flow from operating activities.’

In March 2001 the exclusive agreement with Blockbuster was terminated. A press announcement expressed an intention to initiate discussions with various parties for the purpose of delivering movies, games, television programming and music via the Enron Intelligent Network. Although the 45% interest had been sold to the SPE, Enron had executed a total return swap which entitled it to all the future proceeds from the activity sold. Enron marked this swap to market (thereby effectively continuing to mark to market the 'sold' asset within its accounts). On the basis of the new announcement this swap was written up by a further \$58m. Again the swap was 'monetised', i.e., it was 'sold' to another unconsolidated SPE on a similar basis to that on which the original asset had been sold, thereby enabling income and cash flow of \$58m to be recognised. No contracts for the delivery of movies, games, television programming or music emerged, and by late summer 2001 Enron decided to shut the business down. As the Examiner's report noted:

'Thus, within the space of about one year, this investment which resulted in Enron reporting \$111 million of gain and \$115 million of funds flow from operations in the fourth quarter of 2000 and the first quarter of 2001, proved to be worthless.'⁵⁸

3.4.5 Eli Lilly

In February 2001 Enron announced a \$1.3 billion, 15-year energy management agreement reached with Eli Lilly, a company operating power plants in Indiana, whereby Enron was to provide, via an intermediary, energy management facilities to the plants. Enron obtained from KPMG Consulting a valuation at \$39.7m of its interest in the intermediary and promptly transferred this into a SFAS 140⁵⁹ structure in exchange for \$38m whilst retaining its effective interest in the risks and rewards of the contract via a total return swap. Enron's first quarter earnings for 2001 revealed income before interest and tax of \$40m from \$693m of turnover in the energy service segment - \$38m being attributable to the transfer of its interest in the management contract. Here the valuation

⁵⁸ Batson (2003a, p.32).

⁵⁹ SFAS 140 *Accounting for Transfers and Servicing of Financial Assets and Extinguishments of Liabilities* (issued September 2000; a replacement of FASB Statement No. 125).

in question was arrived at by estimation of the savings that would be achieved by Eli Lilly (which would be paid over to Enron) over the fifteen year contract discounted at rates of 8.25 and 8.5% - themselves calculated as above BBB borrowing rates (the yield on Enron's borrowings) but below those for BB+ bonds. Here again the Examiner opined that:

'To apply a discount rate based on investment grade bonds to account for the risk inherent in achieving anticipated energy savings over a 15-year period indicates that the appraiser accepted as "reasonable without further due diligence" that the application of Monte Carlo simulation to anticipated energy savings removes all but the credit risk from the transaction.'⁶⁰

and continued:

'This questionable method for determining the cash flows and discount rates illustrates the creativity of Enron's valuation methodologies as applied to assets for which there was no readily available market price.'⁶¹

3.5 Disclosure

It is frequently argued that the actual choice of accounting policy and valuation method is largely irrelevant provided that users of financial statements are provided with sufficient information to enable them to understand which choices have been made and if necessary to reconfigure the numbers on an alternative basis.

The Enron financial statements disclosed, in the notes to the accounts, the extensive use of mark to market accounting both in relation to trading activities – termed price risk management activities - and in relation to investments held with a view to subsequent disposal, termed merchant investments. With reference to price risk management the relevant note in the year end 2000 annual accounts stated:

⁶⁰ Batson (2003a, pp34-35).

⁶¹ Batson (2003a, p.35).

‘Enron engages in price risk management for both trading and non-trading purposes. Instruments utilized in connection with trading activities are accounted for using the mark-to-market method. Under the mark-to-market method of accounting, forwards, swaps, options, energy transportation contracts utilized for trading activities and other instruments with third parties are reflected at fair value ... Unrealized gains and losses from newly originated contracts, contract restructurings and the impact of price movements are recognized as “Other Revenues”. Changes in the assets and liabilities from price risk management activities result primarily from changes in the valuation of the portfolio of contracts, newly originated transactions, and the timing of settlements relative to the receipt of cash for certain contracts. The market prices used to value these transactions represent management’s best estimate.’⁶²

There is also detail both as to the amount of assets accounted for at fair value both on average through the year and at the year end (Enron Annual Report, 2000, p. 38) and further information as to the valuation methods employed with respect to merchant investments:

‘The merchant investments made by Enron and certain of its unconsolidated affiliates ... are carried at fair value and include public and private equity, government securities with maturities of more than 90 days, debt and interests in limited partnerships. The valuation methodologies utilize market values of publicly-traded securities, independent appraisals and cash flow analyses.’⁶³

and also as to securitizations and swaps:

‘From time to time, Enron sells interests in certain of its financial assets. Some of these sales are completed in securitizations, in which Enron concurrently enters into swaps associated with the underlying assets which limits the risks assumed by the

⁶² Enron Annual Report (2000, p.36). Enron’s financial statements for the year ending 31 December 2000 are available at <http://picker.uchicago.edu/Enron/EnronAnnualReport2000.pdf>

⁶³ Enron Annual Report (2000, p.40).

purchaser. Such swaps are adjusted to fair value using quoted market prices, if available, or estimated fair value based on management's best estimate of the present value of future cash flow.'⁶⁴

However, although these disclosures might have alerted financial statement users to the extent to which mark to market accounting was being employed, and that it was not just confined to trading in energy and other derivatives, it would not have been possible for them to determine the extent to which overall reported profitability relied upon the use of mark to market accounting nor the significant degree of subjectivity involved in many of the valuations employed.

3.6 Quality of Earnings

The use of mark to market accounting is likely to increase both the volatility of reported income and also the gap between income and cash flows. Analysts and others were aware of Enron's use of mark to market accounting and did, from time to time, raise concerns as to the quality of the reported earnings. For example, a JP Morgan analyst's report issued in June 1999 contained the following:

'Financial Engineering Accelerates Earnings
[ENA, an Enron subsidiary] has significant flexibility in structuring contracts and hence booking earnings. It is primarily a financial business and hence uses 'mark to market' accounting. As such, contracts can be structured to recognize the economic value of projects long before they are operational and cash is coming in the door. For example, Sutton Bridge, a power plant that will start operations in the second quarter of 1999, hit ENE's bottom line in 1997. ... This has two effects: front-end-loaded earnings that bias the denominator in the P/E ratio and a timing disconnect between projects' cash and earnings effects.'⁶⁵

⁶⁴ Enron Annual Report (2000, p.38).

⁶⁵ Quoted in Batson (2003a, p.26).

In order to portray a picture of income and cash flows in harmony Enron sought to manage its cash flows by means of SFAS 140 transactions whereby assets were ‘sold’ to unconsolidated SPEs (although via a total return swap Enron normally retained an obligation to meet the financing needs of the SPE and retained the interest in any gain or loss on the value of the asset).⁶⁶ As the Examiner’s report notes:

‘Enron carefully designed its FAS 140 technique with advice from Andersen and Enron’s lawyers with the goal that the asset transfer would qualify for sale treatment under GAAP despite the fact that sale treatment did not reflect the economic substance of the transaction.’⁶⁷

As shown in the Appendix, SFAS 140 transactions were responsible for more than \$1.1 billion of reported cash flow in Enron’s final full year financial statements.

Even more significant were the prepay transactions which, again as shown in the Appendix, contributed more than \$1.5 billion to cash flow (over half the reported net total) in the final full year statements. Essentially these were short term financing transactions whereby Enron borrowed money from banks, borrowings which were, via the use of intermediary SPEs (and the compliance of the banks), portrayed as sales, although in reality there was no transfer of commodities or risk between the parties.

These prepay contracts typically involved a sale of gas, oil or electricity for delivery at a future date by Enron to a SPE set up by a financial institution. Payment would be received in advance the SPE receiving the funds from the financial institution on account of its own prepaid forward contract with the bank. Enron and the financial institution would simultaneously enter into derivative contracts whereby Enron would agree to pay a fixed price for the amount of the commodity that it had agreed to deliver to the SPE, plus an interest factor, in exchange for the financial institution’s agreement to pay the market price for the commodity at the times of the scheduled deliveries under Enron’s

⁶⁶ Goldin (2003, pp.14-16) outlines the basic requirements of SFAS 140 and its predecessor SFAS 125 with respect to when, under US GAAP, it is and is not appropriate to recognise a sale.

⁶⁷ Batson (2003a, p.39).

prepaid forward contract with the SPE. As the Bankruptcy Examiner noted:

‘Neither Enron, the bank nor the SPE had the risk of price fluctuation on the commodity. Enron was exposed to a floating price risk, having agreed to deliver the commodity to the SPE at specified times in the future, but had eliminated that risk by agreeing to receive the floating price from the bank in exchange for a fixed price. The bank had no commodity risk because, while it was to receive the floating commodity price from the SPE, it had eliminated the risk by agreeing to receive a fixed price (plus an interest element) from Enron in exchange for giving Enron the floating price. The SPE had no commodity price risk because it simply passed what it received from Enron to the bank.’⁶⁸

Although the individual transactions between Enron and the SPE and the financial institution may appear to have involved the assumption of risk and could, therefore, be categorised as price risk management activities, viewed in their entirety the circular nature of the transactions meant that made this apparent assumption of risk was entirely illusory. The importance of these prepays to Enron can be seen in the fact that between 1992 and 2001 at least \$8.6 billion in cash was obtained through these transactions, of which over \$5 billion was still outstanding at end June 2001. The transactions produced operating cash flow equal to virtually all Enron’s net operating cash flow in 1999 and 32% of its net operating cash flow in 2000. Batson (2003a, p. 45) describes the prepays as being the ‘quarter-to-quarter cash flow life blood of Enron.’

The manner in which these contracts were seen both within and outside Enron may be gauged from the perception of William Brown (an operating officer with lead responsibility for setting up two of the contracts to a value of \$1.1 billion) that the amount of any given prepay transaction was determined by the targeted cash flow Enron wanted to show the rating agencies; that of Andrew Fastow, Enron’s Chief Financial Officer, that the prepay transactions were a device to bring cash forward to match

⁶⁸ Batson (2003a, p.45).

earnings; and, more prosaically, that of a managing director at one of the counterpart financial institutions involved that these transactions were giving ‘oomph to revenues’.

4. Reflections and Conclusions

This paper does not set out to add further insights to the wealth of literature as to theoretical aspects of income measurement which has been accumulated over the past two hundred years. Rather, it seeks to highlight practical issues as evidenced by examination of accounting practice in one particular entity. As such it is open to challenge, as all such case study investigations are, on the grounds that the entity in question is atypical. In some senses such challenge is incontestable as, notwithstanding the raft of North American corporate collapses and examples of accounting failure,⁶⁹ none has been as complex and comprehensive as Enron, nor as dramatic in its impact. Nevertheless, whether or not the accounting at Enron actually complied with GAAP it was constructed, largely with the knowledge and approval of the auditors, so as to be defensible as complying with GAAP - and this distinguishes Enron from other high profile cases, such as WorldCom, where the accounting manipulations appear to have been much more crude. If Enron was able to satisfy itself and its auditors that its mark to market practices did, indeed, comply with GAAP, then it is perhaps likely that similar practices, albeit less compelling in terms of scale and outcome, were not uncommon in other entities.

Depending on one’s perspective, a whole range of insights may be derived from the case study evidence adduced above. Here we focus initially on just three interrelated issues: (i) the problems associated with mark to market accounting when markets are incomplete; (ii) the unreliability of third party estimates and appraisals; and (iii) the lengths to which management, under pressure to meet forecasts and targets, will go to avoid recording mark to market losses. In this context we then proceed to consider briefly what implications there may be for regulators and standard setters; and whether these

⁶⁹ For example WorldCom, Xerox, Tyco and many others (see Gwilliam, & Marnet, 2006).

implications are purely normative in relation to issues of measurement, recognition and disclosure, or are more wide-ranging in terms of suggesting a need to limit the occurrence and/or extent of manipulation of financial information provided to markets by company management.

4.1 Incomplete markets

As noted above, a paradox of mark to market accounting is that it is likely to be most 'accurate' in circumstances where it is least useful, i.e., in complete markets. For Beaver and Demski (1979), the rôle of accounting information in incomplete markets characterised by uncertainty is that of 'noisy communication'. The examples set out above would suggest that in some situations the 'noise' may outweigh the information content. It is true that the bankruptcy examiner does not criticise mark to market *per se* but rather the use made of it by Enron:

'In fact, the proper use of MTM [mark to market] accounting for assets and liabilities subject to frequent price fluctuation, and related disclosures of value at risk, arguably provides more relevant and reliable information than would historical cost. Setting aside valuation abuses, the problem was not that Enron used MTM accounting, but rather that Enron resorted to financial engineering to address the effects of MTM accounting.'⁷⁰

For the user, however, the end result - inappropriate information on which to base investment and other decisions - is the same, whether the cause is because of theoretical flaws or practical failings in application.⁷¹ Our argument is that Enron highlights the failings in application which, in turn, are heavily influenced both by the rôle of management and the problematic use of independent outside agents to supply valuations on which the mark to market numbers critically depend.

⁷⁰ Batson (2003a, p.24).

⁷¹ The case also illustrates the ease with which Enron was able to 'monetize' (to use the bankruptcy examiner's term) physical assets – which in turn may have implications for those who consider the debate over IAS 39, and the similar FASB proposals, to be confined more strictly to conventional financial assets and liabilities.

4.2 Valuation estimates

A significant proportion of the assets shown at fair value were valued not on the basis of market prices but on the basis either of management estimates or third party valuations. As has been seen, Enron employed a range of third parties to provide mark to market or related valuations⁷² including Andersen, KPMG Consulting, PricewaterhouseCoopers and, on occasion, financial institutions. In the outturn, these valuations, which were normally provided for significant fees, were frequently highly optimistic,⁷³ and, in respect to more than one, there is evidence that it was not completely independent. For example, in reference to valuations obtained in respect to the Forest Products transactions (relating to Enron's trading in and ownership of forestry interests) the Examiner's report notes:

‘According to internal e-mails, Chase Securities was assisting Enron in defining “fair market value in such a way that it always turns out to be equal to the value at which the SPE purchased the business.”’⁷⁴

And Goldin is highly uncomplimentary about the PricewaterhouseCoopers valuation which facilitated the Rhythms transaction discussed above and the associated opinion regarding Raptor 1 (Talon), and for which in total PwC received fees of \$1.8 million:

‘The ENA Examiner concludes that the evidence is sufficient for a fact finder to determine that PwC's conduct in connection with the two fairness opinions constituted professional malpractice and that it was grossly negligent.’⁷⁵

⁷² Strictly speaking, not all the valuations discussed above were directly for mark to market purposes – for example the Blockbuster and Eli Lilly valuations provided by Arthur Andersen and KPMG respectively were for the purposes of the SFAS 140 transaction whereby a ‘sale’ of the relevant interest was recorded.

⁷³ It is, of course, not possible to infer directly from this that the valuations were necessarily inappropriate at the time that they were made. Valuations representing point estimates will incorporate a probability distribution of likely outcomes and it could be argued that the actual outcomes were suitably incorporated into that distribution.

⁷⁴ Batson (2003a, Appendix K, p.6).

⁷⁵ Goldin (2003, p.305).

Factors underpinning this conclusion were that the opinions were, in the outturn, incorrect; that they were not, as they should have been, communicated to Enron's board; that at the same time as providing these fairness opinions to Enron PwC was providing taxation and consulting advice on these transactions to LJM 1;⁷⁶ that the opinion was delivered after the transaction had closed; that PwC were aware of and failed to consider or explore further the contractual prohibitions on Enron hedging its interest in Rhythms; that PwC relied on representations by Enron's management which it knew were neither reasonable or justified; and that the PwC fairness opinion teams had limited experience in rendering fairness opinions and lacked experience in valuing key elements of the transactions.^{77,78} PwC's response was that:

'The examiners' criticism of PwC are without merit. We were engaged only to perform valuation work based on unaudited assumptions provided by Enron management ... Any claim against PwC would be frivolous partly because the evidence clearly shows that the board approved the transactions either before PwC performed its work or without knowledge of our work.'⁷⁹

4.3 Management incentives

Notwithstanding the enthusiasm of professional firms and financial institutions to provide, for significant fees, both valuations to suit Enron and also to structure transactions, for example the prepays, to disguise the extent of Enron's reliance on mark to market accounting to bolster its reported financial performance, Enron's accounting and financial reporting were, ultimately, the responsibility of its own management and directors. Here we would suggest that the Enron saga is a powerful exemplar of the

⁷⁶ 'This material conflict of interest could have compromised PwC's independent judgment on its fairness opinions. PwC not only failed to declare this conflict of interest to Enron's board of directors, but represented affirmatively that it had no conflict, in violation of both PwC's internal guidelines and industry standards which require that those who render fairness opinions be completely impartial.' (Goldin, 2003, p.306).

⁷⁷ Goldin (2003, pp.305-306).

⁷⁸ More generally Goldin (2003, pp.304-452) provides a wealth of detail as to PwC's role with respect to the Rhythms and Raptor 1 (Talon) transactions.

⁷⁹ See <http://www.chron.com/disp/story.mpl/special/enron/2271504.html>

manner in which management, under pressure to meet earnings and gearing ratio targets (and to match earnings with cash flows) will resort to financial engineering to meet market expectations. As noted above, mark to market accounting was in part a constituent of this financial engineering and in part a cause of it, as management sought to avoid reflecting the losses which should have been reported as the value of assets marked to market fell. Rhythms is just one example of merchant investments, initially highly successful, whose value declined as the high-tech bubble burst. The Powers report documents other such investments, for example Avici and The New Power Company, where prices rose and then fell at an alarming rate; where it was the desire initially to lock in mark to market gains which led to many 'artificial' transactions with hand picked SPEs; and where, when it became clear that the SPEs could not or would not be able fulfil their obligations under the transactions, led to the more extreme financial manipulations of which both the Powers report and the Bankruptcy Examiner's report are highly critical.⁸⁰ Indeed some would argue that the lessons of Enron, even those confined to the financial reporting aspects alone, relate primarily to consideration of individual and corporate ethics and modes of corporate practice and that the Enron financial reporting would have been misleading whatever accounting practices or standards were in operation.

4.4 Implications for standard setters and regulators

Although this paper has not been framed specifically for the purpose of providing direct input to either the standard setting process, in the way that a direct response to the current IASB discussion paper would be, or, indeed, the wider regulation of financial reporting, it would be foolish not to acknowledge the relevance of episodes such as Enron to the manner in which the regulation is incepted, developed, implemented and enforced. The initial response in the US and, in particular, the passing of the Sarbanes-Oxley Act in 2002 is well known, although much of the focus of Sarbanes-Oxley is on governance

⁸⁰ Most notably the Raptor transactions which the Powers report described thus: 'Enron's use of the Raptors allowed Enron to avoid reflecting almost \$1 billion in losses on its merchant investments over a period spanning just a little more than one year' [from the 3rd quarter of 2000 through to the 3rd quarter of 2001] (Powers, Troubh, & Winokur, 2002, p. 132).

rather than accounting per se. As referred to above, there has been a degree of tightening of the rules surrounding mark to market accounting in the USA, at least as far as they relate to energy transactions. IAS 39 in its present form, IFRS 7 *Financial Instruments: Disclosure* (IASB, 2005), SFAS 157 and the joint IASB/FASB projects relating to both fair value accounting and the underlying conceptual framework all postdate Enron, although the extent to which they have been directly influenced by the Enron saga is open to debate. As noted above, the initial reporting of the Enron collapse focused almost exclusively on the twin issues of off-balance sheet financing and improper related party transactions. The scale and nature of the accounting manipulations, including those relating to the use of mark to market accounting, took time to emerge; and when they did emerge, the temptation was for regulators and standard setters to perceive Enron as a near-unique event in terms of its particularity. We argue that this is over-simplistic and that many of the accounting issues brought into sharp relief by in-depth analysis of the Enron saga are generic and must be considered and treated as such. In this context we suggest that at, one level, the analysis above provides support for proposals for more fulsome breakdown and disclosure of the various components of income (for example, those put forward by Barker 2004). At this level the analysis would also support for the more comprehensive disclosures of the classifications of financial instruments and associated risks that are now contained within IFRS 7.

At another level, however, we think that the question as to whether or not further disclosure would have been effective in ensuring that the key assumptions underpinning Enron's reported profitability were identified and subjected to critical appraisal at an earlier stage than in fact they were is still an open one. As we have seen, the majority of the significant valuations (other than those relating to mainstream trading) were supported by independent certification or opinion as to their suitability as they were made. Furthermore, failure to make appropriate downward valuations, i.e. impairments - which a key aspect in the failure of Enron's financial reporting - would be far less visible than would upward valuations under the re-measurement disclosure proposals suggested by Barker (2004) and others. Similarly, further disclosures of the manner in which financial instruments and associated risks are accounted for would in the context of

Enron - where a significant proportion of the routine trading would require such disclosure - not necessarily have conveyed to users of the financial statements the vital importance of those valuations outside the umbrella of day to day trading. As noted above, Enron did make quite significant financial statement disclosures as to the extent to which it used fair valuations and mark to market accounting, but although these may have provided the opportunity for further questioning by analysts and others this questioning was, until the company was in its final throes, at best muted.

Perhaps a final irony is that, whereas Solomons (1961) predicted that measures of profit and earnings would decline in importance,⁸¹ it was because Enron was, according to its final published financial statements, ‘laser focused on earnings per share’⁸² that necessitated, at least from the perspective of Enron’s management, the use of fair valuation and mark to market accounting in a manner which was, arguably, far removed from that which was appropriate. If markets continue to attach such importance to ‘headline’ income numbers (or if management believe that they do), and if financial and other institutions are prepared to facilitate management desires to represent their own perceptions or beliefs as to what these numbers should be, then, on the basis of the case study evidence adduced above, individuals and standard setters should be cautious with regard to expectations that the wider introduction of fair value⁸³ and mark to market accounting will in fact significantly improve financial reporting and, ultimately, economic decision making.

⁸¹ ‘Each of us sees the future differently no doubt. But my own guess is that, so far as the history of accounting is concerned, the next twenty-five years may subsequently be seen to have been the twilight of income measurement.’ Solomons (1961, p.383).

⁸² Enron Annual Report 2000, p.2.

⁸³ Barker (2004, p.159) notes that ‘standard setting is moving inexorably toward a fair value model, making the concept of earnings increasingly difficult to interpret.’

Appendix

The combined effect of the mixture of artificial transactions entered into and accounting practice employed by Enron designed to test the very limits of GAAP can be seen in the estimates made in the Bankruptcy Examiner's report of the extent to which the various transactions under investigation distorted earnings, cash flows and balance sheet recognition of assets and liabilities in the final set of audited accounts prepared by Enron - those for the year ended 31 December 2000.

	<u>Net Income</u>	<u>Funds flow from operations</u>	<u>Total assets</u>	<u>Debt</u>
As reported	<u>\$ 979.0</u>	<u>\$ 3,010.0</u>	<u>\$ 65,503.0</u>	<u>\$10,229.0</u>
Adjustments for:				
FAS 140 transactions: (‘sale’ of assets to unconsolidated SPEs)	(351.6)	(1,158.3)	812.5	1,353.4
Tax transactions	(269.1)	(60.6)	-	-
Non-economic hedges	(345.7)	-	(867.0)	(150.0)
Share trusts (non- consolidation vehicles)	29.7	(418.0)	4,178.0	4,871.0
Minority interests (debt represented as minority interest)	-	-	-	1,740.0
Prepay transactions	<u>-</u>	<u>(1,527.0)</u>	<u>-</u>	<u>4,016.3</u>
Total adjustments	<u>(936.7)</u>	<u>(3,163.9)</u>	<u>4,123.5</u>	<u>11,830.7</u>
Total after adjustments	<u>\$ 42.3</u>	<u>\$ (153.9)</u>	<u>\$ 69,626.5</u>	<u>\$22,059.7</u>
Adjustment as % of amount originally reported	(96%)	(105%)	6%	116%

Reproduced from Batson (2003a, p.48)

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