Q: Please provide a copy of Dr. Cannon's paper entitled "Cyclically-Normalized, Real Economic Earnings" – QSB monograph (2003).

A: The requested document is attached.

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CYCLICALLY-NORMALIZED, REAL ECONOMIC EARNINGS

I. INTRODUCTION

This note examines one of the key components involved in the market valuation of the common shares of on-going, publicly-traded corporations. The shareholders of these firms have a pro rata ownership stake in the net income stream generated by their firms in perpetuity. The economic value or market value they attach to these ownership claims - as represented by the common shares of these firms - reflects the present discounted value of these future income streams, as assessed in the light of current and expected future market conditions.

In order for a shareholder or securities analyst to assess the true or intrinsic value of a firm's shares, then, he or she must estimate the two components that, in combination, determine this value - namely, (1) the income stream component and (2) the present-valuing factor. It is generally agreed by most academics and practitioners that the income stream variable that investors *should* attach a value to is the firm's "cyclically-normalized, real economic earnings" stream. The discount rate used to present-value, or to *capitalize*, the expected future, real economic earnings stream is called the "capitalization rate". The capitalization rate appropriate for a particular firm is a function of the perceived characteristics of its real economic income stream as well as prevailing market factors which influence the valuations of all shares in the market or in a particular segment of it. The essential differences among common stock valuation models reside in how this capitalization rate should be determined. We will *not*, however, examine the capitalization rate in this note. Rather we shall focus on the factor which, in one form or another, is common to most widely-used stock valuation models - namely, cyclically-normalized, real economic earnings.

II. DEFINITIONS

Cyclically-normalized simply refers to removing the cyclical elements contributing to the fluctuation in some series of numbers sequenced consecutively over time. It is reasonable to expect that the earning power of a firm, all other things being equal, will be greater during booming economic times, when the demand for its products/services is high and price increases can be implemented more easily, then it will be during depressed economic conditions, when the demand for its products/services is less buoyant. However, share prices reflect the present value of the firm's earnings stream for all periods into the perpetual future - some of which will be characterized by expansionary economic times and some by recessionary conditions. By

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This note was prepared by Dr. William T. Cannon for class use.

cyclically-normalizing the firm's earnings stream, the analyst is attempting to assess what the firm's earning power was, or is likely to be, under *normal* economic conditions, where *normal* simply means an average of the favourable and unfavourable cyclical environments experienced over time. This one "normalized" value can then be employed in the stock valuation model instead of requiring the securities analyst to forecast separate, non-uniform earnings levels for each future time period to infinity.

The concept of the **real economic earnings** of a company and/or its common shares is straight-forward in theory but considerably slipperier to pin down in practice. What follows are four definitions of real economic earnings starting with the most theoretically-precise, but least operational, of the accepted definitions and continuing on with progressively less-theoretically-comprehensive, but easier-to-operationalize, definitions.

The **real economic earnings** of a company (or its shares) during a given period can be defined as ....

(1) the maximum amount of consumption opportunities that can be withdrawn from the company (its shares), during the period, without diminishing the consumption opportunities that can be obtained from it (them) in future periods; or

(2) the maximum amount that can be withdrawn from the firm (firm's shares) and consumed by the owners, during the period, without diminishing or impairing the firm's (shares') future earning capability relative to the current level; or

(3) the maximum level of dividends the firm can pay out, during the period, without diminishing/impairing its ability to earn and pay out the same level of dividends in the future; or

(4) the firm's maximum, long-run, sustainable level of dividends, at any given time.

Some of the *defining implications* of these definitions can be expressed as follows:

(a) In the absence of cyclical economic effects, if a firm pays out to its shareholders each year in the form of dividends an amount of money that is precisely equal to its real economic earnings, then we should expect its real economic earnings in subsequent years to remain the same as they currently are. In this situation the firm will have no real economic retained earnings (i.e., REREs) on which to build earnings *growth*.

(b) In the absence of cyclical influences, if a firm pays out dividends in an amount that exceeds its real economic earnings - and therefore has negative REREs - it will be diminishing its real earning potential and can expect to have reduced real earnings in subsequent periods.

(c) In the absence of cyclical effects, if a firm pays out dividends that are less than its real economic income - and therefore retains a positive level of REREs - it can expect its real economic earnings to be higher in subsequent periods by virtue of the re-investment of the REREs, at a positive rate of return, to expand/enhance the firm's earning power. Furthermore, in an efficient-capital-market environment, the total market value of the firm's shares can be expected to rise in proportion to the rate of return investors expect to earn on

these re-invested REREs. In particular, the increment in total market value will equal the amount of the REREs if the expected rate of return on the re-invested equity just equals the cost of equity capital associated with the new investments. In other words, the present market value of the expected returns on a dollar's worth of REREs will be one dollar if these retained earnings are re-invested at a rate of return that is expected just to compensate shareholders for the associated equity risk of these investments.

Recognizing that the real economic earnings figure is intended for use in estimating a firm's share value, the amounts of consumption opportunities and/or dividend payments referred to in the above definitions and subsequent discussion are *current dollar* amounts, not *constant dollar* values, because share prices themselves are invariably quoted in current dollar terms.

There is one more definition we need in order to help clarify the concept of real economic earnings. The rationale for the accountants' incorporation of a depreciation expense item in company income statements is the recognition that a company's earning power will decline over time unless it makes periodic investments to up-grade or replace its aging and out-of-date plant and equipment assets. Consequently, some amount must be set aside each year to finance these expenditures, and this portion of the firm's net cash inflow can not legitimately be considered to be earnings since it does not reflect an *increase* in the firm's value but simply an expenditure to prevent its value from falling. The accountant's definition of depreciation focuses exclusively on the gradual erosion in the productive capacity of the firm's fixed assets and, as we shall discuss in detail later, the values recorded for it are subject to considerable judgment and manipulation to satisfy accounting, regulatory, and taxation requirements.

The economist's/securities analyst's definition of depreciation - what we call **real economic depreciation** - is quite different from that of the accountant. Securities analysts realize that, in order to preserve their real earning power and, hence, market value in a rapidly changing technological and competitive environment, firms generally have to do more than regenerate their existing fixed-asset bases. For one thing, they have to embrace and invest in new technologies to remain cost-effective and quality-competitive. Moreover, fixed assets are not the only source of corporate earnings generation: companies have to invest in motivating, and up-grading the skills of, their employees; they have to devote resources to research and development to improve their products and processes; and they have to promote their products and services to maintain and grow their sales in the face of competitive moves by their rivals. Some of these expenditures to remain competitive will already be charged off as expenses against current sales revenues. Others, however, may not be and may simply be financed from the firm's retained earnings (stored as "cash" on the asset side of the balance sheet).

If the funds to finance these outlays - which essentially serve to *preserve but not enhance* the firm's future earning power - are drawn from earnings, then this portion of accounting earnings is not real earnings in the sense that it does not represent *added value* to the firm. In effect, this portion of earnings should, in the eyes of the economist or securities analyst, more appropriately have been considered as part of depreciation in the broadest sense.

This leads us to the definition of **real economic depreciation** - namely, "that amount of replacement or defensive investment in those factors which generate income and value for the firm, *at current prices*, that is just necessary to maintain the current real earning capability of the firm." As indicated above, this investment may be in the form of an expenditure on plant and

equipment, a technological licence, an advertising campaign, an employee training program, or anything else that sustains the long-run earning potential of the firm. **All other things being equal, if a firm's accounting depreciation under-provides for its real economic depreciation, then its accounting earnings will likely overstate its real economic earnings, and vice versa.**

III. WHY THE ACCOUNTANT'S INCOME CALCULATION IS NOT LIKELY TO BE A RELIABLE GUIDE TO REAL ECONOMIC EARNINGS

Corporate financial statements are prepared using what are termed "generally accepted accounting principles (GAAP)". In Canada, the Canadian Institute of Chartered Accountants (CICA), through its Accounting Standards Committee, promulgates opinions on which practices and procedures are acceptable in particular circumstances and which are not. Within these overall guidelines, however, there are many different accounting procedures which may legitimately be used to portray the same business transaction. The choice of the particular procedure used is often left to management's discretion. Not infrequently, however, tax authorities, securities regulators, other government agencies, and/or public utility regulators will prescribe the procedure to be employed in particular situations or for particular purposes. The point is that there are usually many different ways of reporting a given corporate event, only some of which will appropriately capture the relevant economic impact from an investor's stock-valuation perspective.

Furthermore, it is important to remember that accountants serve many masters and financial statements are prepared for many purposes - only one of which is to provide investors with the information they need to assess the market value of the firm. Company financial statements are prepared by internal accountants who are employed by, and report to, the firm's senior management. Independent outside auditors merely review these statements and express an opinion about their accuracy and "fairness". However, although auditors are *approved* by a firm's shareholders, they are *selected* by management and, especially when times are lean, the fear of losing a lucrative auditing or consulting contract may cause auditing firms to be excessively accommodating of management's wishes. (See Appendix A at the end of this note for some prominent notorious examples of this phenomenon.) Consequently, within the latitude provided by the CICA guidelines, corporate accountants will exercise considerable freedom to make judgments and adopt procedures that, to whatever extent is considered tolerable, paint the company's picture the way senior management wishes it to be painted. While company accountants generally appreciate the flexibility or latitude that GAAP rules permit, many securities analysts and investors, as well as the Ontario Securities Commission, are worried that this "latitude" is unnecessarily wide and is being abused too frequently by companies to unfairly enhance their financial appearance.

For example, management may be anxious to show investors a pattern of earnings growing in a stable and predictable way from quarter to quarter. To achieve this for a quarter which might otherwise reveal a decline in earnings, the company accountant might be encouraged to invent some earnings by recording the sale of some asset as "earnings", or revising the assumptions used for inventory valuation or pension funding, or by liquidating some reserve suddenly judged to be no longer necessary, or by accelerating their recognition as sales some of the proceeds expected on contracts yet to be completed, etc. In 1991, for example, General

Electric in the U.S. - which prides itself on the earnings growth stability it achieves from its highly-diversified operations - was able to report an earnings increase, instead of a decrease, only because it liquidated part of its LIFO reserves and changed the assumptions underlying its pension-plan accruals - judgmental adjustments that the chairman's letter to shareholders conveniently failed to mention. A firm can also easily (and quietly) orchestrate its reported earnings by changing: its estimate of warranty expenses; its expectation for the volume of goods to be returned; its restructuring liabilities; its allowance for doubtful accounts; and/or its loan-loss reserves.

A firm's chief financial officer (CFO) and its chief accountant may also initiate "window dressing" transactions just prior to the end of the reporting period to make the statements appear in a more favourable light from management's perspective. For example, these officers may temporarily reduce the firm's bank loan balance by extending its payables and depleting its cash reserves in order to make its end-of-quarter (or year) working capital position appear more attractive. To the same effect, they may also persuade the firm's banker to extend the term of some outstanding bank loans to a point just beyond the one-year threshold for classifying them as current liabilities - thus improving the firm's current ratio by reducing its current liabilities.

On the income statement, the firm's earnings picture may be presented in a more favourable light if those areas of the company which have experienced losses, but which the firm still owns and operates, are reclassified as "discontinued operations" - an accounting manoeuvre that the firm may legitimately invoke if its management "has the intention of" disposing of these operations within one year. A deception much harder to detect occurs when a company delays recognizing loses on its marketable securities portfolio by reclassifying these securities from current assets to long-term investments. Current assets (which the company intends to buy or sell within a year) must be reported at the lower of their cost or current market values, while long-term investments must be reported at their historical costs. The reclassification - which can be justified simply on the basis of management's holding-period intention - allows the firm to avoid reporting any losses on these investments until they are sold.

In other cases, when management cannot avoid reporting disappointing results for a poor year, the company accountant will be instructed to use this opportunity to write off any troubled asset or enterprise or doubtful accounts - with the effect of exacerbating the reported losses for the poor year but building a foundation for subsequent earnings growth by reducing expenses and write offs in future years. (This is also often done in the first year of a CEO's reign, so that responsibility for the "losses" can implicitly be pinned on the out-going executives while the new CEO sets the stage for a more-favourable-than-otherwise future earnings performance.)

Top managements will also usually ask the company's financial officers to account for transactions in the manner that minimizes current tax liabilities, independent of whether the procedure best reflects the economic reality of the situation or not. The classification of leasing transactions and the choice of depreciation method are two areas where accounting judgments are frequently prejudiced by their income tax implications.

While company accountants will, in the first instance, seek to satisfy the wishes of their corporate superiors, they may also be required to follow the rules set down for them by external agencies or regularity bodies while trying to stay within the bounds set by their own professional organizations. These external agencies and regulatory bodies have their own purposes for the

accounting information they seek - purposes that are not necessarily congruent with establishing a sensible basis for the economic valuation of the firm. For example, the accounting information reported by firms which sought government funding through the Federal Government's fraud-beset and now abandoned Scientific Research and Investment Tax Credit program was unlikely to have provided a reliable basis for stock valuation purposes. An analyst would want to be similarly cautious when interpreting the accounting information provided by a diversified public utility in the course of a regulatory rate hearing. Here experience has shown that there is a great temptation to allocate costs to the regulated side of the business - where these costs can easily be recovered from the regulatory-board-sanctioned rates charged to the utility's captive customers - while understating the costs and inflating the profits on the non-regulated operations, whose equity returns are not held in check by regulatory decisions.

Even more fundamentally, the accountants' earnings concept is wrong-headed as far as the securities analyst is concerned. The accountant's earnings figure is meant to measure the period-to-period change in a firm's book value, since the *value* of a company, in the accountant's eyes, is simply its accounting net worth or net book value. However, *accounting book value* is a notoriously inadequate and misleading measure of the *economic value* of most firms, especially on-going, growing firms operating in an inflationary environment. The reasons for this are well-known. First, the inadequacies in the accountant's income calculation from a real economic perspective get accumulated in various balance sheet accounts over time and thereby distort the net book value figure. For example, if accounting depreciation expenses are not based in economic reality, then the net fixed asset value cannot be expected to reflect current market values. Inflation will cause a further distortion, since the accounting value for net fixed assets will reflect historical costs, while market values are more likely to reflect current replacement costs. Furthermore, book values do not include many intangibles, such as a firm's "knowledge and organizational assets", which are so crucial to its on-going prosperity. Finally, the accountant's book value net worth figure can in no way reflect the growth prospects or risk exposure of the firm - factors which will, however, undoubtedly influence its market value.

In contrast to the accountant's quest, for the purposes of economic valuation we want to identify an earnings figure that reflects changes in the firm's economic value or present market value over the accounting period. Consequently, **one of the most important tasks of the securities analyst is to estimate a firm's real economic earnings over time - the income stream that is relevant for investors trying to gauge the long-run, going-concern, intrinsic value of the firm - by using both the available accounting data as well as other pertinent information.** Furthermore, to facilitate inter-company comparisons within the valuation process, the securities analyst must try to standardize these earnings estimates across the companies he/she follows. This may require a different set of adjustments for each firm, since these firms may have chosen different accounting procedures and adopted different underlying assumptions in preparing their original financial statements.

Beyond these conceptual reasons why the accountant's income figure cannot generally be considered to be a reliable reflection of its real economic earning capability, there is a growing recognition that the financial information reported by many Canadian and U.S. corporations is consciously managed or manipulated in ways that obscure and distort the true picture of corporate earnings. In 1995, a committee of the Toronto Stock Exchange surveyed 75 securities analysts and 1200 members of the Canadian Shareholders Association. Nearly 60% of the analysts identified insufficient disclosure as the biggest communications-related problem for

Canadian firms, while half cited untimely disclosure as a problem and 35% said *misleading* disclosure was a serious concern. Furthermore, 88% of the analysts judged that corporate disclosure was better in the U.S. and 60% suggested that disclosure by Canadian firms would improve if shareholders had the right to sue for damages related to inaccurate information. With respect to the shareholders surveyed, less than half believed that companies comply fully with disclosure requirements, particularly when releasing negative news.

If, as Canadian shareholders appears to believe, financial disclosure is better in the U.S. than in Canada, then a 1998 confidential survey of CFOs of major U.S. corporations at a *Business Week* conference provides some sobering grist for reflection. Twelve percent of the CFOs surveyed admitted that they had mis-represented corporate financial results and a full 55% said that they too had been asked by senior management to mis-represent results but had fought off the demand. It is not surprising, therefore, that U.S. Securities and Exchange Commission (SEC) Chairman Arthur Levitt stated, in a September 28, 1998 speech, that "increasingly, I have become concerned that the motivation to meet Wall Street earnings expectations may be overriding common sense business practices. Too many corporate managers, auditors, and analysts are participants in a game of nods and winks. In the zeal to satisfy consensus earnings estimates and project a smooth earnings path, wishful thinking may be winning the day over faithful representation."

In its annual reviews of financial statements and elsewhere, the Ontario Securities Commission (OSC) has also been expressing its concern with respect to the fairness and appropriateness of corporate financial statement disclosure by Canadian companies. In a report released early in 1992, the OSC cautioned corporations not to mislead investors and creditors by using accounting rules to unfairly improve their income statements or balance sheets. Reflecting on the effects of the 1990-91 recession, the office of the Chief Accountant warned that, in "troubled times," there is a danger that firms may stretch accounting rules to stabilize earnings. The report stated that "accounting policies should not be used to manage earnings." It went on to say that the increasing number of writedowns, huge operating losses, and major restructuring programs "raise questions as to whether reasonable professional judgment has been exercised" in good economic times in determining accounting practices, policies, and estimates. The OSC's report was especially critical of transactions being structured to use accounting treatments that either overstate or understate the true financial impact of particular deals. The OSC also reported that companies continue to inflate published profits by unreasonably capitalizing costs, using inappropriate amortization periods, and failing to take writedowns as soon as they are warranted.

The OSC's concerns continued through the latter years of the 1990s and on into 2002. In a June 1999 speech to the Institute of Chartered Accountants of Ontario, OSC Chairman David Brown warned accountants to clean up their "aggressive" accounting practices. He stated that there continued to be an "erosion of confidence" in audited financial statements on the part of investors. He went on to say that OSC investigators saw many examples of companies that either overstated or understated income and, while these instances fell short of outright fraud, they often involved "interpretations of accounting standards beyond all reasonable limits." Moreover, he opined that some accounting firms were treating auditing work as a "loss leader" to attract clients to their more lucrative consulting practices. Again, in November 1999, David Brown accused some auditors of stretching GAAP rules "all out of shape" in their efforts to overstate current income or, alternatively, to "make the future look better" by understating current income or by taking excessive one-time charges for reorganizations or restructurings. Then, in March 2002,

subsequent to the Enron debacle, David Brown again admonished the accounting profession in a speech before the Conference Board of Canada. He warned that the OSC would use its powers to override the accounting principles set by the accounting professional bodies if they did not make the changes necessary to ensure that an Enron-type collapse could not happen in Canada. He expressed the OSC's desire to see a much more "robust" set of accounting rules established to give investors an accurate picture of the financial condition of every firm, such that when auditors signed off on a company's financial statements they would be fully satisfied that the figures truly reflected "a fair and balanced representation of the financial situation," not just that GAAP rules had been followed to the letter. He observed that accounting rules had drafted from a general statement of principles to a rules-based approach – especially in the U.S. – which had allowed auditors to approve financial statements that complied with the rules, but did not necessarily reflect reality.

Following from David Brown's last observation, perhaps the most convincing piece of evidence that has come to light that accounting numbers cannot always be relied upon to reflect the *economic reality* of a firm's affairs is to be found in the former written policies and procedures of the now-disgraced Enron Corporation. The quote below is taken from page 304 of the book entitled "Infectious Greed" written by Frank Partnoy and published by Times Books, Henry Holt and Company, LLC of New York in 2003.

> "Enron's risk-management manual explicitly encouraged employees to adhere to the letter of accounting rules, even if they were contrary to economic reality. It stated: "Reported earnings follow the rules and principles of accounting. The results do not always create measures consistent with underlying economics. However, corporate management's performance is generally measured by accounting income, not underlying economics. Risk management strategies are therefore directed at accounting rather than economic performance." In other words, Enron managers were encouraged to focus on the accounting effect of their decisions more than their real economic impact. This was true even when Enron was dealing with issues of risk, where real economic impact should have mattered more to the company than accounting disclosures."

The sad reality revealed by the stunning collapses of Enron, Global Crossings, WorldCom, and many other prominent firms during the early years of the 21st century (and the near-implosion of other companies such as Tyco International) is that almost no one with the *capacity* to look out for corporate shareholders and ensure that accounting statements bear some resemblance to economic reality has any significant *net incentive* to do so. Whatever the economic reality, **senior corporate managers** want the reported figures to meet or exceed investors' expectations, thereby propelling the prices of their firms' shares higher and inflating the values of management's options. **Internal accountants** serve, and are paid by, senior management, and **internal whistleblowers** are virtually never applauded or rewarded, and may be prosecuted if they are deemed to have been "tipping" anyone with respect to "inside information." **External accountants** are conflicted by audit fees and by the fees their organizations receive for consulting work, and can hide behind the specious (but legal) claim that they can only work with the numbers that management provide. **Securities analysts** on the "sell side" are paid to assist their investment banking cousins attract clients and flog securities, and not to provide accurate assessments of the financial health of the companies they follow – as the exploits of Smith Barney's Jack Grubman in rating the shares of AT&T and WorldCom illustrate. **Lenders** and **investment bankers** in performing their "due diligence" on clients have

little incentive to police the risks they uncover or ferret out deception and fraud since this would jeopardize the enormous fees they receive for their lending and investment banking services and, besides, they have typically off-loaded many of the risks they have turned a blind eye to onto unsuspecting third parties by credit derivative deals. Nor do the **credit rating agencies** provide much solace to shareholders. They essentially face no threat of competition even if their ratings are wrong or are adjusted too late to spare investors the market's carnage; they can be blinded by the fees they receive for their ratings; and their analysts are relatively poorly paid. When their analysts, who typically toil in obscurity, final gain the experience or insight to figure out the deceptive accounting practices of the firms they are rating; they get hired away at twice the salary by these companies or their investment bankers. And then, finally, there are the **politicians** whose incentive and ability to protect shareholders is compromised: by their lack of understanding of the issues; by the efforts of the well-paid lobbyists working on behalf of those who are benefiting from accounting deceptions; and possibly by corporate campaign donations.

So, in the final analysis, there may be only two classes of financial market participants who can be relied upon to look out for shareholders – namely, "buy-side" security analysts who are working for investment management firms that are not conflicted with investment banking connections, and individual investors themselves. For members of the former group, the task of thorough investment analysis may be "intolerably boring and over-exacting" (see Appendix B for a commentary on this). For members of the latter group (including yourselves) to be effective in protecting them(your)selves, however, they/you must be willing to plow through 100-page annual reports and understand all the points covered in the next section of this note.

IV. AREAS WHERE IT MAY BE NECESSARY TO ADJUST THE ACCOUNTANT'S FIGURES TO OBTAIN A BETTER ESTIMATE OF REAL ECONOMIC EARNINGS

In this section we shall highlight those parts of a firm's balance sheet and income statement where it is frequently necessary to make an adjustment to the accountant's figures to obtain values which more closely reflect a firm's real, on-going, economic earning power from a market-valuation perspective.

(1) Timing the Recognition of Sales Revenues and Associated Costs

When a firm signs a contract to deliver goods or services, some or all of the expected revenue from the contract may be received upfront in the form of cash or a promissory note. Alternately, some or all of the cash income from the contract may be received on or after the completion of the contract. However, because accounting statements are prepared on an accrual basis and not on a cash basis, in any of these situations the accountant for the firm fulfilling the contract has considerable leeway in deciding when to record as sales revenues the actual or expected cash inflows from the contract. The theoretically proper accounting principle is to match, as closely as possible, the timing of the recognition of revenues with the costs associated with attracting these revenues and fulfilling the contract requirements associated with these revenues.

Aggressive accounting designed to enhance near-term reported earnings would dictate recording some or all of the expected contract cash inflows as revenues as soon as the contract is signed and in advance of the receipt of any cash and/or the delivery of any of the contracted

goods or services. In effect, the sales revenues would be recorded in an early accounting period, while a disproportionate share of the costs and outlays necessary to satisfy the contract would be recorded in later accounting periods. For example, one Canadian theatrical production company, Livent Inc., made a practice of taking into income the proceeds from advance ticket sales before the associated production had begun to run, while it capitalized, as "pre-production costs", the substantial pre-opening expenses for its shows. Cost recovery began when the shows opened. The company recovered pre-production costs dollar for dollar from operating revenue until all costs were recouped and written off. This process absorbed all of the revenue stream while it progressed. Thereafter, revenues were reported as earnings after deduction of taxes and day-to-day expenses. At no time during the process, however, did the reported profit during any accounting period provide a realistic picture of the likely profitability of any show in its entirety. Investors could cobble together an estimate of this only after each show's run was completed.

On the other hand, conservative accounting would recognize that revenues will really not be "earned" until the contracted work has been done and the promised goods and services are delivered. Furthermore, because of the possibility of the customer's insolvency and bankruptcy, the sales revenues will be realized for certain only when the customer's cheque has been successfully cashed. Consequently, a conservative accountant may wait until the contract is completed and most or all of the customer's payments have been received before recording the contract inflows as sales revenues. (Any monies received in advance of this are likely to be recorded as a "cash advance" asset on the balance sheet against a corresponding liability to deliver the contracted goods/services.)

Neither of the above accounting treatments, though perfectly legitimate in particular circumstances, is likely to provide the best estimate of the period-by-period economic or market-value impact of this contract on the firm or its shareholders. Under the aggressive accounting scenario, the contract will appear to be extremely profitable during the initial accounting period; under the conservative scenario, it will appear to have a zero to negative profit impact for the initial periods (or until the contract is completed). The true economic effect is likely to be somewhere in between.

The accounting treatment that is likely to most nearly mirror the economic, market-value impact of the contract is the one which matches the recognition of contract-related receipts as sales revenues, on a pro rata basis, to the time periods during which the firm incurs costs to satisfy the sales contract. For example, if the firm incurs 60% of the costs that it expects will be necessary to satisfy the contract during a particular accounting period, then, to provide its shareholders with the most realistic picture of the earnings impact of the project/contract, it should record as sales revenues 60% of the total receipts it expects to realize on the contract. If the firm's accountant has not done this, then it may be appropriate for the external securities analyst or investor to make some compensating adjustment to the firm's reported income to arrive at a better estimate of its on-going, real economic earning power.

Wickes PLC, the British building materials company, provides an example of what can happen if investors become aware that a firm is not matching the timing of its revenue/receipt recognition with that of the expenditures necessary to justify or "earn" the receipts. Wickes suppliers give rebates to Wickes contingent on Wickes achieving certain sales targets for their products. Apparently, in its 1995 profit calculation, Wickes included rebates ("supplier contributions") as part of its revenues for which the associated sales costs had not been booked

(in 1995), having the effect of boosting Wickes' 1995 reported profit in an unwarranted fashion. The day this "accounting error" was acknowledged by Wickes' chairman, Wickes' shares dived almost 40% in value during the 23 minutes before trading in them on the London Stock Exchange was suspended.

In addition to the Livent example described above, there are numerous instances where Canadian and U.S. firms have been accused of mis-representing their financial performances by failing to observe the matching of revenue and expense recognition. In none of these cases did corporate management draw this *mismatching* to the attention of investors. Biovail's treatment of its purchase of a drug called Teveten from Solvay Phamaceuticals in 2002 is a case in point. The $95 million purchase price (i.e., cost) was set up to be amortized (spread out) over 20 years as an expense on Biovail's income statement. However, the two companies struck a marketing agreement whereby Solvay pays Biovail $2.5 million a quarter for two years, which Biovail runs through its income statement as revenue. This credit more than offsets the amortization expense of $1.2 million; the acquisition, therefore, appears to have a *negative* cost for two years. By structuring the deal as it did, Biovail, the largest Canadian drug company, effectively "bought" an income enhancement for two years.

CGI Group, the Canadian provider of corporate IT outsourcing services, has also drawn analyst criticism for its mismatched treatment of the enticements it gives to attract clients. CGI accounts for outsourcing contracts as purchase contracts, and enticements are recorded as deferred credit liabilities on the balance sheet to be amortized into revenue. For example, when CGI took over the IT work of the Desjardins credit union, it gave Desjardin $14 million in CGI warrants and allocated $68 million to deferred credits. The criticism, however, is that while the contract had a 10-year life, and contract costs and asset depreciation were thus amortized over the same 10 years, CGI planned to bring the deferred credits back into revenues over the initial two years of the contract – in effect, front-loading the apparent profits from this transaction.

Frank Partnoy, on pages 190-91 of his book "Infectious Greed," describes an infamous case of one U.S. company playing fast and loose with the matching principle. The company was CUC International (later to be known as Cendant). It operated Comp-U-Card and numerous other "clubs" which acted as intermediaries between consumers and product/service providers. CUC made its money by selling club memberships (to 68 million members at one point) entitling holders to new products and discount prices. As Partnoy relates, ...

> "From the beginning, Comp-U-Card executives faced a difficult problem: how should they record revenues and expenses associated with membership sales? Suppose CUC sells a 3-year membership that costs $60 per year, payable quarterly. How much revenue should CUC recognize in its next quarterly financial report? The entire $180 it expected to receive during the three years of membership? Or just the $15 it expected to receive in the first quarter? Or some intermediate amount, perhaps adjusted for expected cancellations, interest rates, or inflation? Expenses weren't any easier. How much of CUC's salaries, overhead costs, and other solicitation expenses should it allocate a membership it sold? And when?
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> CUC managers developed a grid to project how much revenue and expenses to reflect over time, based on the company's experiences with cancellations and costs. The goal was to match membership-sales revenues with corresponding expenses. Such a grid was precisely what investors and analysts would expect from a company facing thorny questions about

> revenues and expenses. So long as CUC used the grid consistently, it would be possible to tract the company's business accurately over time.
>
> However, ... CUC's executives wouldn't necessarily benefit from disclosing accurate earnings. By 1994, CUC's membership growth was slowing, and earnings were volatile. If CUC could "manage" its earnings to meet the expectations of analysts and investors, its stock would be more valuable. ....
>
> To please the analysts, CUC began manipulating its grids, adding "allocation" columns, so that executives could manually shift revenues from one period to another. But CUC executives took earnings management a step farther, sometimes ignoring the grids entirely and, instead, simply trying into the computer spreadsheet new numbers that tracked CUC's earnings to better match the expectations of analysts. Those numbers magically became the firm's revenues and expenses for a given period. ....
>
> CUC's executives refined their earnings-management scheme during the mid-1990s, until they were recognizing tens of millions of dollars in additional revenues prematurely and pushing similar amounts of expenses into the future. For example, when Comp-U-Card members cancelled memberships during the fourth quarter of a year, CUC would hold that cancellation off the books until the following year. Executives also began stretching expenses associated with memberships across 3 years, instead of recognizing them within the year they were sold."

For these and other transgressions, Walter Forbes, CUC's chairman, and other senior CUC executives were indicted for fraud in 2001. Curiously, CUC's auditors, Ernst & Young, had either not noticed or not objected to CUC's earnings manipulations.

During the "tech bubble" of 1999-2001, the OSC became concerned about the revenue-reporting practices of many software and internet companies. In a report issued in March 2001, the OSC concluded that the boilerplate accounting disclaimer that "revenue is recognized when earned" is meaningless for many new economy firms and is not nearly an adequate explanation of a firm's revenue-recognition policies. The OSC study also criticized some specific accounting practices among the firms it surveyed. For example, one of the companies counted revenue when products were shipped, even though they still had to be installed by the vendor. Another software firm counted revenue when its products were sent to customers, even though extensive customization still had to be done. In other cases, firms counted revenue for products that could be returned by the customer later on, making their numbers unreliable. Corel Corp. and its shareholders came to grief for this kind of accounting treatment.

Another kind of *mismatching* occurs when companies record sales revenues while ignoring associated future expenses. One of the most flagrant examples of this is when firms fail to account for the costs of satisfying product warranties at the time when goods are sold.

(2) Inflating Reported Revenues

Securities analysts look at revenue growth as well as earnings when they judge a firm's financial performance and future prospects. Recognizing this, companies, with the acquiescence of their accountants, have found numerous ways to inflate their reported revenues so that their apparent revenues and associated growth rates are greater than the underlying economic reality.

(a) Channel Stuffing

The classic way to make one period's sales higher than their truly sustainable level is to persuade (bribe?) distributors and/or final customers to buy more of the firm's products than they currently need – essentially, increasing today's sales by accelerating (robbing from) future sales. Sunbeam, under the direction of "Chainsaw" Al Dunlap, is a notable example of this. Quoting from page 201 of Partnoy's "Infectious Greed," ...

> "In 1997, Sunbeam engaged in a variety of accounting games to inflate its income, including *channel stuffing* – stuffing its distribution channels with so many advance sales that there would be little revenue left in future periods. For example, just before the end of the first quarter, Sunbeam booked $1.5 million from sales of barbecue grills, even though it had promised the purchaser it could return any grills it did not sell (in fact, six months later, all of the grills were returned unsold). Sunbeam also began rewarding customers for agreeing to buy products before they needed them, so that Sunbeam could book the revenue earlier (again, purchasers had the right to return unsold products). ....
>
> [By the first quarter of 1998,] Sunbeam had borrowed too much from future earnings by channel stuffing, and now senior managers were receiving reports that customers held up to eighty weeks of Sunbeam's inventory – that meant those customers wouldn't need to buy anything else from the company for well over a year."

More recently (March 2003), pharmaceutical giant Bristol-Myers Squibb (BMS) restated its 1999, 2000, and 2001 results – erasing U.S.$2.5 billion of revenues and U.S.$900 million of profits – because of questionable sales practices that artificially boosted revenues. BMS's admission of "errors and inappropriate accounting" came after the SEC initiated a probe into the firm's affairs, focusing on how BMS had coaxed two major wholesalers with generous incentives into buying more of its drugs than they needed during the 3-year period.

Lest anyone imagine that channel stuffing is a new phenomenon, lawn-and-garden-care-products supplier O.M. Scott & Sons was found guilty of the same practice in the mid-1950s. Their experience became the subject of a famous Harvard Business School case study – which may have inadvertently taught thousands of aspiring executives *how to do it* rather than the *perils of doing it.*

(b) Vendor-Financed Sales

Another means of accelerating sales (and, hence, sales growth) from what would otherwise be their natural pace is for selling companies to offer vendor financing to their potential customers. Nortel, Lucent, and Cisco Systems were prominent participants in this activity during the telecom-tech boom. Credit-constrained companies that would not otherwise have been able to purchase these firms' products lined up to take advantage of this cheap financing, and the telecom equipment suppliers' revenues boom. Initially, at least, there was no up front recognition of some of the true costs of these "sales" -- namely, that the purchasers would go bankrupt and, by not repaying their loans, effectively negate the previously-booked revenues.

(c) Swap Transactions

To puff up their reported revenues after the turn of the millennium and give the illusion that their businesses were bigger and more successful (especially in terms of relative market shares) than they really were, energy trading firms such as Enron, Dynegy, Reliant Resources, and CMS Energy engaged in many questionable "round-trip energy swaps" with each other and their customers that had no other business purpose and no real economic impact on the firms involved - these were simply "wash" transactions.

During 2001 and 2002, U.S. telecommunications firms such as Global Crossing also engaged in a similar kind of revenue-enhancing deception. Frank Partnoy describes one such deal on pages 359-60 of "Infectious Greed."

> "In March 2001, [Enron and Global Crossing] entered into a long-term swap. On the surface, the swap appeared to be a fiber-optic deal, in which Enron paid for eight years of access to Global Crossing's fiber-optic network and Global Crossing purchased something called "network services" from Enron. Enron paid $17 million up front, whereas Global Crossing agreed to make monthly payments for eight years. In reality, the fiber-optic and network-services rights roughly cancelled each other, leaving only a $17 million "loan" from Enron with monthly "interest" payments to be made by Global Crossing. Global Crossing reported earnings from selling rights to its fiber-optic network, but did not report the "loan" as a liability. Enron reported $5 million of gains from the sale of network services, but did not record the fact that Global Crossing owed it $17 million. Both companies benefited from the appearance of high volumes of transactions in network rights."

Global Crossing and other telecom firms also used trades in "Indefeasible Rights of Use" (or IRUs) to artificially boost their reported revenues *and*, amazingly, their reported earnings. The scheme worked as follows. Quoting from pages 360-61 of "Infectious Greed":

> "In an IRU swap, two telecommunications companies agreed to exchange the rights to use bandwidth on different parts of their fiber-optic networks. One company might exchange the rights to use lines in New York for rights of roughly the same value in Kansas.
>
> The beauty of IRUs, from the perspective of a telecommunications company, was that accounting rules arguably permitted companies to treat the two legs of the swap differently, recording the revenue leg up front, while deferring the expense leg over time. In 1999, the SEC had published "Staff Accounting Bulletin No. 101" in an attempt to standardize the way companies recognized their revenues, and to ban revenue recognition practices that had deceived investors during the late 1990s. This bulletin set forth the requirements for when certain revenues should be recognized and for when certain costs should be spread over time. The bulletin was lengthy and complex; but, essentially, Global Crossing and other companies were using one portion of the bulletin to justify up-front recognition of revenues, while using another portion of the bulletin to justify spreading expenses over time. Global Crossing could argue that the incoming payments from the IRU were revenues, to be recognized right away, while the outgoing payments were a capital expense, to be spread over a period of several years. ....
>
> One $100 million IRU swap was with Qwest, a telecommunications company that had outbid

Global Crossing for U.S. West, one of the regional Bell companies created by the breakup of AT&T. Qwest then used the IRU swap technique on its own. During the first three quarters of 2001, Qwest sold $870 million of capacity and bought $868 million of capacity – to and from the same parties. These swaps appeared to be round-trip transactions, which served no purpose other than to inflate Qwest's revenues. A year later, on July 28, 2002, Qwest would file a billion-dollar-plus restatement, admitting that it had improperly recorded revenues from these trades."

In May 2002, the SEC launched a sweeping investigation into the above-described practices designed to pump up revenues.

Another example of inflating revenues inappropriately is outlined in the previously-mentioned OSC investigation of software and internet companies. The OSC described one internet retailer that took orders from customers, then placed a purchase order with a supplier who shipped the goods directly to the customer. The internet firm booked the entire value of the goods shipped as part of its revenue. The OSC countered that the firm should book as revenues only the sales commissions it received for these transactions.

(d) Mis-Classifying Revenue Sources

Like Bristol-Myers Squibb and Sunbeam, Xerox – the document company – admitted in June 2002 (after settling a SEC investigation with a U.S.$10 million penalty) to improperly accelerating the recognition of its equipment revenues by U.S.$2 billion, and inflating its reported pre-tax earnings by U.S.$1.4 billion, between the years 1997 and 2001. While some of this was accomplished via channel stuffing, most of the falsely-recorded equipment sales were the result of mis-classifying U.S.$5.1 billion of service, rental, document outsourcing, and financing revenues over the previous 5 years.

(e) Outright Fraud

In July 2001, the OSC filed allegations against former Livent executives Garth Drabinsky and Myron Gottlieb charging that they had falsified Livent's financial statements by, among other things, faking revenue sources. Livent, the OSC claimed, had signed agreements with several companies – including Dundee Realty Corp. and CIBC Wood Gundy – that appeared to bring in revenue to Livent. However, undisclosed "side deals" effectively reversed these transactions, so these revenues should not have been included on Livent's books.

(3) Expensing Versus Capitalizing Expenditures

While practices vary internationally depending on local GAAP and government regulations, there are many expenditure items which the firm's accountant, at his or her own choice, may either (a) write off as a current expense in the firm's current-period income statement or (b) capitalize on the firm's balance sheet and then "amortize" (i.e., write off against income) over future years. These items, such as research and development outlays, movie production expenses, petroleum exploration expenditures, and advertising campaign outlays, have both short-term and longer-term benefits and, as such, are neither solely or clearly a current expense or an asset. Their characterizations are often matters of managerial discretion and should therefore be carefully scrutinized by analysts and investors. (In the U.S., firms are required to expense all

R&D as it is incurred, while Canadian GAAP allows firms to capitalize and amortize development costs for which recovery through resulting revenues is highly probable. Under both Canadian and U.S. GAAP, all advertising outlays must be expensed as incurred.) Companies wishing to be appear conservative and to lessen current tax liabilities will err on the side of expensing as much as possible - which reduces reported, current-period income and lowers current tax liabilities. Companies wishing to show higher near-term income will, alternately, capitalize as many items as possible, expanding current-period earnings at the sacrifice of future income levels.

U.S.-based, waste-management-company Chambers Development Ltd. practiced an extreme form of this latter policy. Between 1988 and 1991, this company manufactured a pattern of rapidly rising earnings and net assets by capitalizing just about every conceivable expense that could be construed as having some longer-term benefit. Chambers' share price soared to a multiple of 40 times earnings as investors (including the author) were captivated by this meteoric growth record in an otherwise struggling industry. However, the day that the true nature of Chambers' policy with respect to capitalizing expenditures was revealed, its share price plummeted by 69% from U.S.$32 to $10, and then sank to the $3-4 range within a week or so - where it remained until the company was eventually taken over by another firm. Reconstructing Chambers' books with a more realistic expensing-versus-capitalizing policy revealed that the firm's (real economic) earnings had never emerged from negative territory. Chambers' senior management (including its controlling shareholder) paid U.S.$75 million to the SEC to settle a class action shareholders' misleading disclosure claim, and other fraudulent disclosure suits were pending when the author stopped following the story.

As we have already discussed, for presenting a realistic time-series of real economic earnings figures for valuation purposes, an analyst should try to match, in terms of accounting periods, the times when an expenditure is recorded and the times when the revenue-benefits from the expenditure are received and recorded. For example, when a pharmaceutical firm makes expenditures for research and development (R&D) which may result in a new drug which will bring in significant revenues to the firm over many years, rather than expense these R&D outlays, it would better reflect economic reality if the firm were to capitalize these R&D expenditures and then amortize them over the expected profitable sales horizon for the drug. While tax rules and corporate conservatism (not all R&D eventually results in profitable new products or processes) may cause many firms to expense R&D outlays, a securities analyst should probably capitalize and amortize at least some portion of current-period R&D expenses in constructing pro forma statements designed to more-closely approximate a firm's real economic earning capability over time. The same should be said for other expenditures which promise multiperiod benefits - such as employee training programs, advertising campaigns to introduce new products, resource exploration outlays, and movie, video, audio, and theatrical production expenses - that would not normally be categorized as long-term investments by the accounting profession.

However, analysts and investors should be aware that the discretion left to management and their corporate accountants in the area of capitalizing expenses has frequently, and sometimes fraudulently, been abused. An outcry rose from securities analysts when America Online (AOL) tried, in 1994 and 1995, to capitalize some of its customer acquisition costs. AOL argued (unsuccessfully) that the customers it was attracting through its promotional distribution of free software tended to become long-term subscribers and that these promotional costs were therefore really a long-term investment. Nevertheless, rightly or wrongly, AOL was accused of

earnings manipulation and forced to take a one-time U.S.$385 million charge off of customer acquisition costs.

On the other hand, accounting rules sometimes prevent companies from capitalizing expenses when such treatment might more nearly reflect the pattern of real economic income generation. For example, the rules forced U.S. cellular telephone companies to immediately expense the U.S.$250-$500 commissions they paid to retailers for every cell they sold, even though these customers frequently remained service subscribers for many years. On the other hand, U.S.-based R&D-intensive firms – such as pharmaceutical companies – may be able to circumvent the handicap of having to expense R&D expenditures (despite their long-term benefits) by transferring their scientists to a new private company and then acquiring it after their research has led to the development of new products. The R&D spending will thus not have to be expensed immediately on the public firm's income statement but will, rather, become capitalized on its balance sheet.

WorldCom Inc., the Mississippi-based provider of long-distance telecom services, undoubtedly holds title to the "mother of all transgressions" with respect to capitalizing what should properly have been considered normal current operating expenses – at least in the eyes of accountants. One pages 368-73 of "Infectious Greed," Frank Partnoy tells the story:

> "To save the day, [and allow WorldCom to meet analysts' expectations, WorldCom CFO] Scott Sullivan wangled an accounting fix that was even simpler than Cendant's retyping of revenues and expenses. During 2001 and the first quarter of 2002, Sullivan simply transferred some expenses from the firm's operating account to its capital account. The operating account included the day-to-day costs of doing business, such as wages or advertising; the capital account included investments in long-term projects, such as the construction of a new building. Because operating expenses were incurred right away, whereas capital expenses were spread over time, the effect of the transfers was to reduce WorldCom's current expenses, pushing them off into the future. With lower expenses, WorldCom showed higher earnings and, thereby, met expectations, even though, in truth, its business was declining.
>
> The expenses involved the firm's payments to other telecommunications companies to access their networks, known as *line costs*, for the right to access a telecommunications line. From an economic perspective, line costs were indistinguishable from the costs of building a network; .... companies could either build their own network or purchase rights to someone else's. But from an accounting perspective, line costs were unambiguously operating expenses, which should have been deducted from WorldCom's revenues during the quarter the expenses were incurred. A student in Accounting 101 who classified line costs as capital expenditures to be spread out over several years would have failed the class, even if she had an argument about why line costs and new network construction costs were equivalent. Yet that was precisely what WorldCom did – for five straight quarters. ....
>
> In Sullivan's defence, his argument for spreading out the line-cost expenses made some sense. After all, there was no economic difference between paying money to build your own network – the costs of which *were* spread out over time – and paying money to access the lines on someone else's network, any more than there was an economic difference between leasing a car for a period of time and borrowing money for the same period of time to buy the car. If the "investment" in someone else's lines would yield returns only over a period of years, then

it made sense to treat those costs as capital expenditures to be spread over several years. In fact, such a conclusion followed from one of the basic principles of accounting: matching the timing of revenues and expenses. If, as Sullivan claimed, revenues would occur over several years, then it made sense to record expenses over several years, too.

But economic reality didn't necessarily match accounting. .... If the established accounting practice was to treat line costs as operating expenses, including them in the current period, then it was *im*proper to spread those costs over time. .... Moreover, although Sullivan had argued that WorldCom's expenses should be delayed along with its revenues, the reality was that WorldCom's revenues weren't merely delayed; instead, they weren't coming in at all, because of trouble in the telecommunications industry.

The effect of the reclassification of line costs was devastating. WorldCom had reported 2001 earnings of $10.5 billion. Now, it would need to reduce that number to $6.3 billion, to account for the additional expenses from line costs.

Canada has also had its share of accounting mischief in this area. For example, in September 2003, it was revealed that Atlas Cold Storage Income Trust – one of Canada's larger income trusts – had inflated its reported income for 2001 and 2002 by improperly capitalizing $5.2 million of project-related operating expenses – chiefly salaries paid to employees who worked on expansion projects – recording them as "additions to capital assets" instead of writing them off as operating costs. The report by the accounting firm hired to investigate these improprieties concluded that "the overstatement of net income by management was consistent with an intent to improve the financial results, including distributable cash, of Atlas."

(4) Choice of Inventory Valuation Method

Under GAAP, companies can choose from a variety of different methods to value their inventories. These include first-in-first-out (FIFO), last-in-first-out (LIFO), specific identification, and weighted-average cost. During inflationary times, companies with constant or growing inventories can give an extra bounce to their reported earnings by adopting FIFO procedures which will match current sales proceeds at inflated prices with the inventory, and hence cost of goods, associated with some earlier period (first-in-first-out) when production costs were lower. This has the effect of incorporating within the current income figure the one-time, inflation-driven, capital gain on the firm's inventories. Indeed, if the inflation continues, the use of FIFO accounting will add an inventory-valuation gain to each period's reported earnings even though the inflation-related gain, in reality, occurs only once (since the FIFO-inventory sold must be replaced at the now-inflation-elevated production costs). These apparent, but unbankable, gains are often termed "phantom inventory profits." Nevertheless, while they often look impressive on the income statement, they have the negative consequences of increasing the firm's current income tax liabilities and making accounting profits more volatile from period to period.

In contrast, the LIFO inventory valuation approach presents investors with a much more realistic picture of a firm's true profitability during inflationary times. The LIFO method provides the closest cost-revenue match among the inventory valuation methods because it assumes that the most recent inventory valuations - last in - are used as the cost figure for goods sold - first out. Consequently, LIFO produces a higher-quality earnings figure and, because the value is lower than that generated from the FIFO or other procedures, LIFO also results in lower

income tax payments for U.S. and Japanese companies. (Canada Customs and Revenue Agency (CCRA) does not accept LIFO for calculating taxable income.) Furthermore, using LIFO yields a conservative, understated valuation for inventories and net assets on the firm's balance sheet, enhancing that statement's reliability in investors' eyes. Given its advantages, it is no wonder that an increasing proportion of large U.S. firms (other than those in industries characterized by falling product prices, such as electronics) have adopted LIFO inventory accounting in recent years. In Canada, however, where reporting under LIFO does not reduce taxes, few companies use LIFO. Rather, about one-half of Canadian firms use the FIFO procedure (with its generally favourable income effect) while about 35% use weighted-average cost.

Since LIFO is the inventory valuation method that yields the accounting profit figure that most closely approximates real economic earnings, a securities analyst may wish to make an adjustment to the reported earnings of those firms which do not employ LIFO procedures for shareholder reporting. Moreover, because LIFO and FIFO methods have such different effects on the income calculation, switching from one method to another can have a dramatic impact on reported earnings in the year the change is made. Consequently, an astute analyst wishing to estimate a firm's real economic earning capability will want to compensate for the distortion (and perhaps deception) that such an accounting change can have, particularly during periods of high inflation.

(5) Choice of Depreciation Method and Rate

Here again GAAP permits the use of a range of methods of depreciation to recognize the decline in the value of a firm's fixed assets over time. These include the straight-line method, the units-of-production method, and several accelerated methods such as the sum-of-the-years'-digits and double-declining-balance methods. Similarly, when accountants prepare their companies' published income statements, they have considerable leeway in choosing the time periods over which assets are written off or, what is the same thing, the rate at which non-cash depreciation is charged off against income. The accountant's freedom is much more circumscribed when preparing statements for CCRA or various regulatory agencies, however, as these bodies dictate particular methods and rates of depreciation for determining taxable and regulatory income. The "capital cost allowance" or "CCA" is the maximum portion of an asset's cost that companies may deduct each year in determining their taxable incomes. For most asset classes, CCRA permits the write off of CCAs on a declining-balance basis, while the straight-line method is required in other cases.

From an investor's point of view, the disconcerting thing about this assortment of approaches to depreciation is that none of them may do what they are intended to do in an adequate manner - that is, reflect the year-by-year decline in the remaining useful physical or economic life of the firm's capital assets. Instead, if not prescribed by some regulatory agency, the method and rate of depreciation are typically chosen to help achieve some other end, such as minimizing income tax payments (using some accelerated depreciation method) or maximizing current-period reported earnings (such as by using the straight line method and stretching deprecation charges over as long a period as possible). Steel-makers in Canada, for example, have been using different time horizons for depreciating their rolling-mill equipment even though there is essentially no difference between these assets. Montreal-based Ivaco Ltd. depreciates this equipment over 25 years, while Hamilton-based Stelco and Dofasco use a 16.7 year horizon.

Clearly some adjustment to depreciation and pre-tax earnings would be required to make a meaningful comparison of Ivaco's earning power with that of the other steel companies.

Since GAAP requires that long-term fixed assets be accounted for, and written off, on the basis of their historic cost, the use of the straight line or units-of-production depreciation methods over the estimated physical life of an asset during times of high inflation is bound to result in depreciation charges which will significantly understate the amount of money the firm will have to set aside to replace the asset when it comes to the earlier of the end of its economic or physical life. In contrast, what investors want to see, when they assess a firm's real economic earnings for stock valuation purposes, are depreciation charges that make adequate provision for replacing the associated assets at current, and *not* historical, prices.

Unfortunately, since total depreciation or CCAs cannot exceed the historic cost of the assets, no depreciation method can adequately reflect the replacement cost of assets during inflationary periods; over the life of any asset, each method will make the same under-provision for the asset's replacement, and hence the same overstatement of the firm's real economic income. However, as accelerated depreciation methods tend to front-load depreciation charges, they reduce the distortions in earlier years and concentrate the distortions (un-provisions) in later years. For this reason, securities analysts generally believe, especially during inflationary periods, that the reported earnings of companies using accelerated methods are of higher quality because, being lower, they come closer to reflecting the firm's real economic earning power in the current (or near-term) period. An analyst should also be aware that some adjustment to arrive at a more realistic value for real economic earnings is bound to be required in any year when a firm makes a significant change to its depreciation policies.

As indicated in the second section of this note, however, for an analyst or investor attempting to estimate a firm's real economic income, it is not really sufficient just to adjust the charges for depreciation to reflect the replacement value of the firm's *fixed* assets. "Real economic depreciation" requires that the analyst recognize and deduct from current revenues (in estimating real economic earnings) any kind of defensive investment - that is expenditure whose benefit or effect transcends the current accounting period - that is necessary to preserve the firm's real, long-run earning power. As noted earlier, such a defensive investment may take the form of an employee training program, an advertising campaign, or a court case to defend the firm's proprietary rights. In a later section of this note, we shall offer some suggestions or how an analyst might attempt to estimate a firm's past real economic depreciation levels from published accounting and/or qualitative information.

(6) Deferred Tax Liabilities

Deferred tax liabilities arise when a company uses one method of depreciation for reporting to its shareholders and a different method for determining CCAs for calculating its taxable income for CCRA. For example, a firm may use straight line depreciation in its published financial statements - resulting in a higher figure for taxable income - and some form of accelerated depreciation on its tax books - creating a lower level of taxable income and, hence, currently-payable tax liabilities. The difference between the two tax liability figures is the current-period's deferred taxes, which are recorded as a non-cash expense on the firm's published income statement either directly or in a footnote to this statement. While annual deferred taxes reduce reported earnings (as long as shareholder depreciation exceeds CCAs for tax purposes),

they do not immediately involve an outflow of cash from the firm; consequently, the annual net amounts are accumulated on the balance sheet as a liability. A special balance sheet entry becomes necessary because the company still carries the asset on its balance sheet at its normal depreciated value, which is higher than its value after the "tax" depreciation. The extra "tax" depreciation remains hidden from view. "Deferred tax" is entered on the "liability" side to offset the asset's value on the opposite side of the balance sheet by the amount of hidden depreciation that has occurred in the asset for tax purposes. This special liability is necessary because the asset will run out of depreciation for tax purposes before it is fully depreciated for book purposes. At that time, the company will have to pay more taxes to CCRA than would appear necessary from the book value of the asset. And those taxes will gradually reduce the deferred tax liability until "tax" depreciation is the same as normal depreciation.

For a firm operating in an inflationless world with a fairly even pattern of moderate investment over time, annual deferred taxes would tend to be small, and negative amounts (that is, net drawdowns from previously accumulated amounts exceeding new deferrals) would tend to cancel out positive amounts from year to year. The problem arises when firms are expanding rapidly through major investment programs in a world where inflation is increasing the cost outlays required for new fixed-asset investments. In this environment, deferred tax liabilities are likely to mushroom, and the net amounts accumulated in a few years may effectively never become due and payable to CCRA as long as the firm continues to re-invest large sums of money annually. In effect, then, annual and accumulated deferred tax balances will represent, for all intents and purposes, interest-free loans from the government.

Many analysts feel that, since a (permanent) interest-free loan will (permanently) enhance a firm's real long-run earning capability, some portion of a firm's annual deferred tax liability should be added to its reported after-tax income to better approximate real economic earnings. What portion this should be is a matter of debate, although it is likely that it will vary directly with the expected longevity of the deferred tax balances.

(7) Goodwill Amortization

Goodwill is an asset category on the balance sheet that represents money the company has paid out for, say, a subsidiary, above and beyond the fair market value of the subsidiary's identifiable net assets. At best, goodwill represents today's value of the future income that management expects to generate from the subsidiary over and above what would be a normal return. (If the identifiable net assets are expected to generate only a normal return - more precisely, their cost of capital - then they do not justify a valuation above their fair market value.) At worst, goodwill is simply the price the company foolishly paid in excess of the subsidiary's real value - a sum that is likely never to be recovered. Even in the worst case scenario, however, the goodwill must be carried as an asset for some period of time - suggesting it has value - and serves to inflate the company's net worth. (GAAP does not permit the lump-sum write-off of goodwill upon acquisition.)

Goodwill use to impact the reported income calculation because, under Canadian, U.S., and U.K. GAAP, it was supposed to be written off, or amortized, over a period of no more than 40 years. (The period chosen should, under GAAP, correspond with the length of time the company expects to benefit from the goodwill.) The effect of this non-cash amortization charge was to reduce the reported earnings figure in each year by a percentage of the original goodwill

balance whether or not there was likely to be any year-to-year decline in the economic value of the intangible assets (e.g., brand names, trademarks, patents, etc.) that may have justified the goodwill payment in the first place. Consequently, some analysts felt that, in many situations, the annual amortization-of-goodwill expense amount - adjusted for its tax effects if any - should be added back on top of reported after-tax profits in the process of estimating a firm's real economic income.

Since 2002, however, the issue of the annual *mandatory* amortization of goodwill, and its effect of driving a wedge between reported and real economic earnings, has become moot. Changes introduced by the accounting bodies in the U.S. and Canada no longer force firms to make a quarterly writedown of the goodwill on their balance sheets. Such a writedown is required only if senior management determines that the value associated with the goodwill assets has been *impaired* (e.g., when the caché of a brand has been compromised by negative publicity). Obviously, the discretionary judgment involved in implementing this impairment test (at least annually), and the timing of any writedown, are things that investors must be conscious of. Analysts must second guess management's decisions in this regard at every step. If the contribution of an acquired business or brand or patented product is falling, should management begin writing off the balance sheet goodwill associated with it? If a firm unexpectedly makes a large goodwill writedown, has the economic value of the associated intangible assets really fallen or are the charge and its timing motivated by some earnings management imperative?

Moreover, there are concerns with the new goodwill amortization rules at a conceptual level. The rules imply that goodwill lasts forever, unless proven otherwise. Many academic studies point to net wealth destruction for shareholders associated with mergers and acquisitions – casting doubt on the real value of acquired goodwill in the first place. And even where there is enormous intangible value – such as in the Coca-Cola brand – it usually requires continual investment to preserve this value. Consequently, some commentators feel that eliminating the mandatory amortization of goodwill is a move away from the revenue and expense matching principle so central to accounting philosophy. Furthermore, any impairments that are taken are bound to be run through the income statement in large lump sums, encouraging analysts to marginalize them as both extraordinary events and non-cash charges.

(8) The Reclassification of Assets Between Current and Long-Term

GAAP requires long-term assets (including investments) to be valued on the balance sheet at their historic cost (less any depreciation), while current assets are supposed to be recorded at the lower of their book/cost values or their realizable market values. Consequently, if during the year one of the firm's current-asset investments (perhaps included under its marketable securities account) declines to a value below its historical cost, the firm may avoid having to report the difference between the current market and original cost values as a loss if its management can find some excuse to reclassify the investment as a long-term asset - thus enabling the firm to continue to value it at cost. In many cases this manoeuvre is simply a ruse to enable management to avoid acknowledging, and having to explain, the extent and cause of the loss. Securities analysts should try to spot such "reclassifications" and their income effects and make compensating adjustments if warranted to improve their picture of a firm's real earnings over time.

(9) Reporting Capital Gains and Losses As Income

The real economic earnings figure should reflect the change in a firm's economic or market value from year to year. However, long-term assets on the balance sheet are recorded at their depreciated original cost values even if the market value of the assets has risen over time. It is only when the assets are sold for a capital gain that this increase in value is acknowledged and recorded in the financial statements. Generally, where the capital gain results from a transaction which is atypical of the firm's regular business, the gain is posted directly to the firm's retained earnings account and does not go through the income statement. Consequently, when this is done there is no impact on, or distortion to, the reported net earnings figure.

For some firms, however, generating capital gains and losses on long-term assets is a natural and expected consequence of their business activities. Real estate development firms are a case in point. For these firms, the practice is often to record gains and losses on the income statement. The effect, of course, is to concentrate in a single year or quarter the gain or loss in value that may have been taking place over many years. So, while it makes sense to include the gains (and losses) on property sales as part of real economic income for real estate companies, the analyst may wish to distribute such gains/losses over time when preparing a historical record of their real economic earning power.

The temptation and potential in this area for companies to "manage" their reported earnings – to meet or beat analysts' expectations – is great, and many examples of questionable and/or fraudulent earnings treatments of capital gains and losses can be found. IBM, for example, has been criticized by analysts and investigated by the SEC for its financial disclosure policies vis-à-vis its accounting for capital gains and losses. It came to light that IBM sold off a small operation for a U.S.$280 million gain on the last day of 2001, a manoeuvre that helped it meet analysts' earnings expectations for that quarter. The magnitude of the gain and its impact were not initially disclosed in any IBM news release. Also, in letters sent in 2000, SEC staff raised questions about IBM's handling of an even larger gain of about $4.06 billion from the sale of its Global Networks business to AT&T Corp. Instead of booking the gain separately, IBM included it as an offset to expenses under the "Sales, General and Administrative" line in its income statement – a dubious treatment at best.

IBM's accounting for the proceeds from its sale of Global Networks was reminiscent of the 1996 reporting ploy that started Rite Aid on its path to accounting perdition. In that year, Rite Aid sold 189 of its drugstores for a U.S.$90 million gain. Instead of reporting this one-time capital gain separately on its income statement, Rite Aid used the U.S.$90 million to absorb and hide operating expenses. The amount represented more than one-third of the firm's 1996 income, yet Rite Aid's annual report stated that "gains from drugstore closings and dispositions were not significant."

Many large and small firms have sizeable stock market investments in other firms and report the earnings and capital gains from these stock holdings as part of their income. The hefty contribution that these equity stakes have come to make to some companies' bottom lines has worried analysts, especially given that the timing of these portfolio gains is frequently chosen to ensure that companies meet analysts' earnings expectations – even if this means meeting them with lower quality earnings. For example, during its second fiscal 2001 quarter, investment income accounted for 32% of Microsoft's net income. Moreover, the increase in Microsoft's

investment income provided two-thirds of the "upside surprise" in its reported results (i.e., the amount by which its reported earnings exceeded analysts' expectations for the quarter).

(10) Discontinued Operations

GAAP allows firms to deconsolidate those of its operations that have actually been sold, abandoned, shutdown, or otherwise disposed of during the year. The gain or loss on these "discontinued operations" - including both operating results and any after-tax capital gain or loss on disposal - is treated as an "extraordinary item" in the firm's income statement. The firm's balance sheet assets and liabilities are similarly adjusted for the disposal of the operations or business segments. There is little dispute about the reasonableness and propriety of the above treatment, and the information is generally reported in a way that facilitates an analyst's estimate of real economic earnings.

Where the controversy arises is with a related provision of GAAP which allows a similar "discontinued operations" classification and deconsolidation treatment for any assets that the firm's management declares are "subject of a formal plan of disposal," even though the firm continues to own and operate these assets. This permissible accounting treatment opens up many possibilities for abuse and investor deception, and some analysts believe that, as result, the accounting rules for discontinued operations should be tightened up. After all, these analysts explain, management can make all the formal plans it wants to sell or get rid of a business unit, but whether or not a disposal is effected, and the price that is realized, are determined by the buyers and not management.

Analysts fear that the existing rules with respect to discontinued operations will tempt some managers to take poorly performing divisions out of operating results or attempt to reduce debt by reporting the divisions as discontinued operations. If the businesses are not subsequently sold and/or the predicted sales price is not realized, many of the accounting entries will have to be amended or reversed, leaving investors with at least two years of muddled financial statements and earnings reports to try to sort through.

Accountants may even use the GAAP rules to rewrite history. On April 11, 1989, Toronto-based Harris Steel Group decided to sell its Courtice steel facility. As result, the company revised its 1988 financial statements to reflect this plan. The revised income statements highlighted a significant profit increase "from continuing operations" and not the precipitous drop in earnings the firm actually experienced.

The point, of course, is that securities analysts have to look beyond the corporate accountant's characterization of the firm's performance when assessing the on-going earnings figure that is relevant for investors who are trying to value its shares.

(11) Pension and Other Post-Employment Benefit Contribution Costs and Income

Regulations and prudent corporate management dictate that firms put away money each year to pre-fund their employees' pensions and the other post-employment benefits (such as health and life insurance premiums) for which the companies are responsible. These annual company post-employment benefit contributions are considered to be current expenses and are included in the income statement as deductions for the purpose of calculating the firm's net

income. While this treatment is conceptually sound, problems arise because of the complexity of the procedure required to estimate the appropriate annual contribution for both accounting and real-economic-income-assessment purposes.

Take employer *pension* contribution costs, for example. The annual corporate contribution depends on (a) what type of pension plan the firm has (e.g., defined-benefit or money-purchase) and how it is funded, (b) the actuary's estimate of the company's total pension liability (in present-value terms), and (c) the performance of the stock and bond markets and, hence, the investments in the pension fund itself. The company's pension fund liability itself is a function of such variables as its labour turnover, the age pattern of its employees, the rate of return that can be earned on the funds invested in the pension plan, and the mortality rates of the pensioners. For many of these variables estimating their values for the future is little more than an educated guess today. And herein lies the problem for the investigative securities analyst. Because no one can say for sure what many of these values should be, corporate accountants have considerable leeway in the choice of figures to use - from aggressive to highly conservative - in preparing their annual pension contribution cost estimates.

Moreover, for well-funded plans pension *expenses* can turn into pension *income*. The magic works like this. The key is the return-on-pension-assets assumption. Under current accounting standards, firms start each year estimating the annualized cost of their promised pension benefits and the expected rate of return on their plan's assets. If the projected return is less than the cost, the difference is booked as pension *expense* on the firm's income statement. If, however, the assumed return on the plan's assets exceeds the cost, then the difference is recorded as pension *income* for the firm. For example, back in 1991, General Electric raised its pension-plan asset-return assumption by a full percentage point and *created* enough additional net income to post an earnings increase for an otherwise dismal year. Similarly, AT&T and GTE increased their pension-plan return assumptions in 1992 – these revisions accounted for 20% and 41% of their respective 1992 earnings increases. Back to GE again, pension income contributed U.S.$331 million, or 4%, of its 1997 total earnings of $8.2 billion. In 1998, its pension income clipped in $1.01 billion, or 11%, of GE's total earnings of $9.3 billion. By 2001, pension income had risen to account for $2.1 billion, or more than 15%, of the company's reported income of $13.7 billion. The problem with this picture, of course, is that without the growing role of pension income on GE's income statement, the company's reported earnings would have grown at an annual rate of 10% over the 1997-2001 period – not at the reported rate of 13.7% - hardly justifying GE's elevated stock valuation multiple. Finally, Ford Motor Company was among 63 companies in the S&P500 that *raised* their assumed pension-plan return rates for 2001 even though most of them had lower-than-expected returns in 2000 and 2001 was shaping up to be a disastrous year for the stock market. Ford raised its 2001 assumed rate to 9.5%, from 9.0% in 2000, and magically reported substantial pension income for 2001, as opposed to the pension expense it reported the year before. Clearly, an alert securities analyst must try to assess the reasonableness of the actuary's and accountant's pension plan assumptions and decide whether any year-to-year changes in these assumptions are truly warranted by changed circumstances or are simply designed to manufacture some desirable alteration in the firm's reported earnings.

The problem of funding employees' post-retirement *medical* expenses is a much bigger one in the U.S. than in Canada. In Canada, the federal and provincial governments finance most medical expenses, while private medical insurance coverage of current and former employees by their employers is a much more significant factor in the U.S. Consequently, accounting for post-

retirement medical benefits is not the major issue in Canada that it is in the U.S. Under Canadian GAAP, a company can choose from among three accounting methods - namely: (1) the pay as you go" approach, where firms recognize the medical costs only as retired workers incur them; (2) the "retirement accrual method", where companies estimate and accrue the liability for benefits that they expect to have to provide, the day the employee retires; and (3) the "current accrual method," where the firms obtain actuarial estimates of the costs and (present value of) liabilities and accrue them, much like pension costs, for all current and former employees each year. U.S. GAAP now requires that all U.S. companies use the current accrual method for accounting for promised post-employment medical services and hospital care benefits.

Unfunded pension and health benefit liabilities are another area that the analyst must scrutinize carefully. For example, for what are called "defined-benefit pension plans", when the amount of the corporate pension liability is less than the market value of the assets in the pension fund, the pension is said to be "fully-funded" or "over-funded", and the company is permitted to reduce or suspend its annual contribution. On the other hand, if falling market values, or changes in the workforce characteristics or promised plan benefits, cause the firm's pension liability to exceed the market value of the assets in the pension fund, then the plan is said to be "under-funded." Unfunded post-employment benefit liabilities also arise for the benefits accruing to employees for their years of service prior to joining the company and/or prior to the introduction of, or change in, the retirement benefit plans. In this case, government regulations require that the company make an extra annual provision, above and beyond its normal contribution, in a sufficient amount such that the unfunded liability can be eliminated over a reasonable period of time. This additional provision for future employee pensions and health-care benefits is an expense on the company's income statement.

General Motors provides an example of just how big and apparently capricious an impact post-employment-benefit liabilities can have on corporate financial statements. In 1993, GM's unfunded pension liability surged from around U.S.$12 billion to about $22 billion, largely because interest rates fell sharply during the year, lowering the discount rate GM used to present-value its future pension payment obligations. The situation reversed itself in 1994, however, when interest rates shot up again and GM's treasurer used a higher discount rate to value its future obligations to employees. The 1994 result: a $8 billion or so *decline* in GM's unfunded pension liability. While neither revaluation had an immediate impact on GM's earnings or cash flows, GM's experience illustrates how complex it is to try to value a company based on its published accounting information alone, especially when some long-term asset and liability values are adjusted to fully reflect changes in market interest rates and others - such as long-term debts - are not adjusted at all.

Furthermore, companies not only fiddle their pension plan *return* assumptions, they can play around with the *market value* of the plan assets as well. Accounting standards allow firms to employ a procedure known as "smoothing," which blends the market values of plan assets from year to year. Smoothing the impact of market fluctuations effectively prevents short-term changes in asset prices from boosting, or battering, reported earnings or cash flows. For example, companies whose plans are under-funded by less than 10% do not have to make additional contributions to their pension funds. And even in the case of deficits, a company has 18 months to meet the obligation. According to an investment bank study of the S&P 500 companies published in 2002, although their collective pension fund assets *lost* $90 billion in 2001, "smoothing" allowed companies to show a pension *gain* of $104 billion. The spread

between reality and accounting was a cool $194 billion, and it wasn't tilted in favour of reality. Furthermore, if the smoothing mechanisms were eliminated, aggregate earnings for the S&P 500 would have dropped by 69% in 2001 and by 10% in 2000, though 1999 earnings would have increased by 26%.

Finally, even when a company has to make an increased contribution to bolster an under-funded pension plan – clearly a negative for the firm's shareholders – accounting magic can turn a real negative into an apparent positive. For example, when IBM announced in late 2002 that it would raise its 2003 pension fund contribution to $3 billion, IBM's CFO emphasized that the move would not hurt the company's 2003 earnings. The reason: the contribution itself would simply be a balance sheet transfer from cash to the plan, and only the earnings on $3 billion of cash and marketable securities would be sacrificed. But this forsaken income would be made up many times over by the assumed earnings (at 8.5%) on the additional $3 billion of plan assets. In effect, IBM could look forward to having higher reported earnings in 2003 than it would otherwise have had, had it not made the increased pension contribution.

It is clear from the above discussion that changing stock and bond prices and valuation assumptions, in particular, can have a significant and fluctuating impact on the reported earnings of those companies which have sponsored defined-benefit pension plans for their employees - an impact that is, however, largely unrelated to the long-run real economic earning capability of the firm in its particular areas of business. Consequently, many analysts feel that when estimating a firm's real economic earning capability from year to year, a figure representing the expected, long-run average, annual, post-employment benefits contribution should be substituted for the actual reported value.

(12) Adjustments For Currency Translation

Many Canadian corporations either (a) report their financial statements in U.S. dollars (usually because a majority of their sales revenues are in U.S. dollars) or (b) have substantial assets and/or debts denominated in U.S. dollars or other foreign currencies. Consequently, fluctuations in the exchange rate between Canadian dollars and these other currencies will, for these firms, cause fluctuations in their reported profits either through their impacts on the Canadian-dollar value of various revenue and expense items or via direct credits or charges to income (and/or retained earnings) for associated asset or debt re-valuations.

At one time, the prevailing Canadian and U.S. accounting rules with respect to foreign currency translation adjustments resulted in wide and erratic swings in reported income for the affected companies - many of which were temporary in nature and reversed themselves in following years. Then the relevant accounting rules were amended to moderate the income-reporting impact of currency fluctuations. (For example, long-term assets and liabilities denominated in foreign currencies could be reported at their historic/original Canadian-dollar-conversion rates and did not have to be revalued from year to year.) Indeed, in many cases, the required currency translation adjustment was made directly to the shareholders' equity account without being flowed through the firm's income statement.

Now the pendulum has swung back again. Beginning in 2002, the Canadian Institute of Chartered Accountants put new foreign currency translation rules in place that normally require foreign-exchange-related gains and losses to be recognized, and run through the income

statement, in the period that they occur and, as well, to be applied retroactively to earlier period results. However, if a firm can classify a foreign subsidiary as "self-sustaining in a stable economy," then related foreign exchange gains and losses can bypass the income statement. The choice of classification is largely left to management's discretion. For example, Molson's apparently views the Brazilian economy, where it has extensive interests, as stable. Consequently, instability in the Brazilian currency does not directly impact its reported earnings.

Nevertheless, while it is both conceptually and practically difficult to gauge to what extent currency translation adjustments – or lack of – represent real or permanent gains and losses to companies, their large potential impact on corporate values means that security analysts cannot safely ignore them when attempting to compute real economic earnings.

(13) Accounting For Mergers and Acquisitions

Mergers and acquisitions have, historically, provided a plethora of opportunities for companies to disguise the progress of their real earning capabilities and report a rosier-than-warranted picture of their affairs to investors. Many of the deceptions involved what has been affectionately labelled "cookie jar accounting." A few examples will illustrate the process and range of participants.

IBM acquired the software company Lotus Development Corporation in 1995 and immediately wrote off U.S.$1.8 billion of Lotus' in-process research and development (R&D) costs. As IBM used the "purchase method" to account for its acquisition of Lotus, its write-off took advantage of an accounting rule promulgated in 1975 that enabled it to avoid booking a large amount of goodwill on its balance sheet (which would have had to have been amortized over an extended time period) by virtue of its having paid substantially more than tangible book value for Lotus' assets. Instead, IBM took its "big bath" upfront, as it were, and the combined firm could look forward to a future revenue stream unburdened by these costs and to an apparent rapid growth in earnings for which an elevated earnings multiple would be called for. Indeed, during the first three quarters of 1996, IBM's revenues (including those from its Lotus division) increased by U.S.$255 million, while its reported costs *declined* by $242 million – a figure that would have been appreciably less felicitous had appropriate portions of Lotus' R&D costs been incorporated in the total. The ruse worked at the level of the unsophisticated investor because the initial write-off was recorded in IBM's cash flow statement below the operating section. Hence, analysts tended not to factor it into their calculation of IBM's operating cash flow but rather added the $1.8 billion write-off back to operating income – thereby vitiating the write-off. In short, after the acquisition, investors were beguiled with all of the incremental revenues from the Lotus acquisition but only a portion of its on-going costs.

Walt Disney used a very similar accounting manoeuvre with respect to its 1995 purchase of Capital Cities/ABC in order to enhance the appearance of its subsequent earnings reports. When the deal closed in February 1996, Disney wrote off a substantial chunk of ABC's programming costs, thereby relieving itself of several years of additional expense recognitions. In effect, Disney created an undisclosed reserve of more than U.S.$2 billion to absorb costs and expenses incurred subsequent to the deal's closure – costs that would otherwise have flowed through Disney's income statement and reduced its reported profits. By one analyst's estimate, this accounting device permitted Disney to show a healthy 25% gain in earnings for its fiscal 1997 year, instead of what would otherwise have been a not-so-impressive 10% gain.

Cisco Systems and other acquisitive high-tech companies have also made liberal use of the rule that allows companies using the purchase method of merger accounting to write off the fair value of all development-stage R&D that they acquire. For example, Cisco wrote off U.S.$1.36 billion of the $1.77 billion in purchase accounting acquisitions it made between 1997 and 1999. This massive upfront expensing of in-process R&D costs served to artificially inflate Cisco's subsequent profit reports because revenues derived from these acquisitions were not burdened by the amortization of the acquisition costs.

CUC International also used mergers as an opportunity to hide accumulating expenses. When CUC merged with Ideon in the mid-1990s, its executives estimated the costs of consummating the merger – including legal fees, investment banking fees, severance payments, etc. – and then booked a *merger reserve* to cover these costs in an amount that was *twice* as large as the actual projected costs. CUC, in effect, created by the stroke of a pen, a "cookie jar" reserve from which it then withdrew "cookies" by reversing a portion of these excess reserves each subsequent quarter to deflate its accumulating operating expenses and artificially boost its reported earnings to whatever level was necessary to meet analysts' expectations. Moreover, there were no quarterly disclosure requirements that would alert investors to this kind of accounting mischief. This ploy was effective, of course, because the analysts were not much concerned about the size of the merger reserve itself – after all, these costs were "water under the bridge." Rather, analysts' valuation models focused on the expected level of *future* profits which, if merger expenses were recorded accurately, should not be impacted by these *past* one-time costs. CUC's accounting shenanigans were finally uncovered when it merged with HFS International (the merged firm was named Cendant). With its merger reserve magic and its fudging the recognition of its revenues and expenses (described under an earlier heading), CUC was found to have artificially overstated its earnings by nearly one-third over the 1994-97 period.

Accounting alchemy can also accompany mergers accounted for using the "pooling of interests" method – especially when the merging firms have different fiscal years. In this case, the relevant accounting rules can result in some periods being dropped from the combined financial statements and other periods being counted twice. Take the 1997 merger of U.S. Robotics with 3Com Corporation for example. The period that disappeared from the reported post-merger financial statements was the two months of U.S. Robotics results ended May 24, 1997. Curiously, U.S. Robotics stopped shipping any of its products during this 2-month period and also loaded a disproportionate amount of expenses into this time frame – resulting a huge 2-month loss. While these results appeared in an obscure SEC filing, they never appeared in any published statements from the merged company (3Com). In addition, 3Com's accounting wizards found a way to effectively put U.S. Robotic's favourable results for the 6 months ended September 29, 1996 into the merged firm's financial statements twice. They double-counted sales of U.S.$1.19 billion and profits of $76.8 million. During the 6-month period in 1996, U.S. Robotics puffed up its reported sales (and earnings) by stuffing its distribution channels with inventory. Then, as discussed above, just prior to the closure of its merger with 3Com, U.S. Robotics cancelled some of its previously-reported sales on the pretext of conforming with 3Com's revenue-recognition policies – but, of course, this period "disappeared" from the accounting radar screen. Furthermore, post-closure, 3Com took a substantial charge for merger-related expenses – some of which reflected the return of U.S. Robotics' products previously reported as sold. In short, for U.S. Robotics and 3Com, channel stuffing and merger accounting allowed profits to *appear* when investors were looking and then to *disappear* when they were no longer able to see what was going on.

(14) Unusual Items, Extraordinary Items, and Restructuring Charges

To qualify as an "extraordinary item," an income statement entry must simultaneously satisfy the following three conditions: (a) it must result from events or transactions that are not expected to occur regularly over a period of years; (b) it must not be typical of the normal business activities of the firm; and (c) it must not depend primarily on decisions or determinations by management or owners. Examples of extraordinary items would include: expropriation of corporate property by some government; destruction of an ocean oil rig by an iceberg; and settlement of a legal dispute related to a failed corporate takeover. An income statement entry that is caused by unusual circumstances but results from occurrences that are typical of the firm's normal business activities is called an "unusual item." Examples might include: large writedowns to reflect inventory losses and bad debts; gains or losses on the disposal of fixed assets; and corporate restructuring costs.

Both *unusual items* and *extraordinary items* are recorded separately (net of taxes) in a firm's annual income statement. For the purpose of assessing a firm's on-going, real economic earnings over some historical period, analysts generally ignore the reported-earnings impacts of extraordinary items and base their adjustments on the firm's "net earnings before extraordinary items." While the treatment of unusual items may depend on the specific circumstances giving rise to them, one reasonable approach in the absence of contrary information might be to attribute the average of the unusual-item amounts over the historical period to each year in the period.

For example, when the major Canadian breweries changed the design of the standard beer bottle some years ago, the costs of the conversion were all recognized in the year of the conversion as an unusual item in their income statements. But just as companies record a depreciation expense each year (reducing reported income) to provide funds for eventually replacing fixed assets, from a real-economic-valuation perspective it probably makes sense for breweries to recognize each year part of the eventual cost of replacing their bottles. This would, of course, be the effect achieved by the analyst who prorated the unusual expense item for beer bottle replacement over an extended period of years in calculating the beer companies' real economic earnings.

A word of caution is appropriate at this point with respect to the interpretation of unusual and extraordinary items. Spurred on by a generally favourable stock market response, it has become fashionable in recent years for companies to adopt the "Big Bath" approach to accounting. The "Big Bath" works like this. When a company already expects to have a disappointing earnings year for whatever reason(s), management may look into the future and envision all of the possible negative earnings associated with the firm's weaker or floundering endeavours and choose to bring them back to the present and provide a sizeable writedown for them. This allows the firm to take a single big hit - the "Big Bath" - during what was going to be a disappointing year anyway, and "clear the decks" for rosy income reports in future years. New managements are especially predisposed to the "Big Bath" approach since the current writeoffs can implicitly be associated with the former managements, while the enhanced future earnings will reflect well on the new teams. There is little disincentive for managers to adopt this approach since company stock prices often jump up when these big writeoffs are reported, presumably on the theory that the acknowledged past mistakes are "water under the bridge" while the future is now brighter. From a real economic earnings perspective, however, the Big Bath year may not really be a bad as reported, while future years may not be as good as they seem.

Analysts are increasingly questioning the sanity of the recent North American investment environment which has elevated the extraordinary write-off to a cherished accounting art form. The following passage by David Rocker, a New York investment manager, in the March 11th, 1996 issue of Barron's expresses the sentiments of many financial observers. "There's a new headline every day: Stocks drop sharply if operating earnings per share are two cents below expectations, but an extraordinary write-off of $2 a share elicits little interest. In fact, it is not unusual to see stocks soar after such write-offs, as analysts conclude that future earnings will not be burdened by depreciation of the written-off assets."

The unmistakable message from Wall Street is that write-offs lead to higher stock prices, so long as they can be treated as extraordinary. Accountants permit unequal treatment: failed ventures are considered extraordinary, but successful ones add to ordinary income. With such a one-way interpretation, extraordinary charges have become commonplace. In the early to mid-1990s, such write-offs aggregated nearly 20% of reported earnings for the companies in the S&P 500 Index. IBM, AT&T, Eastman Kodak and many other firms took repeated write-offs worth billions.

Extraordinary write-offs represent a double lie by management. They reflect an admission that prior balance sheets and income statements were overstated by the failure to have amortized and depreciated assets in a timely, economically-appropriate, fashion. And by establishing reserves for future actions, writeoffs create a convenient sinkhole to absorb expenses, thereby inflating future income statements. This has distorted reported earnings, making present returns on equity appear higher than they are, making price/earnings ratios appear lower, and giving the illusion that the market is reasonably priced.

Restructuring charges can also be used in the same manner as extraordinary write-offs and merger reserves to establish a "cookie jar" from which "cookies" may subsequently be plucked to make fortuitous rainy-day adjustments to income. For example, when Al Dunlap took the helm at Sunbeam in 1996 and fired half of that firm's employees shortly thereafter, a substantial write-off of one-time costs for severance and plant closings was certainly in order. However, Dunlap padded this one-time restructuring charge with an additional U.S.$35 million of "cookie jar" reserves, thereby creating a slush fund from which he could extract "cookies" (typically reversals of these earlier unwarranted write-downs) whenever it was advantageous to do so from an income-reporting perspective.

While an enthusiastic response to corporate writedowns and restructuring charges was one of the hallmarks of the great 1990s bull market, analysts are starting to acknowledge the deception of calling repeated writeoffs non-recurring and/or extraordinary. In the face of this practice, analysts reason, how can investors in the future believe that reported earnings are for real and will not be cancelled by subsequent writeoffs?

(15) The Choice of the Form of Consolidation or Method of Accounting For Equity Securities

GAAP permits accounting for a company's joint ventures, partnerships, and non-wholly-owned subsidiaries on either (a) an "equity accounting" or (b) "proportional consolidation" basis, depending upon the circumstances. Generally, "equity accounting" - which simply enters the cost of the company's equity investment in the joint venture or subsidiary as a one line item on the asset side of the company's balance sheet and thus effectively subsumes the details of the

joint venture's assets and liabilities - is called for when the parent company has "significant influence" but not control over the other entity. On the other hand, "proportional consolidation" - which adds an appropriate portion of the subsidiary's assets, debts, sales, and earnings, etc. to the same categories in the parent's financial statements - is typically prescribed when the parent has effective control over the other entity or when a significant portion of the parent's activities are conducted through joint ventures.

Now, while it can have a big impact on the appearance of the firm's balance sheet and its balance-sheet-related financial ratios, generally speaking, the choice of the method used to account for a firm's equity-security investments (or form of consolidation) will have no impact on the firm's reported net earnings. Nevertheless, analysts should be aware of what might be lurking behind the consolidated numbers and how a change in the consolidation status might be used to alter the firm's reported earnings from what might otherwise have been expected.

Livent Inc., the Toronto-based theatrical production company, provided a case in point. Livent shared the financing of its "Kiss of the Spider Woman" production with a limited partnership set up for this purpose and reported its interest in the Kiss production on an equity accounting basis in its 1993 financial statements. In January 1994, Livent bought out its partners' interest in the Kiss production for $1.1 million and thereafter took the wholly-owned partnership entirely onto its own books - including the partnership's sizeable, capitalized pre-production expenses as assets. Since these capitalized expenses then had to be recovered from Livent's Kiss-related revenues (or other revenues if necessary), Livent in effect paid $1.1 million to purchase a major delay in its generation of reportable net earnings. It is, of course, up to securities analysts to decide whether the resulting pattern of earnings was the best representation of Livent's long-run real economic earnings capability.

(16) Off-Balance-Sheet Partnerships and Special Purpose Entities

Off-balance sheet partnerships (OBSPs) and special purpose entities (SPEs) and other structured finance deals are like drugs – creations that can be put to effective use for worthy purposes or, in the hands of unscrupulous operators, devices that can deceive and defraud unsuspecting regulators, lenders, and shareholders. On the positive side, corporations and bankers have used OBSPs and SPEs (1) to facilitate economic development (both domestically and internationally) through project financing arrangements and (2) to create the vehicles necessary to "securitize" assets and shift the risks and returns from various asset classes (e.g., mortgages, leases, accounts receivables, loans, etc.) from the originating entity to individual and institutional investors. On the negative side, OBSPs and SPEs have frequently been used (most famously by Enron Corporation) to create false profits, hide corporate losses and liabilities, remove details of various risks from a firm's financial statements, avoid taxes and disclosure requirements, and circumvent the "suitability rules" that ostensibly protect investors from being sold financial products (e.g., complex derivatives) that they don't understand and that are not appropriate for their circumstances and risk tolerances.

For the most part, OBSPs and SPEs have been used to facilitate *non-recourse financing* (e.g., for a development project) and otherwise create financing arrangements that allowed firms to avoid having to report debts on the parent company's balance sheet. For example, as long as the parent controlled no more than 50% of a partnership, accounting rules did not require it to consolidate the partnership's assets and liabilities on its own balance sheet, although the

existence of these OBSPs and SPEs was supposed to be acknowledged in the footnotes to the firm's financial statements. To this extent, then, OBSPs and SPEs may have distorted the appearance of corporate balance sheets, but would not necessarily have altered the reported income calculation.

However, in many cases, the establishment of these arrangements involved the sale of assets by the parent company to the OBSP or SPE – and herein lay/lies the potential for abuse with respect to the reported income calculation and its relevance as a proxy real economic earnings. Securitizing balance sheet assets – whether it is a company selling its accounts receivable to a bank-sponsored trust (i.e., a SPE), or a bank selling residential mortgages that it has originated to a trust/SPE, or a leasing company selling its lease receivables to a trust/SPE – is an example of this. When these assets are transferred to the SPE or securitization vehicle, the selling entities often record the *gain on sale* as part of their operating income, as these gains result periodically from their normal operations. However, the transfer prices (and hence the size of the gains recorded as income) are based on a number of judgmental assumptions about bad debt experience, the timing of mortgage repayments, and the like. Generous/optimistic assumptions make for larger increments to current earnings. If, later, these assumptions prove to have been too optimistic, the resultant losses can be buried in, say, merger reserves or restructuring charges and treated as one-time, never-to-be-repeated costs. Newcourt Credit, the former Canadian asset-based lender heralded for its innovative financing structures, is alleged to have been guilty of incorporating overly-optimistic assumptions in its transaction valuations. Fortuitously, Newcourt agreed to be acquired by U.S.-based CIT Financial before the full extent of its subsequent losses could be revealed. In a similar U.S. situation, Green Tree Financial admitted in the fall of 1997 that its prepayment assumptions had been too optimistic and it was forced to write down the values of some of its securitized mortgage assets.

(17) Derivatives

The use of derivative securities have figured prominently in many situations where a firm's reported earnings have been a poor reflection of its on-going, real earning capability. For example, in an effort to bolster their reported incomes (and perhaps to turn them from negative to positive), many high-tech companies – including Microsoft, Intel, and Dell Computer – have sold put warrants on their own shares to outside investors. The warrants have given buyers the right, for a limited period of time, to sell the stock back to the company at a set "strike price" which is below the market price of the firm's shares at the date when the puts are sold. The put-selling companies earn a *premium* from these sales which they book as earnings on their current income statements. Indeed, it is tax-free income because U.S. tax laws exempt from taxation income earned when a company transacts in its own shares. The problem with this source of income is that it is rarely distinguished from the firm's regular operating earnings, and investors would undoubtedly be surprised and dismayed to find out what a significant portion of their favourite high-tech firm's earnings were derived from this source. Moreover, these put premiums are only an *on-going* source of income as long as the company's share price does not fall. Indeed, the practice of selling put warrants can backfire and become a drain on corporate cash and future earnings. Dell's shareholders found this out in 2002 when Dell's share price was cut in half and the firm was forced to spend U.S.$3 billion to buy back 68 million shares to fulfil its put obligations.

Prepaid swaps are another derivative product frequently used to manipulate reported corporate profits. The widespread use of prepaid swaps came to light during the U.S. Congressional investigation into the collapse of Enron. A prepaid swap is essentially a loan from a bank to a corporate customer, that is run through a SPE and structured in such a way that the deal may legally be considered a derivative transaction. Enron used these transactions to generate last-minute accounting profits as follows: Enron would receive an up-front payment from its bank and immediately record this as cashflow/earnings from operations. But, as prepaid swaps were technically derivatives – at least according to Enron's accountants – and derivatives were accorded "off-balance-sheet" treatment, Enron did not acknowledge or record any liability with respect to these prepaid swaps. In this manner, Enron was able to juice up its earnings reports while hiding what eventually amounted to U.S.$8 billion of debt from investors.

Enron is also the "poster child" for another way that dealing in derivatives has been used to "manage" both the level and apparent volatility of earnings. Enron's derivative traders used dummy accounts, labelled *prudency reserves*, to "park" some of the profits that they made on their deals to be used (withdrawn) on a "rainy day." While there was certainty an element of prudency in this procedure, there was also a significant element of deceit – these prudency reserves were really no more than a "slush fund" that was used to smooth out profits and losses over time and make Enron's trading activities appear safer than they really were. Enron's traders were able to fabricate these rainy-day reserves because it was relatively easy for them to tweak the assumptions used to value long-dated derivative contracts to create whatever phony valuation was required to segment the real profits from a transaction into a reported profit component and an addition to (or withdrawal from) the prudency reserve.

(18) Expensing Stock Option Grants

The controversy over whether or not stock option grants should be treated as an expense on corporate income statements has been raging ever since the U.S. Accounting Principles Board (the predecessor to the Financial Accounting Standards Board, or FASB) issued APB 25 in 1972. The APB 25 rule specified that the cost of options at the grant date should be measured by their intrinsic value – that is, the difference between the current fair market value of the issuing company's stock and the exercise price of the option. Under this method, no cost was attributed to option grants when their exercise price was set at or above the current market price.

FASB initiated a review of stock option accounting in 1984 and, following more than a decade of heated debate, finally issued SFAS 123 in October 1995. The statement recommended, but did *not* require, firms to report the cost of employee stock options in their financial statements based on their fair market value as determined using options-pricing models. FASB's recommendation was a painful compromise. FASB had called for options to be recognized as a compensation expense, but was beaten back by the efforts of business people and Congressional lobbyists with a vested interest in hiding the true cost of options from shareholders. Instead, companies were merely required to disclose annually – in the footnotes to their statements – what the cost of option grants would have been had the cost been factored into the income calculation. Not surprisingly, the vast majority of companies ignored FASB's full disclosure *recommendation*. As late as May 2002, only 2 of the 500 U.S. companies in the S&P 500 Index – Boeing and Winn-Dixie – included the cost of stock options in their reported net earnings.

As the 1990s progressed, the boom in stock prices and the dearth of real earnings to support these high corporate valuations – as well as the evident greed within the senior executive ranks – encouraged many companies, especially in emerging high-tech industries, to shift a greater share of their compensation packages from salaries and bonuses to stock option grants. After all, these option grants appeared to have no cost – at least in the eyes of unsophisticated investors – and they involved no immediate drain on cash. Better still, companies got to deduct large amounts of option-related profits *realized by their employees* for corporate tax purposes. For example, if an executive exercised an option to buy shares at $20 when the firm's share price was at $50, the executive would report taxable income of $30/share and the U.S. Internal Revenue Service (IRS) deemed that the option-issuing company incurred an equal expense. In the late 1990s, these corporate tax benefits from employee stock option plans often accounted for 10% to 123% of net earnings, and 25% to 77% of operating cash flow, for companies such as Sun Microsystems, Microsoft, Intel, Cisco, and Dell.

As the decade of the 1990s approached its end, more and more regulators, securities analysts, and prominent investors came to realize, and to express their dissatisfaction with, (1) the distorting effect that the failure to expense options was having on reported corporate earnings and (2) the negative impact that options were having on shareholder wealth as the subsequent exercise of these options diluted per-share earnings and net worth. Had AOL Time Warner, for instance, reported stock option expenses as recommended by SFAS 123, it would have shown an operating loss of about U.S.$1.7 billion in 2001 rather than the $700 million in operating income it actually reported. Similarly, Intel's 2001 net income would have been cut to U.S.$254 million from $1.3 billion had it expensed its option grants. More generally, it was estimated that the failure to expense options caused the aggregate operating earnings of all the companies in the S&P 500 Index to be overstated by 10% during 2001 and 2002. Similarly, UBS Warburg estimated that expensing options would have reduced 2002 operating earnings for Canadian companies by about 10.7%. Finally, an exasperated Warren Buffett – the legendary investor known affectionately as the "Oracle of Omaha" – questioned in Berkshire Hathaway's 1998 Annual Report: "If options aren't a form of compensation, what are they? If compensation isn't an expense, what is it? And, if expenses shouldn't go into the calculation of earnings, where in the world should they go?"

The point – from the perspective of this note – is that option grants *are* a corporate compensation expense, just as much as salaries and cash bonuses. Consequently, if a company fails to record this expense on its published income statement, then analysts and investors are well advise to ferret this expense value out of the footnotes and adjust the reported earnings accordingly. In addition to employing option-pricing models, another way to conceptualize the current earnings impact of option grants is to calculate what it would cost firms to buy back enough of their own shares to prevent the exercise of the options from diluting earnings and net worth, and then subtract from otherwise-reported income the foregone after-tax earnings from the cash used to repurchase the shares.

As more and more accounting scandals were revealed in the last 1990s and the early years of the new millennium and investors, and then the general public, came to realize that, (1) not only was the failure to expense options an exercise in "fantasy accounting" designed to obscure the wealth transfer from public shareholders to executives and employees, but also (2) that the efforts of executives to inflate the values of their stock options was a major *motivating cause* behind many accounting misbehaviours. Consequently, the regulatory and political momentum

shifted in favour of making the expensing of stock options *mandatory*. In July 2002, Coca-Cola and the Washington Post Company announced that they would voluntarily begin reporting option expenses and, by March 2003, 110 members of the S&P 500 had followed suit (although high-tech firms were largely absent from this group). In Canada, in May 2002, the Toronto-Dominion Bank was the first major company to step forward and state that it would begin expensing options. In July 2002, the London-based International Accounting Standards Board (IASB) – the rule-setting group charged with creating a set of international accounting standards – unanimously approved new rules requiring companies in countries that adhere to IASB standards to switch to treating stock options as expenses by 2004. Later in 2002, the Canadian Accounting Standards Board announced that Canadian companies would be required to conform with the new IASB rules – valiantly jumping ahead of the American response on this issue. As of mid-2003, however, Congressional posturing supported by some major high-tech companies was holding FASB back from announcing similar option-accounting reforms for U.S. companies. (One Senate bill called for companies to report options as an expense if they wished to claim their option costs as a reduction in taxable income. A Merrill Lynch study of 32 large U.S. high-tech firms in 2002 estimated that if these firms treated stock options as a reported expense, their net earnings would decline by an average of 67%. On the other hand, if these firms chose *not* to report their options cost, and thereby forsook the related tax break, their "operating" cash flows would be slashed by 29%.) If FASB is again, as it was in 1994, forced to compromise on these reforms, investors will continue to have to re-examine the income reporting of those companies that do not voluntarily expense their employee option grants.

(19) Program Accounting Versus Average Cost Accounting

Companies in industries which have long product development and production life cycles – such as aerospace firms – often adopt what is known a *program accounting* methods to report their periodic profitability. Program accounting requires companies to forecast the average selling prices for their products over their expected lives) as well as the total development and production costs required to meet their unit sales predictions. Based on these forecasts, a constant profit margin is applied to sales in each period. However, this can present a distorted picture to investors if selling prices are volatile or if selling prices are declining while, as result of fewer-than-projected unit sales, average per-unit production cost estimates are rising.

The experience of Bombardier's Aerospace Division, as revealed on April 3rd, 2003 by Paul Tellier – the Company's then recently-appointed CEO – provides a good illustration of the need for investors to scrutinize carefully the reported earnings of firms that employ program accounting, particularly if environmental conditions are changing rapidly and management is inclined to make aggressive assumptions about the future for the purpose of putting the most favourable face on current results.

Until 2003, Bombardier's Aerospace Division used program accounting to estimate and report the profits from its aircraft sales. Using this procedure, Bombardier forecasted its total aircraft sales and future selling prices and then estimated the average profit margin it expected to realize by subtracting from total future sales revenues the total costs projected to be necessary to design, produce, and deliver these aircraft. This average program profit margin was then treated as a constant, such that, even though realized aircraft sales prices might fluctuate (or decline) over time, the cost-of-sales figure for each delivered aircraft was calculated as a constant percent of the actual sales price – hence, a constant (but largely fictitious) program margin was reported

from quarter-to-quarter. Unfortunately, in the post Sept. 11, 2001 environment when aircraft selling prices declined and future unit-sales projections had to be reigned in, Bombardier's reported selling margins began to bear less and less resemblance to its real margins.

Bombardier's Paul Tellier acknowledged this with his April 2003 announcement that the company's aerospace division would henceforth switch to average cost accounting, where its financial results would more rapidly and accurately reflect changes in production costs and the impact of external forces affecting such variables as selling prices. Under the *average cost accounting* method, estimated average unit production costs would be charged to the cost of sales. As a result, the margin on each aircraft delivered would vary depending on the aircraft selling price. Also, under the new accounting method, management would conduct quarterly reviews as well as detailed annual reviews of the aerospace division's cost estimates and projected program quantities. The effect of any revision would be accounted for through a cumulative catch-up adjustment income. As result of this accounting policy change and related estimate revisions, Bombardier erased $2.2 billion of pre-tax profits from its books to cover its earnings over-statements for the fiscal 2003 year and all prior years.

(20) Gains Made by Corporations Repaying Previously-Incurred Debts With Inflation-Depreciated Dollars

During times of inflation corporations often benefit because, while the replacement values (hence, market values) of many of their assets rise, their debt obligations, which are denominated in fixed amounts of dollars, are not similarly affected. Indeed, if rising inflation causes interest rates to rise, the market values of the firm's longer-term debts are bound to shrink - creating a double-barrelled positive impact, in theory at least, on the market value of the firm's net worth which is, after all, simply the difference between the firm's inflating asset values and its shrinking liability values. And since the concept of real economic income is intended to reflect changes in a firm's market value over time, we would expect a firm to experience some upward momentum in its real economic earnings during such an inflationary period.

Whether justified or not, however, a firm's accounting statements rarely recognize either the upward adjustment in asset values or the shrinkage in debt values described above. On the asset side, as discussed earlier, the higher market values are only occasionally reflected on the firm's books when assets are sold for a gain or as result of infrequent, formal asset-value re-assessments. On the liability side, on-going corporations are rarely able to capitalize on the shrinkage in the market values of their bonds and debentures because of the call provisions on these instruments and the constraints on companies purchasing or redeeming their debts "for financial advantage." (During corporate re-organizations, however, some investors may be able to realize a benefit from shrunken debt values. Also, on-going firms which buy up bonds on the open market to meet sinking fund requirements may realize some gains in an inflationary, high-interest-rate environment.) Consequently, the accountant's failure to revalue debts in the face of inflation may not be unreasonable.

But there is a second aspect of the issue that should perhaps be reflected in the real economic income calculation. When the rate of inflation rises above the fixed rate of interest that a firm has agreed to pay some creditor, the firm benefits from effectively being able to borrow at a negative interest rate. This gain is virtually never shown in the firm's income statement directly, but may be captured indirectly if the firm's statements adequately capture the

positive impact of inflation on its net revenue inflows and its asset-wealth creation. Since the latter is bound to be done only imperfectly, some analysts may be inclined to augment a firm's reported earnings during periods of high inflation to recognize the positive impact of inflation on its real long-run earning capability by virtue of the firm's having borrowed at a negative interest rate and being able to pay off its debt with inflation-depreciated dollars. Some studies have shown that the under-statement of corporate real earnings from this debt-related effect of inflation exceeds the combined over-statement of the earnings associated with phantom inventory profits and under-providing for fixed-asset depreciation.

(21) Changing From a Family Business To a Public Corporation

When examining the accounting records of a private, family-owned business, the analyst must recognize that some adjustments are bound to be required if this company's earning power is to be compared with that of publicly-traded corporations or if its historical records are to be used to infer its real earning power as a publicly-traded company. While it is impractical to try to catalogue a full list of possible adjustments here, a couple of examples may be sufficient to illustrate the general point. On the one hand, for tax reasons owner-managers may not have paid themselves and other family members a salary. In these cases, reported profits will over-state the firm's real economic earnings as a public corporation since the professional managers replacing the former family managers will have to be paid a salary. On the other hand, a comparison of corporate-versus-personal tax rates and rules from some other perspective may have persuaded a firm's family owners to take profits out of their business in the form of huge personal salaries, artificially depressing reported profits relative to the firm's real economic earning capability as a public corporation with a normal salary structure.

(22) Basing the Real Economic Earnings Calculation on Reported Cash Flow As Opposed to Reported Earnings

For firms in non-renewable-resource-based extraction industries - such as mining and oil and gas exploration and development - securities analysts typically base their real economic income calculations and their valuation estimates on the companies' cash flow figures rather than their reported earnings. There are a number of reasons for this. First, non-cash expenses tend to be proportionally larger for these firms than for most other industrial firms because, in addition to the normal depreciation expenses on plant and equipment assets, these firms must make depletion allowances to record the declines in their ore bodies or petroleum reserves resulting from the year's production. In most cases, however, the real cash costs associated with finding and developing these resources have long since been spent. Therefore, cash flows are a better reflection of the actual size and timing of such a firm's returns to investors - though <u>not</u> a good proxy for real economic income without adjustment.

Second, for oil and gas companies, there are two fairly common approaches to accounting for exploration costs - namely, (a) "successful efforts," where the costs to find and develop successful oil and gas wells are capitalized (to be written off later against production from these wells) and all other exploration and development ("E & D") outlays are expensed in the year in which they are made, and (b) "full cost," where all E & D costs (whether or not they result in productive wells) are initially capitalized and then amortized later. Consequently, a petroleum company that uses "successful efforts" accounting will show lower net earnings in the early years of its operation than a "full-cost" company. Furthermore, the relative income statement impact

of the two approaches will depend on the rate of expansion (or contraction) of the petroleum company's exploration budget. For comparing the *earnings* of oil and gas companies, then, analysts continually have to check and make adjustments to reflect the firms' choices of E & D expense accounting. This complexity is obviated, however, if analysts simply focus on and compare the cash-flow results of these firms.

While it may be convenient to focus on corporate cash flows for resource-extraction-based companies, these cash flow figures are not themselves an adequate representation of real economic income because, in the absence of re-investment by these firm's, the non-renewable nature of their resource bases means that these cash flows will eventually run out (in violation of the underlying premise of real economic income). Therefore, to come closer to approximating the real earnings of these firms over time, the analyst must subtract from the after-tax cash flow figures the after-tax cost (in today's dollars) of finding and developing, or purchasing from other firms, sufficient ore or petroleum reserves to replace those used up in the company's annual production, such that the firm's perpetual real earning capability is restored from year to year.

V. PRACTICAL TIPS FOR ESTIMATING HISTORICAL REAL ECONOMIC EARNINGS FROM A TIME-SERIES OF ACCOUNTING NET INCOME FIGURES

In this section, I offer some practical tips that may help an analyst get started on the process of estimating a firm's historical real economic earnings from a time-series of the firm's financial statements and the reported accounting income figures derived from them. We shall presuppose throughout that the hypothetical firm, Acme Inc., has no preferred shares but does pay cash dividends to its common shareholders. We shall also assume that Acme issues no new common shares over the time periods we hypothesize. Some examples will focus on total net earnings, dividends, and retained earnings, while others will deal with earnings per share (EPS), dividends per share (DPS), and retained earnings per share (REPS). The prefix "RE" will stand for "real economic," such that RE(EPS) will mean real economic earnings per share and RE(REPS) will be real economic retained earnings per share. Needless to say, cash DPSs are "real" unless the company and its bank have a penchant for counterfeiting. Finally, we shall assume that Acme's historical EPS figures have already been "cleansed" of extraordinary and non-recurring income and expense items and have been adjusted for the permanent component of annual deferred tax charges.

Suppose Acme reports EPS in the neighbourhood of $3.00 every year over an extended period of time and, during this entire period, declares and pays out a DPS of $2.00 each year. Obviously, the firm reports, and accumulates on its balance sheet, approximately $1.00 of retained earnings each year. But what is Acme's annual RE(EPS) over this period? Well, with reference to our original definitions of real economic income, Acme's RE(EPS) must be at least $2.00 per share because the firm *was* able to pay out this amount each year and "still maintain its ability to earn and pay out this same amount in succeeding periods." But could it be more than $2.00 per share? If so, then Acme would have been paying out in dividends *less than* its RE(EPS) and would have had some positive RE(REPS) to re-invest in the firm each year. By the direct implication of our definitions, unless Acme re-invested these funds at zero return or less, its earnings must have grown over the years. But, since this did not happen, none of Acme's reported REs could have been "real." We are forced to conclude, therefore, that Acme's RE(EPS) over this hypothetical period was about $2.00 per share.

How then are we to interpret Acme's continual reporting of retained earnings of $1.00 per share? One clear possibility is that, above and beyond whatever accounting depreciation Acme set aside each year, the company required an additional $1.00 per share of new investments annually just to maintain its earning power (reported and real) from year to year. In other words, Acme's "real economic depreciation" exceeded its accounting depreciation, annually, by about $1.00 per share.

Much the same conclusion would fall out from a comparison of Acme's annual construction spending (or change in gross fixed assets) and its reported depreciation. If construction spending continually exceeds depreciation and yet the firm's reported earnings do not show any rising trend, then Acme's real economic depreciation - as proxied roughly by construction spending here - must exceed accounting depreciation, and the average annual difference should be deducted from reported REs to estimate RE(REPS).

The estimation becomes trickier when the smoothed time-trend of construction spending exceeds that of accounting depreciation, but the firm's reported earnings also follow a rising trend over time - appearing to receive some benefit from these excess construction expenditures. The analyst must then attempt to separate the excess construction spending into its two components - namely, (a) that part that was necessary to make up for insufficient accounting depreciation (in preserving the firm's earning power) and (b) that part of the spending that generated the gains in net earnings. There are many possible ways to do this and some pieces of the information available about the company may assist in this process.

For example, suppose Acme's gross new construction spending exceeds its accounting depreciation by about $20 million a year over a 10-year period and the firm typically earns an average 15% after-tax on the 60% share of its investment projects that are equity-financed. (In other words, for every dollar of new construction, 40 cents is debt-financed and 60 cents is financed out of retained earnings - as Acme is assumed to issue no new shares.) Finally, suppose that, over this 10-year period (where the cyclical influences on its earnings have been averaged out, as would happen if the start and finish of this period came from the same point in the business cycle), Acme reported that its net earnings rose on average by $1 million per year. Given Acme's typical investment characteristics, it would require the firm to make real *expansionary* investments totalling $11.1 million each year to add $1 million to earnings ($11.1 million x 60% equity-financed x 15% equity rate of return = $1 million). Therefore, about $11.1 million of Acme's excess construction spending (above depreciation) created real growth in earnings, while the remaining $8.9 million appears to have been necessary re-investment (along with the depreciation funds) to maintain Acme's previously-attained earnings levels. **The conclusion**: on average over this 10-year period, $8.9 million of Acme's annual reported retained earnings were *not* real and, therefore, its real economic income was about $8.9 million less than its reported earnings annually. The numerical example below illustrates the above-described procedure.

Assumptions:

All the firm's *new* investments are financed with a 40%/60% debt/equity split and they all earn a 15% ROE on the equity-financed portion, no matter what leverage ratio is employed. We will ignore working capital assets and liabilities, and taxes, to keep the example simple.

Consider two cases, a and b, which differ only with respect to the EAT expected to be earned during year t=1.

COMPNAY BALANCE SHEET at:	**t = 0**	**t = 1a**	**t = 1b**
Gross fixed assets (GFA)	400	440	440
Accumulated depreciation	100	120	120
Net fixed assets (NFA)	300	320	320
Total assets (TA)	300	320	320
Debt (B) (@40% of NFA)	120	128	128
Equity (S) (@60% of NFA)	180	192	192

COMPNAY INCOME STATEMENT for:	**t = 0**	**t = 1a**	**t = 1b**
Sales	500	500	500
Accounting depreciation expenses	18	20	20
EAT	27	28	29

Now, recognizing that total gross investment is a combination of real economic depreciation (RE(DEPR)) and expansionary investment (EXP I), i.e., $\Delta GFA = RE(DEPR) + EXP\ I$

then, ΔEAT will $= (EXP\ I) \times (S/(B+S)) \times ROE$ or $EXP\ I = \dfrac{\Delta EAT}{(S/(B+S)) \times ROE}$

Therefore, EXP I **for t = 0** →	11.1	22.2
and RE(DEPR) = ΔGFA – EXP I →	28.9	17.8

CALCULATION OF REAL ECONOMIC EAT for t = 0:		
Reported EAT	27	27
+ Accounting depreciation	+18	+18
- RE(DEPR)	-28.9	-17.8
= RE(EAT)	16.1	27.2

Another way to get a handle on a firm's real economic earning power is to observe the impact of its accumulated retained earnings on its share price once cyclical, market-wide fluctuations have been factored out. All other things being equal, market valuation theory tells us that a firm's share price should rise on average over time by approximately the amount of its RE(REPS) - the explicit assumption being that these RE(REPS) are re-invested in the firm at its cost of equity capital. If, however, we observe over an extended period of time (when average market price/earnings multiples show no trend) that the increase in the firm's share price is only about one-half of the increase in its book value per share, then it would be a reasonable to infer that only about half of the firm's reported retained earnings over this period were "real". Appropriate adjustments can then be made to its reported income to approximate its real economic earnings over this time interval. The weakness of this approach is, of course, that it cannot be employed if the ultimate purpose of the exercise is to evaluate the firm's share price based partly on an estimate of the time path of its real economic earnings. It is faulty *circular reasoning* to assume, in the first place, that the firm's prevailing share price is correct in order to get one of the data estimates to be used later to assess the validity of the share price as a representation of its true or intrinsic value.

Finally, general knowledge can sometimes be brought to bear on the real economic income calculation. For example, suppose Acme is a rate-regulated public utility. Regulatory boards allow rate-regulated public utilities (e.g. electric companies, oil and gas pipelines, and local gas and electricity distribution companies) to charge their customers rates that are high enough so that the utility's shareholders and other capital providers can earn their "costs of capital" for financing the utility's rate base. Therefore, the regulatory treatment virtually guarantees that (a) any increase in the utility's rate base - roughly its new construction spending less its annual depreciation allowance - will earn the firm's cost of capital, and (b) all of the net rate base increase will add to the utility's real earning power over time. Hence, in the area of depreciation, all of the rate-regulated utility's retained earnings are "real" and its accounting earnings can be expected to approximate its real economic earnings.

VI. CYCLICALLY-NORMALIZING A FIRM'S REAL ECONOMIC EARNINGS

Cyclical normalization refers to the process of removing from a time-series of economic numbers the influence of general, economy-wide and industry-wide, economic or market influences to arrive at values which reflect what these numbers would likely look like under "normal" or average economic conditions. Consequently, after compiling a time-series of consistently-derived figures for a firm's real economic earnings or EPS by making appropriate adjustments to its reported accounting profits, the analyst should then *cyclically normalize* these real economic values with respect to cyclical fluctuations in business conditions.

There are a number of reasons for adjusting the historical record for a firm's real economic earnings to remove the influence of the business cycle at each point in time. Recall that the purpose behind the analytical procedures described in this note is to assist the analyst in preparing some of the estimates required to attempt a reasonable valuation of a firm's shares. Our underlying premise is that, for each of the firms we are looking at, the current market price of its shares should, in equilibrium, equal the present value of its *currently-unobservable, future* real economic income stream over the long run. Because the future is unknown, the analyst starts by looking at *known* past and present information to help him/her formulate a projection of future real economic income levels. To do this, the analyst needs to decide on (a) a reasonable starting value for the future income projections and (b) a realistic growth rate for the medium-term or long-term future. The starting point for predicting future growth rates is likely to be the firm's past or historical growth rate in real economic earnings over some appropriate period.

So the following is what cyclically-normalizing a firm's past real economic income levels is intended to provide the analyst:

(a) a current figure from which to project future real economic income - that is, the current period's cyclically-normalized real economic earnings or EPS level; and

(b) the trend line data from which to compute the firm's historical real earnings growth rate, as the starting point for forecasting the future pace and duration of real earnings growth.

The need for the first of these data estimates is obvious. If, instead of a cyclically-normalized figure, the analyst were to base his/her future earnings projections on the real economic income achieved by a firm during a booming economy, most of the future income-level projections would be biased high since future periods will not always be characterized by

buoyant business conditions. Similarly, projections based on a cyclically-depressed beginning earnings level are bound to be biased low as it is reasonable to expect most firms' earnings power to be enhanced when normal or buoyant economic conditions return.

The usefulness of the data for estimating the firm's historical real earnings growth record will, of course, depend on how closely the analyst expects the firm's future mix and location of businesses to resemble its mix and location of operations over the historical period. The more a firm alters its business mix through mergers, acquisitions, and divestitures, and the more it changes its location of operations via national or international expansion, the less relevant will the historical growth record be for projecting future growth.

Before the widespread availability of computers and statistical packages, an analyst would undertake the cyclical normalization of a series of real economic earnings numbers by plotting them on regular or semi-logarithmic paper and then, using his/her eyes and a clear plastic ruler, describe the best-fitting straight line through the sequence of points. Using semi-log paper was preferable to regular graph paper if a firm's earnings growth was not decelerating over time and if inter-firm, growth-rate comparisons were being made, because a constant year-to-year percentage growth rate would appear as a straight line on semi-log paper and higher-sloping trend lines would correctly be associated with higher percentage growth rates. (On regular graph paper, a constant year-to-year historical growth rate will appear as an exponentially-upward-sloping line and comparing trend-line slopes will not necessarily reveal which firm has experienced the faster percentage historical growth rate.) A straight line earnings growth record on regular graph paper indicates a gradually declining percentage growth rate over time, which, however, may be a quite reasonable expectation for firms which grow in absolute size and find that their product markets mature as time goes by.

Today, the best way to cyclically normalize a series of real economic earnings figures is to find the best-fitting, time-series regression line through the values. Usually ordinary least squares (OLS) linear regression is adequate, although some form of non-linear regression may produce a closer fitting line and may be superior if the analyst detects a pronounced curvature in the data ahead of time.

In preparing the data for the regression analysis, two cautions are in order. First, the data should encompass at least one full business cycle - and preferably one or two cycles from the same point in one cycle to the corresponding point in a subsequent cycle - so that the real economic earnings data do not over-emphasize the firm's performance capabilities in, say, expansionary times and under emphasize it in recessionary conditions. Using data covering less than a full business cycle is bound to bias the historical growth rate estimate depending on whether the most recent data points are from years of buoyant or recessionary economic conditions. The second caution is with respect to definite "outliers" in the data which may have an inordinate impact on, and effectively drive the overall results in, an OLS regression. Normally the adjustments an analyst makes in going from accounting to real economic earnings (e.g., excluding extraordinary items and averaging out unusual and non-recurring items) will prevent significant outliers from showing up in the real economic income data. If, despite this, serious outliers do appear in the data (particularly near the beginning or end of the data series), the analyst should probably abandon computer-based OLS regression and go back to an "eyeball regression" using a clear plastic ruler.

Having found the best-fitting line through the historical data, the (regression) trend line found is the representation of the firm's cyclically-normalized real economic earnings over some *past* period. The analyst is now in a position to take the final steps in preparing some of the historical data for use in estimating the firm's *future* real economic earnings. **First**, the analyst reads off the trend line the cyclically-normalized earnings value for the current period. With few exceptions, this is (a) the best value from which to start future long-run earnings projections and (b) the value for computing the current, normalized price-to-earnings ratio for the firm's shares.

Second, the analyst takes the normalized or trend line values for the beginning and ending periods of the regression analysis - say, period zero and period t - and computes the firm's *historical*, normalized real earnings growth rate by plugging these values into the following growth rate formula (expressed in absolute profit (EAT) terms):

$$RE(EAT)_0 \cdot (1 + g_{EAT})^t = RE(EAT)_t$$

By re-arranging terms and switching to an expression in terms of RE(EPS), we find the estimated growth rate in real economic EPS, or g_{EPS}, as

$$g_{EPS} = \sqrt[t]{\frac{RE(EPS)_t}{RE(EPS)_0}} - 100\%$$

When inter-firm, historical, growth rate comparisons are contemplated, the beginning and ending values for use in the above formula should come from the same years for all firms, if possible, because both the positioning and the length of the estimation period can affect the growth rate result.

There is another (third) very useful by-product from the above-described regression procedure for cyclically normalizing a firm's historical earnings record. By comparing (a) the *actual* earnings data values for each year with (b) the corresponding *regression-trend-line* values, the regression program calculates the standard error of estimate (SEE) for the earnings regression. Many analysts feel that this SEE-of-earnings (SEE(EAT) or SEE(EPS)) value is the best numerical representation of a firm's historical *absolute* earnings volatility (and, hence, its uncertainty or riskiness from a future earnings-prediction perspective), while this SEE value divided by the firm's average earnings over the regression period is the best proxy for *relative* earnings volatility riskiness for making historical, inter-firm comparisons.

VII. CONCLUSION

Recognizing that the market value of a firm's shares is a direct function of its expected, future, real economic earnings, this note has attempted to outline a variety of procedures to assist the corporate financial analyst and the fundamental securities analyst translate reported corporate accounting information into real economic earnings estimates which are realistic, consistent, and suitable for informative comparisons with other year's income figures and with the earnings of other firms.

APPENDIX A

RECENT NOTORIOUS EXAMPLES OF THE RELATIONSHIP BETWEEN CORPORATE MANAGEMENTS AND EXTERNAL AUDITORS

There are numerous examples of external accounting firms being "bullied" by corporate managements into signing off on misleading financial statements. Arthur Andersen LLP accountants audited the financial statements of U.S.-based Waste Management (WMX) over the 1994-1997 period and alerted WMX's executives to numerous accounting misrepresentations which the auditors felt should be corrected. However, when WMX's senior management balked at making these changes, Andersen simply acquiesced and signed off on unqualified opinions on WMX's statements for these years. When the audit committee of WMX's board finally revealed, in February 1998, that WMX had overstated its earnings by U.S.$1.43 billion over the preceding 4 years, the SEC fined Arthur Andersen $7 million for approving WMX's inaccurate statements.

Rite Aid – a U.S. retail drugstore chain under the leadership of Martin L. Grass – is another prominent example of a firm that was able, for a number of years, to get away with gross accounting misrepresentations under the watchful eye of its external accountants – in this case, KPMG. When KPMG auditors expressed concerns about Rite Aid's questionable accounting practices (described earlier in this note), Martin Grass reportedly threatened the senior KPMG partner responsible for Rite Aid's audit by suggesting that "skeletons would come out of KPMG's closet" if Rite Aid suffered from the audit. Balancing the stick with a carrot, Grass then offered KPMG a lucrative consulting contract to supplement the regular audit fees. KPMG then apparently withdrew its objections to Rite Aid's accounting deceptions.

The multi-billion-dollar collapse of Enron over the summer and fall of 2001 revealed many nasty surprises – one of which was the extent to which the Houston office of Arthur Andersen had aided and abetted Enron in constructing a monumental labyrinth of organizational and accounting deceptions designed to mislead bankers and investors with respect to Enron's size and risk exposure. This complicity on Andersen's part was rewarded by enormous fees. In 2000 alone, these fees amounted to U.S. $52 million, more than half of which were for consulting services. Andersen was subsequently convicted of obstruction of justice after David Duncan, its lead partner on Enron audits, supervised the massive destruction of Enron-related documents and the deletion of thousands of e-mail messages relating to its dealings with Enron. Arthur Andersen also paid U.S. $110 million to settle securities-fraud lawsuits in 2001. Lest anyone feel sorry for its subsequent fate, Arthur Andersen was also shown to have been "asleep at the switch" in its auditing roles at Global Crossings and WorldCom – two firms whose blatantly fraudulent accounting machinations apparently escaped Andersen's notice but, when revealed, led to the collapse of these firms and the vaporization of hundreds of billions of dollars of investors' wealth. As result of its sins and felony conviction, Arthur Andersen went out of business as a disgraced, but classic, example of how lucrative fees (especially for non-audit work) can colour an auditor's interpretation of accounting rules and guidelines and persuade it to opine that a firm's internal financial controls are adequate when they are not. At result, the "Big 5" accounting firms shrank to the "Final 4". The Sarbanes-Oxley Act passed by the U.S. Congress in 2002 subsequently forbade auditing firms from providing consulting services to any of their auditing clients in order to eliminate the inherent conflict of interest when accountants provide both auditing and consulting services to the same firm. As a consequence, and in an effort to refurbish their collectively-tarnished images, all but one of the "Final 4" accounting organizations divested themselves of their consulting divisions.

APPENDIX B

THE TASK OF PROFESSIONAL INVESTMENT ANALYSIS

It might have been supposed that competition between expert professionals, possessing judgment and knowledge beyond that of the average private investor, would correct the vagaries of the ignorant individual left to himself. It happens, however, that the energies and skill of the professional investor and speculator are, in fact, largely concerned, not with making superior long-term forecasts of the probable yield of an investment over its whole life, but with foreseeing changes in the conventional basis of valuation a short time ahead of the general public. They are concerned, not with what an investment is really worth to a man who buys it "for keeps", but with what the market will value it at, under the influence of mass psychology, three months or a year hence. ....

Thus the professional investor is forced to concern himself with the anticipation of impending changes, in the news or in the atmosphere, of the kind by which experience shows that the mass psychology of the market is most influenced. ....

For it is, so to speak, a game of Snap, of Old Maid, of Musical Chairs – a pastime in which he is victor who says *Snap* neither too soon nor too late, who passes the Old Maid to his neighbour before the game is over, who secures a chair for himself when the music stops. These games can be played with zest and enjoyment, though all the players know that it is the Old Maid which is circulating, or that when the music stops some of the players will find themselves unseated.

Or, to change the metaphor slightly, professional investment may be likened to those newspaper competitions in which the competitors have to pick out the six prettiest faces from a hundred photographs, the prize being awarded to the competitor whose choice most nearly corresponds to the average preferences of the competitors as a whole; so that each competitor has to pick, not those faces which he himself finds prettiest, but those which he thinks likeliest to catch the fancy of the other competitors, all of whom are looking at the problem from the same point of view. It is not a case of choosing those which, to the best of one's judgment, are really the prettiest, nor even those which average opinion genuinely thinks the prettiest. We have reached the third degree where we devote our intelligences to anticipating what average opinion expects the average opinion to be. And there are some, I believe, who practise the fourth, fifth and higher degrees.

If the reader interjects that there must surely be large profits to be gained from the other players in the long run by a skilled individual who, unperturbed by the prevailing pastime, continues to purchase investments on the best genuine long-term expectations he can frame, he must be answered, first of all, that there are, indeed, such serious-minded individuals and that it makes a vast difference to an investment market whether or not they predominate in their influence over the game-players. But we must also add that there are several factors which jeopardise the predominance of such individuals in modern investment markets. Investment

based on genuine long-term expectation is so difficult today as to be scarcely practicable. He who attempts it must surely lead much more laborious days and run greater risks than he who tries to guess better than the crowd how the crowd will behave; and, given equal intelligence, he may make more disastrous mistakes. There is no clear evidence from experience that the investment policy which is socially advantageous coincides with that which is most profitable. It needs *more* intelligence to defeat the forces of time and our ignorance of the future than to beat the gun. Moreover, life is not long enough; – human nature desires quick results, there is a peculiar zest in making money quickly, and remoter gains are discounted by the average man at a very high rate. The game of professional investment is intolerably boring and over-exacting to anyone who is entirely exempt from the gambling instinct; whilst he who has it must pay to this propensity the appropriate toll.

..... John Maynard Keynes,

The General Theory of Employment,
Interest and Money; 1935