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On the Balance Sheet-Based Model of Financial Reporting

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ON THE BALANCE SHEET-BASED MODEL OF FINANCIAL REPORTING

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Table of Contents

Overview

The FASB adopted a balance sheet-based model of financial reporting about 30 years ago, and this model has been gradually expanded and solidified to become the required norm around the world today. Currently, the FASB and the IASB are re-considering their Conceptual Framework, and this is the right time to have a much-needed debate about the proper conceptual foundations of accounting. This paper argues that the balance sheet orientation of accounting standard-setting is flawed, for the following reasons:

1. Accounting is supposed to reflect business reality, and thus the essential features of the financial reporting model need to reflect the essential features of the underlying business model. However, the balance sheet orientation of financial reporting is at odds with the economic process of advancing expenses to earn revenues, which governs how most businesses create value, and which represents how managers and investors view most firms.

2. The adoption of the balance sheet approach was driven by conceptual considerations; standard setters argued that the concept of assets is more fundamental and logically prior to the concept of income. However, this paper argues that the concept of income is clearer and practically more useful than the concept of assets, especially with the recent proliferation of intangible assets.

3. Earnings is the single most important output of the accounting system. Thus, intuitively, improved financial reporting should lead to improved usefulness of earnings. However, the continual expansion of the balance sheet approach is gradually destroying the forward-looking usefulness of earnings, mainly through the effect of various asset re-valuations, which manifest as noise in the process of generating normal operating earnings. During the last 40 years, the volatility of reported earnings has doubled and the persistence of earnings has gone down by about a third, while there is little change in the properties of the underlying business fundamentals.

4. The balance sheet approach has pushed accounting into incorporating more and more valuation estimates into financial reports, creating tautological and dangerous feedback loops between financial markets and the real economy.

The paper concludes with two suggestions about a "good" model of financial reporting. The first suggestion is that accounting needs to make a sharp theoretical and practical distinction between operating and financing-type activities and assets, and this distinction needs to be reflected in all financial statements. The second suggestion is that for most firms the accounting for operating activities needs a renewed emphasis on the principle of matching of expenses to revenues.

I. Introduction

Currently, the U.S. Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) are re-considering their conceptual frameworks. This re-assessment is a key part of the two Boards' strategic plan for long-term convergence of the two dominant systems of financial accounting since agreement on specific issues is difficult without shared conceptual foundations. The project is still in its early stages and there is no clear indication on the ultimate form of the compromise that is likely to be reached. On the table are foundational concepts like "assets", "liabilities", and "revenue recognition", implying that the effect of the decisions about to be reached will impact the state of financial reporting for decades to come (see Bullen and Crook 2005 and McGregor and Street 2007 for a more complete account of the scope of this project).

This new development is necessary and welcome since uniformity and comparability of accounting standards around the world is a laudable goal. However, uniformity in itself is not enough, and in fact may turn out to be harmful unless it embraces the "right" principles for financial accounting. The point is that the Boards' re-consideration of the conceptual framework does not include a re-assessment of its balance-sheet orientation, which has become the dominant feature of financial reporting during the last 30 years. This paper argues that this is a grave shortcoming and it calls on the Boards to expand their effort to a more thorough re-assessment of their conceptual framework. The income-statement approach to accounting is the natural foundation for financial reporting for most firms, and a disregard for this approach is bound to result in faulty accounting, no matter what desirable characteristics the rest of the financial reporting model might have. The rest of the paper develops these arguments in more detail, concluding with suggestions about what a good model of financial reporting might look like.

II. History and background for the current developments

Some sense of history and a review of the balance sheet versus the income statement approach to accounting help to provide a proper context. There is a long-standing debate in accounting about two alternative and competing approaches to doing financial reporting. The essence of the so-called balance sheet-based approach is that it views the proper valuation of assets and liabilities as the primary goal of financial reporting, with the determination of other accounting variables considered secondary and derivative. The principal implication from this perspective is that the determination of income statement amounts and especially earnings is governed by balance sheet considerations. The balance sheet approach, take1n to its logical conclusion and extreme, prescribes that the correct determination of assets and liabilities completely determines earnings, where earnings for a given period is simply the change in net assets over that period (adjusted for distributions and contributions from equity holders). This view of earnings has strong underpinnings in economics, where it is known as "Hicksian income" 1.

In contrast, the income statement approach views the determination of revenues, expenses, and especially earnings, as the primary goal of financial reporting. The emphasis here is on the proper determination of the timing and magnitude of the revenue and expense amounts, whereas balance sheet accounts and amounts are secondary and derivative. The two major guiding principles in this process are the revenue recognition principle and the matching of expenses to revenues principle. The goal of accounting is to record accruals, which properly record the timing of economic achievements (revenue) and the alignment of associated expenses (matching). Balance sheet accounts and amounts are mostly the residual of this process, and assets and liabilities are in essence the cumulative effect of periodic accruals. For example, accounts receivable arise because revenue is recorded before actual collections, and the PPE (property, plant, and equipment) account represents unexpired costs of acquired equipment. The income statement approach has always had strong support among accounting practitioners, and especially in the investment community. Investment managers and financial analysts

[1] Proponents of the balance sheet model and fair value-type accounting frequently use the Hicksian idea of income as one of their key constructs and arguments. It is little known that John Hicks himself advocated historical cost accounting and recommended against including fair value-type estimates in financial statements, see Brief (1982) for a review of Hicks' views on accounting. In addition, note that the Hicksian definition of income requires that wealth be measured well at both beginning and end. When there are difficulties in measuring wealth, e.g., when using fair value accounting for operating assets, the resulting change in wealth is not really "Hicksian income", so invoking the Hicksian income concept becomes strained.

primarily think of stock value as arising from the firms' ability to generate a stream of earnings, and therefore the correct determination of earnings should be the goal of financial reporting.

Although there is an inherent conceptual tension between these two approaches, in practice financial accounting has always been a pragmatic compromise between them. Historically, the income statement view of financial reporting was dominant in accounting. By the first half of the 20th century, this view was firmly embedded in the theory and practice of accounting, reaching its epitome in Paton and Littleton (1940), which was an enormously influential work and was later proclaimed "The Accounting Book of the Century". Looking back on Paton and Littleton (1940) today is fascinating and instructive because the book is entirely built around income statement concepts and problems, and balance sheet considerations are relegated to a peripheral status. It should be emphasized that there have always been proponents of a balance sheet and even fair value approaches to accounting. For example, MacNeal (1939) and Chambers (1966) can be viewed as early proponents of fair value accounting for assets. On balance, though, it is fair to say that the income statement approach to financial accounting dominated theory, practice, standard setting, and pedagogy all the way until the mid-1970's.

An important new stage in the development of accounting was set in 1973, with the start of FASB's reign as the official standard setter in the U.S. The predecessor of the FASB, the Accounting Principles Board (APB) was a part-time organization, with limited staff and resources. Thus, the emphasis in the APB's work was mostly on codifying and clarifying existing principles of accounting, with little ability or attempt to influence financial reporting in a major way. Widespread dissatisfaction with the APB's work led to the creation of the FASB as a full-time professional unit, which was much better funded and staffed, and was ready and able to pursue a more ambitious and activist approach to accounting standard setting. For the interested reader, Storey and Storey (1998) provides an exhaustive account of these developments.

Soon after the FASB started work, it became apparent that a piecemeal approach to standard-setting was not going to work because absent shared conceptual foundations there were bound to be internal inconsistencies and even contradictions across the standards that govern specific accounting areas due to changing Board composition, political pressures, and the effect of a myriad of other idiosyncratic factors. Thus, at the very dawn of its existence the FASB embarked on an extensive project to provide a conceptually sound and workable foundation for financial reporting and standard-setting. The FASB received several rounds of input from its constituencies and was engaged in

vigorous internal and external debates as it was clear that the nature of the conceptual foundation would have a major influence on all future standard-setting activities and on the economy and the world at large. In its work, the Board quickly reached two conclusions; first, the income statement and the balance sheet approaches to accounting are the two major alternatives for a financial reporting model; second, to ensure conceptual clarity and internal consistency one has to choose one versus the other alternative, and avoid a muddled compromise between them.

Against this background, the FASB reached a major decision in the late 1970's. The Board concluded that the balance sheet approach is the only logical and conceptually sound basis of accounting and therefore the balance sheet approach should become the cornerstone of standard-setting and financial accounting in general. Storey and Storey (1998), Bullen and Crook (2005) and other accounts of this decision clearly indicate that the main reason for this conclusion was the perceived conceptual supremacy of the balance sheet approach. In a nutshell, the FASB's reasoning can be summarized as follows. Earnings is a "change in value" concept, and it is impossible to define a "change in value" concept before one defines what "value" is. Thus, the determination of assets and liabilities logically precedes and supercedes the determination of earnings, which implies that the balance sheet approach is the natural basis of accounting. In contrast, the income statement approach is conceptually suspect because it relies on vague concepts like matching. In addition, the implementation of the income statement approach results in deferrals and accruals, which create assets and liabilities of questionable substance (see Sprouse 1966 for an early and forceful exposition of this view). For example, if a shipping company books a provision for the future scraping of barnacles off its ships, that creates a liability. But there seems to be little economic substance to this liability, as the company is not really liable to anybody because of this provision.

During the years that followed, accounting standard setters have been expanding and solidifying the balance sheet approach on several dimensions. First, there has been a gradual transition of older rules to conform to the new conceptual framework. For example, APB Opinion 11 from 1967, which prescribed an income statement approach for income tax reporting, was superseded by a balance sheet orientation in SFAS 96 in 1987 and SFAS 109 in 1992, and the change was specifically motivated by a desire to conform to FASB's conceptual framework. Second, the FASB has been increasingly adopting more pure and extreme forms of the balance sheet approach, particularly with the recent broad initiative for moving to "fair value" accounting. As the name suggests, fair value accounting affirms the primacy of market and market-type prices as the benchmark for value for

company accounting. Specific examples of fair value accounting include SFAS 133 in 1999 (hedging), SFAS 141 in 2001 (acquisitions and goodwill accounting), SFAS 156 in 2006 (securitization) and the recent sweeping SFAS 159, which allows fair value accounting for a broad class of assets and liabilities. As a subject, fair value accounting is significant enough to merit separate and deeper study, and the interested reader is referred to more focused efforts in this direction, e.g., Nissim and Penman (2007). This article takes a broader perspective, and views fair value accounting as just the latest and more extreme form of a longer evolution that has been gaining momentum for the last 30 years.

The balance sheet approach has also expanded geographically, moving from its U.S. roots to international standard setting, and in the process becoming the dominant world-wide accounting doctrine today. Since the beginning of its existence, the FASB has been a model for international standard setting, where various foreign bodies sought to emulate the success and power that the FASB exerts in the U.S. Specifically, the International Accounting Standards Committee (IASC) was founded in 1973, and the conceptual framework it issued in 1989 was heavily based on FASB's, adopting the balance-sheet model of reporting (Camfferman and Zeff 2007, pages 259-264). The IASC was eventually replaced in 2001 by the International Accounting Standards Board (IASB), largely modeled after the FASB's organization and process, and cross-sharing with it a number of key personnel[2]. Recently, the two Boards have actively sought to co-ordinate their philosophy and activities, adopting in 2002 a formal memorandum known as "The Norwalk Agreement", which details their joint commitment to convergence of U.S. and international accounting standards. Since such convergence is only possible under shared conceptual foundations, the two Boards share a firm commitment to the balance sheet approach. For the rest of this paper, the arguments and the discussion focus on the U.S. and the FASB experience but the analysis that follows largely generalizes to the international domain as well.

On July 6, 2006 the FASB issued a document called Preliminary Views (see Financial Accounting Series 1260-001), which summarizes the Boards' current thinking about the Conceptual Framework and asks for feedback. The Preliminary Views represents an initial step before issuing a

[2] For example, James Leisenring held a number of positions at the FASB since 1982, including being a member from 1987 to 2000, and was the Director of International Activities, when he left in 2001 to join as a member of the IASB. Anthony Cope was a member of the FASB from 1993 until 2001, when he left to become a member of the IASB. Thomas Jones, the current Vice Chairman of the IASB, was previously a trustee for the Financial Accounting Foundation (which oversees the FASB), and was a member of FASB's Emerging Issues Task Force. Mary Barth, a professor from Stanford University, served on the FASB Advisory Council until 2001 when she became a part-time member of the IASB. The current Chairman of the FASB, Robert Herz, was a part-time member of the IASB before joining the FASB.

more formal Exposure Draft but it already contains a number of important indications about the shape of the future Conceptual Framework. For example, the Conceptual Framework is envisioned as a single, unified document, along the lines of IASB's existing framework rather than being like FASB's collection of seven Concept Statements. Also, the Conceptual Framework will have a high standing in the hierarchy of financial reporting rules, and specific standards will be expected to comply and embody the Framework. For the purposes of this paper, though, the most important aspect of the Preliminary Views document is that the Boards have decided to concentrate on ironing out existing inconsistencies within and across the two systems of financial reporting rather than on a deep review and re-thinking of the entire existing conceptual foundation (paragraph P7). In fact, the Preliminary Views presents a strong endorsement of the balance sheet model of financial reporting, and envisions a further deterioration in the status of the income statement and earnings in particular.

The magnitude and even the language of the proposed changes is startling, especially considering what steps would likely be taken to flesh out the proposed conceptual framework in specific financial accounting standards. For one thing, the Preliminary Views largely shies away from using terms like "revenues", "expenses", "earnings" and "income", mentioning them only as a nod to existing conventions (paragraph BC1.30.). The preferred terms in the Preliminary Views are variations on "changes in economic resources and claims to them" (paragraphs OB22 and BC1.28.), a language that embodies pure-grade balance sheet accounting[3]. A more substantive and indeed critical change in the proposed framework concerns the importance of earnings in financial reporting. Note that FASB's existing conceptual framework has always had a somewhat dual nature: on the one hand, it endorsed a balance sheet model of accounting, but on the other hand, it also had a formal statement about the primary importance of earnings in financial reporting. Specifically, FASB's Concepts Statement 1 (paragraph 43) says:

> "The primary focus of financial reporting is information about an enterprise's performance provided by measures of (comprehensive income) and its components. Investors, creditors and others, who are concerned with assessing the prospects for enterprise cash flows are especially interested in this information".

The Preliminary Views, however, clearly states:

[3] In addition, the term "matching" is never used, even in passing.

"… to designate one type of information as the primary focus of financial reporting would be inappropriate"**. *(paragraph BC1.29.)***

"Displays of … changes in economic resources and claims, and displays of the list of economic resources are equally important". ***(paragraph BC1.30.)***

Of course, the implication is that now standard setters view earnings much less important than before[4]. Summarizing, the Preliminary Views crowns and further develops the balance sheet model of financial reporting. These are critical changes, and they prompt the more structured critique that follows.

[4] Over the years FASB members and affiliated parties repeatedly denied that the adoption of the balance sheet model leads to decreased emphasis on the primary importance of earnings, e.g. Storey and Storey (1998), page 82.

III. A critique of the balance sheet-based model of financial reporting

The critique is built around the following four main themes:

A. The balance sheet approach is problematic because it is at odds with how most businesses operate, create value, and are managed

Most firms are essentially sophisticated devices for continually advancing expenses, hoping to earn revenue and earnings. In relation to this fundamental purpose, most assets are just supplementary and temporary devices; they are props that serve the continual stream of company operations and have little independent existence and value. Notice that the balance sheet approach would make sense if firms were "asset greenhouses", where the primary mission of the firm is to earn money by acquiring assets, storing and growing them, and earnings represents the realized or unrealized growth in these assets. But most firms are not like asset greenhouses, they are more like "asset furnaces", where acquired or internally-created assets are continually sacrificed or transformed for the larger goal of producing revenue and earnings. The balance sheet makes it look like there is a permanent store of assets and asset values but this impression is illusory because the stock of assets only exists because of the continuous process of asset renewal and sacrifice.

Relaxing the continuity of this process clearly reveals the temporary and subservient nature of most assets. For example, in the late Middle Ages the Italian trading guilds business was much more fragmented and piecemeal. Partners would get together to finance the purchase or rental of a ship, appoint the crew and advance other expenses. On completing the trading mission, the partners would split the profits, dissolve the partnership, and possibly start considering other ventures. In this example, it is clear that what really matters is the expenses advanced, and the revenue and profits ultimately earned. The assets (ship, inventory) are just temporary implements to carry out the trading business. This situation is far from an isolated historical curiosity, and is commonly found in business today. For example, many consulting firms operate on a project-by-project basis, and the key to creating value in this business is making sure that the revenues on the piecemeal projects exceed the requisite costs by a reasonable margin. In addition, even if practiced, assigning "assets" to each project has a temporary and provisional nature. Similar observations apply to construction businesses, shipbuilding, businesses related to military contracts, etc.

Note that in practice there is no real dichotomy between continual and piecemeal types of business, where most firms embody some varying mixture of both. This mixture also varies with the time horizon, where more and more of a firm's business represents one-shot projects over longer

horizons. As the horizon lengthens, whole product lines and divisions represent one-shot deals, and the firm itself is a one-shot project over its complete life. Once the firm is finished, all assets are dissolved, and the only thing that leaves a lasting impact is the cumulative amount of revenue earned, costs incurred, and resulting and distributed earnings.

The point is that if firms operate as a process of advancing expenses to earn revenues, and assets have a secondary and supporting role in this process, then proper accounting needs to reflect and follow this reality, and that implies a natural and logical supremacy for the income statement view of financial reporting. Accounting can be defined as a system of tracking wealth and the creation of wealth in an economic unit. Intuitively, the essential features of the economic process of wealth creation have to be reflected in the essential features of the accounting system that tracks this process. It truly is like putting the horse before the cart if firm operations follow income statement logic, while the financial reporting process follows balance sheet logic.

Since most businesses follow an income statement mode of operations, it is not surprising that managers manage their businesses following an income statement approach. When managers prepare budgets they produce a forecast of revenues first, followed by a prediction of costs needed to support this revenue. It is only after the budgeted income statement is produced that managers will think about the asset base necessary to support these projections and the financing needed to make all of this happen[5]. The same process applies to managerial decisions like opening a new product line or starting a new division. Managers would think about the total operating and investment costs needed to get this project going, the revenue that is likely to be earned, and whether the resulting return on investment is acceptable. Managers would not think about the build-up of assets in a new division as the source of added value; if anything, excessive build-up of assets is a drag on firm performance.

Investors, which the FASB recognizes as the most important users of financial reporting information, also base their decisions on income statement considerations. For example, the typical valuation of a business starts with a projection of revenues and costs first, followed by balance sheet amounts and the resulting free cash flows. Consider also that when financial analysts go beyond the prediction of earnings, they typically produce some sort of an income statement. Analysts' projections

[5] Of course, in practice there are many variations in the order presented above, e.g., the managers of a rapidly growing retail chain may first think about the maximum possible number of new stores they can open (assets), which will drive the prediction of sales. However, the point is that even in this situation managers care about assets first because they hope that the asset expansion will drive sales, which is where value is created in this business. Managers are not opening stores hoping that stores will go up in value, creating earnings; even if this happens, store value appreciation is incidental to the business.

of balance sheet amounts are rare, and one *never* sees a projection of balance sheet amounts as a means to compute changes in net assets, which will comprise earnings. Similar observations and conclusions apply to the activities of most other parties interested in the success of firm activities, including participants in mergers and acquisitions and credit lending.

To put the preceding ideas in a different way, the main problem with the balance sheet approach is that it is largely silent about the notions of business model and business performance, which are central to a firm's success and value-creation. The balance sheet model takes asset values as given, as stores of value, which are divorced from what the firm is doing, and diverts attention from operations, which are the key to firm success and value. In contrast, the income statement model by its nature focuses attention on firm operations, on the fact that firm value arises not from a static pile of resources but from continually using and putting these resources at risk in executing a business model. The income statement model clearly reveals that business success is determined in real operations, where the firm must go out and engage customers and markets for its goods or services, and where it is the customers that provide the ultimate business model verification by buying and paying for what the company offers. The fact that sales to a customer is the critical verification of a company's business model is recognized in accounting as the order in the process of recognition of income, where revenue recognition comes first, and then in turn triggering the recognition of expenses and income. In contrast, the balance sheet model makes it look like firm value comes from the value of a store of resources, e.g., as valued at exit prices in fair value accounting. In short, for most firms the value of their resources comes from value-in use and not from value-in-exchange. The firm is a process and not a collection of "things", implying that the income statement model is the natural foundation for financial reporting.

To illustrate and bolster the arguments above, Table 1 provides empirical evidence about the relative roles of internal use vs. market-based considerations for the most typical and largest group of operating assets, PPE. Table 1 lists the aggregate stocks and flows of U.S. firms' PPE over the last 15 years. All data are from Compustat, for firms with total assets exceeding $50 million. N is number of available firms for the respective year, Capex is Capital Expenditures (Compustat annual item #128), Depreciation is defined as Depreciation and Amortization (item 14) – Amortization of Intangibles (item 65), Sales of PPE is Sale of PPE (item 107), Level of PPE is PPE – Net (item 8) as of year-end[6].

[6] Note that the amounts in Table 1 do not provide a full reconciliation of the PPE account, i.e., (Capex – Depreciation – Sales) does not equal Δ(Level of PPE). The lack of reconciliation is due to the effects of M&As and write-downs of PPE,

The idea behind the table is that capital expenditures increase the level of PPE, while depreciation and sales of PPE reduce the level of PPE. So, by assessing the relative magnitudes of these amounts, one can judge the relative importance of PPE uses for internal and external purposes, and thus draw some conclusions about which model of financial reporting is more appropriate for such assets. Figure 1 provides a graphical view of some of the relations in Table 1, plotting the ratio of Sales of PPE to Depreciation in Panel A, and the ratio of Sales of PPE to Level of PPE in Panel B.

An examination of Table 1 and Figure 1 reveals two main results relevant for our considerations. First, the amount of Sales of PPE is small compared to the amount of Depreciation. Panel A of Figure 1 reveals that the ratio of these two amounts varies over the years but for all practical purposes it looks like it is bounded between 10 and 20 percent. Thus, the use of PPE for internal purposes exceeds the use of PPE for external purposes on the magnitude of 5 to 10 times, which suggests that the primary use of PPE is by far internal to the firm and its operations. Second, the amount of Sales of PPE is tiny compared to Level of PPE. Panel B of Figure 1 reveals that the ratio of these two aggregate amounts hovers between 1 and 2.5 percent, suggesting that only a small amount of PPE is relevant for current considerations of PPE's market value. Such magnitudes also question the wisdom of fair value-type accounting for PPE and PPE-type assets. If the motivation is that one needs to include the fair values of PPE on the balance sheet to reflect what such assets would fetch on the market, this motivation is strained considering that the fair values (even if they can be determined) are irrelevant for 98 to 99 percent of the assets. This motivation is further strained when one considers that for the sake of properly reflecting the value of a small percentage of assets, one revises the value of all assets, and this revaluation flows through the income statement, injecting great volatility in earnings.

The tenor of the empirical results above is consistent with business intuition and with arguments that firms primarily invest in PPE assets to use them in their production process, and that sales and market values of PPE are of second-order consideration and largely incidental to the business. The implication is that the proper accounting for such assets needs to reflect this business reality and thus PPE accounting has to be primarily concerned with the internal use of PPE, and much less with the fluctuations of outside PPE values. Thus, the income statement model of financial reporting is the natural basis for the accounting for such assets.

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for which Compustat provides insufficient detail. Nevertheless, it is clear that Table 1 captures the first-order effects in the PPE account.

Note that a large minority of business activities and whole businesses do follow a process of value creation which has a balance sheet orientation, and where balance sheet-based accounting is sensible. A stark example is a firm whose only assets are marketable securities. Since the assets are freely divisible and separable, and have value independent of the existence of the firm that holds them, keeping track of their changing values is all that one needs to know about this firm, and one would readily agree that "earnings" for this firm is just the changes in the value of the underlying assets during the current period. The logic of this example can be extended to other situations, e.g., firms whose assets are undeveloped real estate holdings or a firm that holds a collection of patents. To varying degrees, most financial firms also justify some sort of balance sheet-based accounting because most financial assets have values and lives, which are largely independent of the existence and operations of the company that holds them.

Roughly speaking, the dividing line between income statement-oriented operations and balance sheet-oriented operations seems to be the distinction between operating and financing activities. For financing types of assets and liabilities, and firms that hold them, a balance sheet-oriented accounting makes sense. However, the balance sheet orientation seems inappropriate for the operating activities of most companies, which continually engage in the productive destruction of their assets, and where assets have little independent existence and therefore little independent and separable value. As Paton and Littleton (1940) and many others have put it, most assets are "unexpired costs" rather than free-standing economic units with independent and separable value. Thus, for most types of firms, and for most types of activities, the income statement approach seems the natural fit for their process of value creation, while the balance sheet approach is the preferred option in more limited and specific circumstances.

B. The alleged conceptual superiority of the balance sheet approach is unclear. If anything, one can argue that the concept of income provides a clearer and stronger foundation for financial reporting

The FASB has consistently expressed a belief that the balance sheet approach allows establishing a solid conceptual foundation, which naturally and logically leads to building the theoretical structure of financial accounting. Specifically, the FASB considers the concept of "asset" as the most important and fundamental in accounting, and other concepts as derivative and secondary to it. For example, "liabilities" are essentially the converse of "assets", "equity" is the residual of asset

and liabilities, “revenues” are increases in assets or decreases in liabilities, and “expenses” are decreases in assets or increases in liabilities, see Storey and Storey (1998) and Bullen and Crook (2005). The structure of the accounting that results from this ordering indeed seems appealing but this paper argues that its foundations are far from solid, and from there the whole structure looks shaky.

Recall that the FASB considers the balance sheet approach superior because earnings is a change in value, and one cannot define a change in value before establishing what value is, and that leads to asset and balance sheet-based accounting. In light of this argument, consider the FASB’s formal definition of assets: "Assets are probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events" (Statement of Financial Accounting Concepts 6). This definition states that an asset is something which brings future “benefits”, and probably the implied meaning here is net benefits, e.g., a rental property is an asset because it produces rental income after rental expenses. However, in such a case net benefits sounds very much like “earnings”, which leads to circularity in FASB’s argument. The FASB argues that asset-oriented accounting is superior to income-oriented accounting because one needs to define assets before one can define earnings, and then proceeds to define assets in terms of expected earnings!

The point is that economically the concept of asset and income are inextricably connected. If there is income, one can infer that there is some type of economic asset that is producing it. If tangible assets are not visible, then one can infer that there must be some intangible assets or what accountants call goodwill (the synergy of other assets) behind it. And the converse applies as well, if one has an “asset”, that means there is some kind of a stream of income attached to it, otherwise it will not be an asset. The FASB seems to suggest that the two concepts can be divorced and one can be made primary and superior to the other. Perhaps what the Board had in mind was that sometimes it seems that there is no clear stream of income attached to an asset but it can be valued, perhaps based on an appraisal or some type of exchange or market value. However, implicit in the appraisal or the market value is again some stream of future benefits or distribution of benefits, be it rental income, higher margins due to a successful brand, or dividends on stock. Thus, the conceptual superiority of the balance sheet approach is unclear.

If anything, one can argue that the concept of income is more fundamental and clear, especially in light of the increasing prominence of intangible assets. As discussed above, the concept of income is crystal-clear in one-shot deals, e.g., selling for $10 something that cost $7 produces income of $3. For more realistic situations and firms, the concept of income is also reasonably clear over long

horizons because by design income and net cash flows converge over such horizons, e.g., one can get a reasonably clear idea about "how much money" Microsoft made over a 10-year period. The challenges of applying the income concept stem from the fact that most firms have continuous, overlapping and interwoven activities, and that the horizon of interest is short, e.g., it is a lot harder to say what "income" is for Microsoft over any given quarter. However, these are not conceptual but operational and technical difficulties, and after all, it is precisely in solving such difficulties where the value-added of accounting is. Otherwise, note that the clarity of the income concept is universal, it applies in a comparable manner from the most mundane to the most sophisticated business. No matter whether the business is a coffee cart or a manufacturing company or a film studio or a biotech company, it is easy to see whether the company is "making money", especially in the long run.

In contrast, it is far from clear what the "assets" of Microsoft are, and how to account for them. The balance sheet for Microsoft lists some assets but these are not much help in accounting for Microsoft's extraordinary profitability. Based on the abnormal profits, one can infer that there must be some missing assets, and one can call them intangibles or goodwill or human capital or monopoly position or captive customer base but these will be just names, and the whole exercise is not very illuminating or helpful in practice. The point is that today many, if not most, assets are elusive conceptually and difficult to operationalize in any helpful way. The steadily growing market-to-book ratio of most firms is a succinct illustration and testament to this problem. Ironically, those who try to derive estimates of intangible assets typically use projections and discounting of some sort of income to accomplish the task, e.g., one can derive the value of the Coca Cola brand by estimating the future price and volume premium due to the brand name, and discounting it to derive a present value. Such derivations clearly reveal that the existence and valuation of intangible assets is derivative and conditional rather than fundamental. This presents a tremendous practical problem considering that today intangible assets apparently account for a great part, and perhaps even the majority, of firm assets, e.g., the average market-to-book ratio is much higher than one, see also Lev (2003).

C. Balance sheet accounting is likely a major contributor to the substantial temporal decline in the forward-looking usefulness of earnings

Investors use earnings as the primary metric to evaluate prospective and existing investments. The classics of investment theory advise us to "buy earnings" and surveys reveal that investors and analysts consider earnings to be by far the single most important number about firms, e.g., Graham,

Harvey, and Rajgopal (2005). Note that the notion of earnings that investors find useful is not "changes in assets" but "recurring earnings", essentially the current earnings that are the best predictor of the future stream of earnings that the firm will produce. Thus, for investors good earnings means a metric that is highly persistent and predictive of future earnings.

In contrast, the balance sheet approach views assets as the store of value and earnings as "changes in net assets", which implies low persistence and predictability of earnings. In the extreme, balance sheet accounting is pure mark-to-market accounting, where every asset and liability is updated to market or fair value each period. Since it is well-known that market values have unpredictable changes (Samuelson 1965), pure market value accounting implies earnings which are pure noise, with high volatility and zero persistence and predictability. Thus, the balance sheet approach creates earnings, which are at odds with what investors consider "good earnings".

Unfortunately, the empirical behavior of earnings suggests that this is not just a theoretical concern, and indeed a lot of damage has already been done. Dichev and Tang (2007) examine the empirical properties of earnings of the 1,000 largest U.S. firms during the last 40 years, and find that comparable earnings volatility has more than doubled during this period, while earnings persistence has fallen from 0.91 to 0.65, a substantial deterioration in the basic properties of accounting earnings. This evidence is especially troubling because the study finds little change in the properties of the underlying revenues, expenses, and cash flows over the same period, and more generally the evidence suggests that the bulk of the changes in the properties of earnings are due to changes in the accounting rather than due to changes in the real economy. On the practical level, the changes in the properties of earnings happen because the balance sheet approach mandates various asset revaluations, which result in an increasing number and magnitude of write-offs, "one-time" charges, and other non-recurring items. Givoly and Hayn (2000) also find that the volatility of earnings has greatly increased over time, while the volatility of cash flows has largely remained the same. Given these temporal changes in the properties of earnings, it is not surprising that Collins, Maydew and Weiss (1997) find that the relation between stock prices and earnings has become steadily weaker over time.

Thus, existing research suggests that the balance sheet-based model of financial reporting has already produced a marked deterioration in the forward-looking informativeness of earnings. Earnings today are much more volatile and less persistent, which implies that current earnings tells you less and less about future earnings. If these trends continue unabated for another 30 to 50 years, there is a very

real danger that earnings will become a meaningless number for forward-looking applications, something which will have far-reaching repercussions in many directions.

One possible consequence is that useless earnings pose a threat to the very utility of the accounting system, and that may lead to an erosion of the accounting function and profession, at least as far as financial accounting is practiced today. A related implication is that investors and their various proxies will increasingly turn to non-GAAP metrics of value. The experience with pro forma earnings during the last 10 to 15 years offers a foretaste of what is to come, and the fact that it was a chaotic and confusing experience suggests that there are very real costs to producing inferior earnings.

The deterioration in the informativeness of earnings also suggests the possibility of a further stratification between sophisticated and unsophisticated investors in the security markets. One could argue that the major beneficiary from good earnings is small and unsophisticated investors, who tend to use heuristics like price-to-earnings ratios to value investments. As long as current earnings is a good guide to future earnings, and thus provides a solid link to firm value, such heuristics work fairly well. However, unsophisticated investors who continue to uncritically rely on earnings will increasingly feel like standing on shifting sand as the predictive power of earnings continues to erode. In contrast, sophisticated investors will have an increasingly keener edge over them because of their differential ability to understand and work through the mounting problems of earnings as a guide to investment value. Given that one of the mandates of security regulators is to level the playing field in financial markets, it is ironic that the FASB, being the proxy for SEC in accounting standard setting, has implemented a course of action that threatens to produce the opposite result.

D. There are substantial problems with applying the balance sheet-based model of accounting in practice

Some of these problems have already been discussed in other sources, e.g., "mark-to-market"-type accounting rules are difficult to apply when there are no reliable estimates of market values, and thus in practice firms have to resort to "mark-to-model" accounting instead. Of course, the weakness of the "mark-to-model" approach is that it involves considerable managerial discretion with respect to inputs, and from there the potential for large estimation errors and outright manipulation. For example, "mark-to-model" accounting became notorious after the fall of Enron, where it was extensively used to manage earnings, see Palepu and Healy (2003). Although the Enron example is an extreme case, it

illustrates the more general dangers of introducing much (and avoidable) subjectivity in estimating financial results.

Because the subjectivity theme is already prominent in other sources, here the attention is on another point, which is less well-recognized. Balance sheet-based accounting and especially its more extreme forms of mark-to-market and fair-value accounting, create a feedback loop between financial markets and the real economy, and may possibly lead to or exacerbate market bubbles. Generally speaking, fair value accounting puts a lot of faith in market prices and elevates them into an unfailing standard of correctness. This is a dangerous premise when market prices can deviate from fundamental values, something which recent research increasingly recognizes and documents, e.g., see reviews in Hirshleifer (2001) and Shleifer (2000). Accounting needs to recognize the difference between the real economy, where real economic value is created, and the financial markets world, which makes educated guesses about the values of claims to real economy wealth and trades them. For most firms, accounting needs to reflect their real economy activities, and provide inputs and independent checks on the valuation and trading process in financial markets. Failure to do so confuses what is being measured and undermines the independent check function of accounting. In the extreme of pure mark-to-market accounting, accounting and financial markets functions are fused, where firm performance and firm valuation become an empty and self-fulfilling tautology. For example, markets go up because firms have earnings, which they have because markets are going up and their assets are revalued up (see also Plantin, Sapra, and Shin 2005 for an elaboration on this point). And the converse happens when prices are heading down, in a self-propagating spiral. Of course, to some extent this description is oversimplifying the matter to make the point – but we are moving in this direction.

IV. Suggestions about what a "better" conceptual framework might look like

As an extension and conclusion, this study offers some observations on what can potentially serve as a "better" model of financial reporting. One caveat here is that, as clarified in Gonedes and Dopuch (1974), any discussion of "better" needs to be understood as taken from the perspective of a given user or constituency of financial reporting, especially if different constituencies have conflicting preferences. Consistent with prevalent beliefs and FASB's own statements (including the proposed new conceptual framework), this paper takes the outside investor perspective.

The first major feature of an alternative model of financial reporting is a clear theoretical and practical distinction between operating and financing activities. Operating activities include all activities, which are related to the regular business of the company, and which are related to the transformation of purchased and internally-produced inputs into goods and services to be sold on the open market. Thus, operating activities here encompass most of what is labeled today as "operating" and "investing" activities.

A defining feature of operating activities is that resources used in them (operating assets) have a primary purpose of supporting and enhancing these within-the-firm activities, and have only limited and peripheral value as independent, free-standing, and marketable stores of value, i.e., even if available, fair values for these assets are not reflective of their primary value to the company. Thus, operating assets are primarily non-cash assets like PPE. In contrast, financing activities revolve around cash and cash-equivalent assets and liabilities like marketable securities and perhaps accounts receivable, which are separable from the firm and have value that is largely independent from the firm's fortunes. In practice, there will be some controversy and debate about the precise operational divide between operating and financing assets and liabilities, and the demarcation between these two categories may shift depending on the nature of the business. However, such controversies and judgments are nothing new for accounting, and in fact they are an integral part of its essence and utility to users of financial information.

The important distinction between operating and financing assets and activities should be reflected in all financial statements. The income statement needs to clearly identify the difference between earnings from regular operating activities, which have a lot of persistence and forward-looking informativeness, and the earnings due to value fluctuations in financial assets, which have little persistence and predictive power. Thus, accounting will have to move away from the hallowed notion of a single "bottom-line", a number that neatly summarizes the entire performance of the firm. Of

course, the abandonment of a bottom-line number leads to a regrettable loss of parsimony and could place at risk the pre-eminence of earnings in investor decisions. However, the accumulation of changes in the business world and accounting has led to a situation where continuing to mix two very different sources of income also has substantial and probably higher costs, and thus the evolution towards two and maybe more groupings of income seems necessary. This projected evolution is also in line with what is already happening. In March 2007 the FASB revealed that it is considering sweeping changes in the way income is reported, including reporting separate income subtotals for a company's operating, investing, financing, and tax activities, see Reilly (2007).

The balance sheet also needs to separate assets from operating and financing activities because of their different nature and implications for valuation. Operating assets are not really independent assets but essentially just a listing of unexpired costs. One can rightly view them as a listing of shorter and longer-term operating bets or as commitments on streams of future operating costs. Most of these costs will be realized internally, and there is little reason to pursue fair value accounting for them. In other words, the value of these assets is value-in-use and there is no sense to use fair value or some other benchmark of outside utility to value them. In contrast, financial assets are freely divisible and separable from the firm, and are almost by definition going to be realized on some market, and therefore some type of mark-to-market or fair value accounting makes sense for them. The value of such assets is value-in-exchange, so exchange-based benchmarks of value are entirely appropriate. Finally, the cash flow statement also needs to make the distinction between cash generated from the company's operations and from financing activities.

The second major feature of an alternative model of financial reporting is renewed emphasis on the matching principle and, to a lesser extent, the revenue recognition principle as cornerstones of the accounting for operating activities. Note that, as argued above, the accounting for cash-like value-in-exchange assets is already well provided under the implemented and proposed rules of the fair value initiative. However, there needs to be a re-alignment of the accounting for operating, value-in-use assets along the lines of the income statement model of financial reporting. Most firms create value and are managed in an income statement mode, and thus accounting needs to follow and reflect this economic reality. The two overriding principles in income statement accounting are the revenue recognition principle and the matching principle. Thus, accounting needs to be clear about the definition and content of these two principles and then the more specific provisions have to align with and follow them. Of these, the revenue recognition principle seems comparatively more

straightforward, at least in theory; basically, revenue is earned when goods or services have been exchanged for cash or cash equivalents[7].

The matching principle, which relates relevant expenses to associated revenues, is thornier and produces considerable interpretation and implementation problems because many expenses are difficult to trace to specific revenues or periods. However, repairing and re-affirming the primacy of these two principles shows a clear general direction in which to make progress. If one is thinking about measuring performance for a given period, one has to derive a measure of the economic achievements (revenue) and the sacrifices that were made to accomplish these achievements (expenses), and performance is the difference between these two (earnings). The practical upshot from these considerations is that income statement-oriented accounting has to concentrate its efforts on mapping the economic link between firm expenditures and receipts and translating this link into revenues and expenses. For example, if there is a reliable link between R&D expenditures today and revenues for three years ahead, R&D expenditures need to be capitalized and expensed over the next three years. The goal is to make the accounting reflect and follow the economic logic of the business as much as possible.

If following the economic logic of the business is embraced as a guidepost for accounting, the argument for renewed emphasis on the matching principle is straightforward. Most businesses are run on the explicit or implicit logic of matching costs and benefits. Almost all managerial decisions contain an element of weighing the benefits of some action against the costs. For example, in considering whether to open a new product line or a new division, managers make a projection of the investment and operating expenditures, and will only green-light the project if the corresponding cash inflows or other benefits exceed the costs by a requisite margin. Thus, using matching in accounting is logical and necessary because it reflects the inescapable reality of cost-benefit considerations and results that pervade every business.

In other words, matching considerations are at the very core of how businesses are run and create value, and may be even considered definitive of what a "business" is (i.e., an economic unit that produces a surplus of cash receipts over associated expenditures). Thus, the real question is whether

[7] There are significant practical difficulties in revenue recognition, however, when the contractual arrangements are complex, e.g., multiple deliverables, significant rights-of-return, contingencies. In attempting to address these difficulties, the FASB and the IASB have embarked on a multi-year project aimed to align revenue recognition with the balance-sheet based model of financial reporting. At this point, it is unclear what the specifics of the final product will be but there is a high chance that these new rules will be another substantial deviation away from the income statement model.

accounting will choose to incorporate this core feature of business, and to what extent. If accounting aims to be a faithful reflection of the business, its core principles should reflect the core drivers of the business, and this intuition suggests that matching considerations should be a pivot for the financial reporting system. Of course, accounting can choose to ignore this intuition but that may prove perilous considering that matching is hard-wired in the essence of what a business is and how it runs.

Unfortunately, the current thinking at the FASB and the IASB completely ignores the concept of matching. An inspection of the Preliminary Views for a new conceptual framework reveals the consideration of a number of useful concepts like relevance, faithful representation, comparability, etc. but there is not a single reference to matching. In contrast, this paper argues that, together with revenue recognition, matching should be the cornerstone of financial reporting, and failing that, all these other concepts are deficient in content and utility.

V. Conclusion

The development of a full alternative model of financial reporting is a formidable task and thus these observations are offered more with the intent to spark a debate rather than as a solution. The accounting standard setters are currently re-considering the foundations of financial reporting, and the repercussions of this process will be felt for decades to come. This is the right time to join these deliberations because the costs of having a deficient reporting model are substantial and far-reaching. The converse is also true; accounting touches many levels and functions of society, and having the right model of reporting contributes to the welfare of us all.

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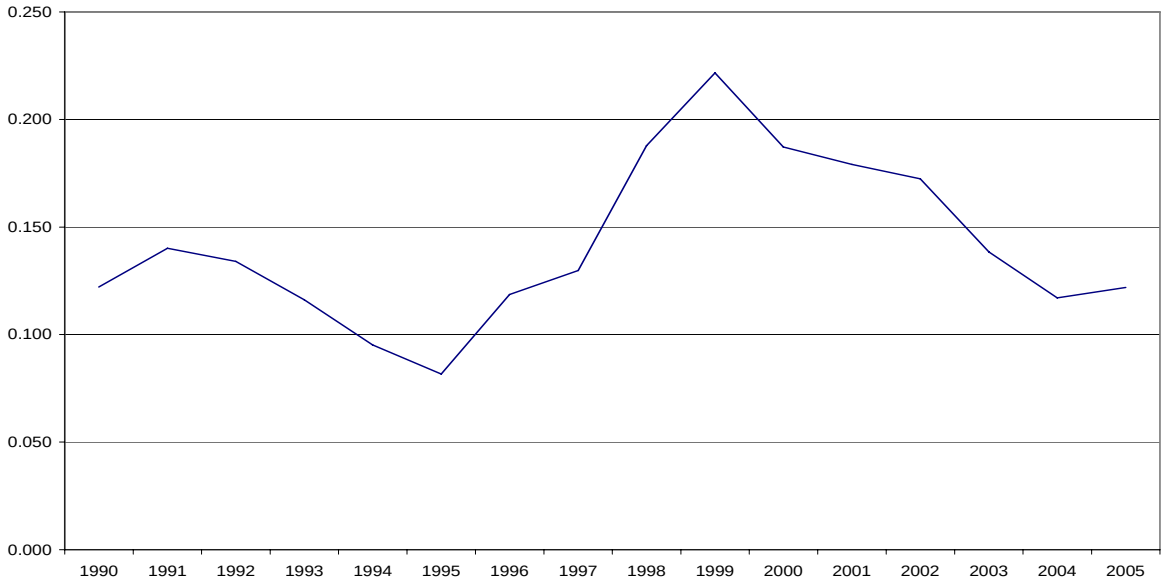
Table 1
Stocks and flows of aggregate U.S. PPE during 1990 to 2005
(in $ million)

Year	N	Capex	Depreciation	Sales of PPE	Level of PPE
1990	3,619	588,533	292,801	35,754	3,776,710
1991	3,728	591,587	309,991	43,434	3,939,801
1992	4,025	593,316	330,693	44,310	4,097,584
1993	4,403	619,158	376,048	43,663	4,249,339
1994	4,710	717,832	508,367	48,361	4,729,200
1995	5,163	814,474	579,783	47,319	5,053,372
1996	5,560	937,737	624,720	74,077	5,509,646
1997	5,622	1,027,705	674,603	87,549	5,712,572
1998	5,779	1,106,928	749,954	140,869	6,182,074
1999	5,967	1,169,959	819,191	181,581	6,768,889
2000	5,919	1,316,866	912,476	170,846	7,144,928
2001	5,445	1,284,313	969,085	173,581	7,355,361
2002	5,315	1,159,903	940,677	162,151	7,566,578
2003	5,220	1,108,077	1,017,712	140,846	8,048,863
2004	5,146	1,215,723	1,032,240	120,858	8,366,860
2005	4,473	1,133,675	821,247	100,062	7,042,813

All data are from Compustat, for firms with assets exceeding $50 million. *N* is number of available firms for the respective year. *Capex* is Capital Expenditures (Compustat annual item #128), *Depreciation* is defined as Depreciation and Amortization (item 14) – Amortization of Intangibles (item 65), *Sales of PPE* is Sale of PPE (item 107), *Level of PPE* is PPE – Net (item 8) as of year-end.

Panel A: Ratio of aggregate Sales of PPE divided by aggregate Depreciation in the U.S. over 1990 to 2005



Panel B: Ratio of aggregate Sales of PPE divided by aggregate Level of PPE in the U.S. over 1990 to 2005

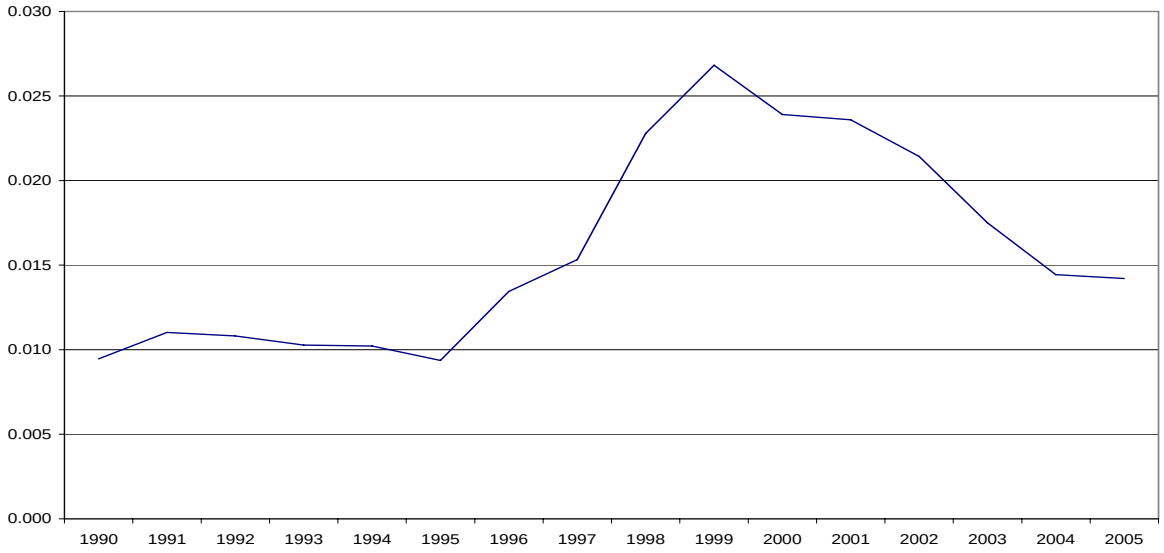


Figure 1

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