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A fundamentalist perspective on accounting and implications for accounting research

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ABSTRACT

This paper presents a framework for addressing normative accounting issues for reporting to shareholders. The framework is an alternative to the emerging Conceptual Framework of the International Accounting Standards Board and the Financial Accounting Standards Board. The framework can be broadly characterized as a utilitarian approach to accounting standard setting. It has two main features. First, accounting is linked to valuation models under which shareholders use accounting information to values their stakes. Second, the desirable characteristics of accounting information are inferred from the demand of investors and analysts who use the information in practice. This stands in contrast to the “qualitative characteristics” in the Boards’ Framework which are embraced largely on the basis of their aesthetic appeal. These features lead to a set of broad accounting principles that resolve “recognition” and “measurement” issues at the core of the Boards’ Conceptual Framework and also the central issue of a balance sheet approach versus an income statement approach. The framework in the paper also frames the research questions for researchers interested in accounting policy.

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1. Introduction

Accounting academics are involved in a variety of research, but one mission is paramount: to develop sound accounting principles. Accounting is so important to society, whether it be managerial accounting for a firm,

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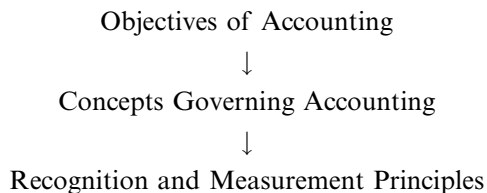


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government accounting to its citizens, or financial accounting for investors of capital. Researchers are sometimes advised to avoid normative statements on accounting policy, but to deny this mission would be akin to a medical school that has no interest in healing patients. This paper ventures into financial accounting which plays such a critical role in the functioning of capital markets and resource allocation. We provide some recommendations but, more importantly, we provide a framework for researchers to grapple with the issue of what is “good accounting.”

The question of what is “good accounting” absorbs the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) in the US. They struggle with the complexity of writing accounting standards with real dedication, but find themselves continually rewriting past standards – on revenue recognition, leases, pensions, off-balance sheet vehicles, restructurings, to name a few – or withdrawing from proposals – on fair value accounting for mortgages, for example. Some of this comes from dealing with complexity and adapting to changing conditions, and some from working in a political environment. But at the heart of the problem is the lack of an agreed-upon framework to guide standard setting and provide the cohesion and consistency that avoids a scatter approach.

The two boards appear to share this concern and have embarked upon a fresh conceptual framework project. Their endeavor starts with objectives and concepts. They then specify recognition and measurement principles that follow from these notions. “Recognition” determines what goes into financial statements and “measurement” dictates how they are measured. The sequencing of ideas appears to go as follows:



However, the project appears to be getting little traction.¹ Our guess is that the Boards’ approach will not be successful, though we wish them well. The underlying concepts of “relevance,” “neutrality,” “faithful representation,” and “comparability” that they propose are admirable and hardly ones to disagree with. But these concepts are too broad to cut through to a solution on a particular accounting issue and do not connect in any concrete way to what users look for in financial reports. In the Recognitions stage, they state definitions of assets and liabilities to which future accounting must conform. This promotes a legalistic approach that ties accounting to those definitions, rather than to the users’ needs, while entrapping preparers in a cobweb of accounting minutiae over interpretation of definitions. Complexity becomes the dominating characteristic. Anchoring accounting to a Hicksian definition of income and a “balance sheet approach” (as tentatively proposed by the Boards) has little resonance with analysts.²

This paper takes a utilitarian approach: we examine accounting policy from the perspective of a user, specifically the fundamental analyst who uses financial statements to value firms. “Fundamental analysis” involves assessing firm value from an understanding of business fundamentals, but those fundamentals are often observed through accounting numbers like sales, profit margins, balance sheet debt, and so on. Indeed, fundamental analysis is sometimes viewed as the processing of accounting information. What accounting helps the fundamentalist and what accounting frustrates her? Is it fair value accounting? Historical cost accounting? Rather than appealing to accounting concepts such as a “balance sheet approach,” or specifying “fair value” or “historical cost” as an (in)appropriate “measurement attribute,” we ask: what does the fundamental investor need? In so doing, we take the view that financial statements are a product and thus the accounting problem is one of product design, tailored to the customer: what does the customer need?³

¹ The two Boards released an exposure draft for the first stage of the project in May, 2008, covering the objectives of financial reporting and qualitative characteristics to govern accounting standards. They completed this stage in September 2010 and have since published proposals on Elements and Recognition and the Reporting Entity Concept. Currently, the Boards are conducting discussions on Measurement. See www.ifrs.org and www.fasb.org on the Conceptual Framework pages.

² A more detailed commentary on the initial stages of the Conceptual Framework project is in “A Framework for Financial Accounting Standards: Issues and a Suggested Framework,” *Accounting Horizons* 24 (September 2010), 471–485, by the American Accounting Association Financial Accounting Standards Committee (James Ohlson and Stephen Penman, principal authors).

³ This product design perspective is outlined in Penman, S. “Eye on the Prize: Directions for Accounting Research,” *China Accounting Review*, vol. 6, no. 4 (December 2008), 465–476.

In the stated objectives in their conceptual framework, the two Boards have the investor very much in mind. We firmly embrace that objective of the Boards to provide information “about the amount, timing and uncertainty of future cash flows” to equity investors and “how those cash flows affect the prices of their equity interests.” But, again, we find this too broad, lacking direction as to the specific accounting that satisfies the objective. One needs to cut to the quick: what is the accounting that the user requires to forecast cash flows?

The answer to this question might be solicited by going to investors and analysts directly and posing the question. Indeed, the accounting Boards have been very keen to get the opinions of analysts. It appears, however, that this approach does not elicit clear recommendations. For example, the leadership of the CFA Institute has come out strongly in favor of fair value accounting, while their rank-and-file working analysts seem to have a different opinion. The Boards’ recent insurance proposals have been controversial among analysts, with some endorsement (largely in Europe) and some strong opposition (largely in the US). We suspect the reason is that analysts use accounting data in very different ways; there is no common platform for carrying out analysis.

We take a different approach. First, we show how accounting numbers connect to valuation, providing a starting point from which to examine accounting issues from an investor’s point of view. This is done, in Section 2, by stating two formal relations, one that connects accounting numbers to price and one that connects accounting numbers to stock returns. These relations come from accounting research, a statement of what research to date has put on the table. So, they also serve as a point of departure for our suggestions for future research at the end of the paper. But, these formal expressions go only so far in directing the actual form that accounting should take. So, in Section 3, we articulate the demands of the fundamental analyst, the consumer of financial reports. This is done by stating a set of principles of “good practice” for fundamental analysis that conveys the type of information that the analyst desires. Finally, in Section 4, we overlay these “good practice” principles on the framework in Section 2 to reach conclusions about the form of “good accounting” that supports “good practice.” The following summarizes how we move from the valuation equations in Section 2 via the principles of fundamental analysis in Section 3 to the accounting principles in Section 4.

Valuation Principles



Analysis Principles



Accounting Principles

While the formal modeling in Section 2 is established in past research, the most conditional part of our analysis – to which the reader may take exception – is the statement of “good practice” principles in Section 3. All policy research must start with normative statements and we choose to make normative statements about practice to resolve accounting issues. These principles of good practice are not of our choosing, but rather gleaned from writings on fundamental analysts over many years. They are principles which an analyst can hardly disagree with; indeed, we believe they are commonly accepted. However, the acceptance of our framework largely rests on the reader’s appreciation that these principles make good sense for practice against alternatives that may be offered. The principles stand in contrast to the IASB and FASB approach: rather than specifying desirable “qualitative characteristics” of information *a priori*, we infer those characteristics from the demand by users. In contrast to the Boards’ concepts, our principles cut to the quick, producing immediate accounting recommendations. One critical issue of accounting policy is the contentious choice of a “balance sheet approach” versus an “income statement approach.” This is resolved within our framework.

We hasten to state that the focus on the equity analyst (and the equity investor) is not the only relevant perspective; there are other users of financial statements, and indeed, the Boards see their task as accounting for all investors. Indeed, the Boards take an “entity perspective” in their conceptual framework, while we take a “proprietorship perspective” where the focus is on accounting to shareholders, the owners. Our analysis is not necessarily definitive, just one that we are able to put on the table – to be evaluated against alternatives that others may offer. When available, we bring the results of research to the issue but, regrettably, research is short on answering normative questions. The gap in relevant research points to research questions, underscoring a secondary goal of the paper: to provide direction to research on accounting policy issues.

2. Connecting prices and investment returns to accounting numbers

A primary objective in the IASB and FASB conceptual framework documents is to provide information about future cash flows. But, the stated objective does not point to how this is to be done: balance sheets, income statements and their details are presumably important, but how do these financial statements connect to future cash flows and to value? This section lays out models that sharpen up the idea. The models come directly from research. The first is the standard residual income model that connects accounting numbers to equity value. The second is an expression that connects stock returns to accounting numbers.

2.1. Connecting accounting numbers to equity value

When it comes to equity investing, the cash flows that the Boards wish to forecast are dividends – the cash flows to shareholders. The standard dividend discount model expresses the idea:

$$Value_0 = \frac{Dividend_1}{1+r} + \frac{Dividend_2}{(1+r)^2} + \frac{Dividend_3}{(1+r)^3} + \dots \quad (1)$$

where r is the discount rate (the required return for risk borne) and the ellipsis points indicate that, for a going concern like a business, the forecasts continue indefinitely into the future. (Variables subscripted $t > 0$ are expected values here and in what follows.) There is no controversy about this model: it embeds the principle on which sound valuation must be based.⁴

The key is to connect accounting numbers to expected dividends and thus to value. Accounting, in fact, imbeds an operation that precisely does this, in the form of the clean surplus relation that governs the articulation of the income statement and balance sheet: $Book\ Value_t = Book\ Value_{t-1} + Earnings_t - Net\ Dividends_t$, or, in more operational terms, earnings for a period are closed to book value and dividends are paid out of book value.⁵ Accordingly, $Net\ Dividends_t = Earnings_t - (Book\ Value_t - Book\ Value_{t-1})$ so, substituting into the dividend discount model and iterating over future periods,

$$Value_0 = B_0 + \frac{Earnings_1 - r \cdot B_0}{1+r} + \frac{Earnings_2 - r \cdot B_1}{(1+r)^2} + \frac{Earnings_3 - r \cdot B_2}{(1+r)^3} + \dots \quad (2)$$

where B is book value and $Earnings_t - r \cdot B_{t-1}$ is referred to as residual income. The equivalence of model (2) with model (1) says that one recognizes that there is value on the balance sheet (in the book value) and then utilizes information that forecasts future earnings. If those forecasted earnings cover the required return applied to book value, one adds value to the balance sheet. Book value is value that has already been recorded (on the balance sheet), while the remainder is value that has not yet been recorded on the balance sheet – it is value that is expected to be booked to the balance sheet in the future.⁶

It is remarkable that accounting, in the form it has been practiced for centuries, ties so elegantly to value. Further, with only a mild additional condition (that is also honored in accounting as practiced) – dividends are

⁴ The model is attributed to John Burr Williams, *The Theory of Investment Value* (Cambridge, MA: Harvard University Press, 1938), though the idea of present value as a measure of wealth is due to Irving Fisher earlier. The model is essentially a statement of the no-arbitrage idea: present value must bear a no-arbitrage relationship to expected future cash flows, such that value must be the price at which one expects to earn the required return for the risk assumed, no more, no less.

⁵ The earnings must be comprehensive earnings, so the clean surplus relation is not strictly applied under IFRS or GAAP because “other comprehensive income” is booked directly to equity book value, bypassing the income statement.

⁶ The residual earnings model has had a long history. In the early part of the 20th century, the idea that a firm’s value was based on “excess profits” was firmly established in the United Kingdom. The model is in the German literature of the 1920s and 1930s, particularly in the writings of Schmalenbach. In the US, Gabriel Preinreich, an accounting and valuation theorist associated with Columbia University in the 1930s and 1940s, wrote extensively on the model, including “The Fair Value and Yield of Common Stock,” *The Accounting Review* (1936), 130–140 and “Annual Survey of Economic Theory: The Theory of Depreciation,” *Econometrica* 6 (1938), 219–41. In a 1941 paper, Preinreich recognizes the model in a prize essay by a student, J. H. Bourne in *Accountant*, London, 22 September 1888, pp. 605–606 (as referenced by Preinreich). Some relatively recent expositions of the residual earnings model are in E. Edwards and P. Bell, *The Theory and Measurement of Business Income* (Berkeley: University of California Press, 1961), 48–54 and 66–69, Ken Peasnell, “Some Formal Connections Between Economic Values and Yields and Accounting Numbers,” *Journal of Business Finance and Accounting* (1982), 361–381. The residual income model has been brought to the fore in modern academic research by James Ohlson, “Earnings, Book Values, and Dividends in Equity Valuation,” *Contemporary Accounting Research* 12 (1995), 661–687.

not included in earnings but are paid out of book value – the accounting-based valuation in model (2) honors the Miller and Modigliani principle of dividend irrelevance, so foundational to modern finance.⁷

However, with a view to establishing accounting principles, it is important to recognize that only one accounting principle is involved in model (2), the clean surplus relation. So, at this point, only one normative statement can be made: accounting should clearly report comprehensive income, for the equivalence of the model with the dividend discount model only holds if earnings are comprehensive.⁸ In all other respects, the model is mute on the accounting. Indeed, the model holds for random accounting numbers! Clearly, something else has to be brought to the table, and that we do in the next section of the paper. But one point is clear: the expression divides value between book value (already booked to the balance sheet) and value expected to be booked in the future. Dividends aside, book value is increased by earnings, by the clean-surplus relation, so it is a question of the timing of earnings recognition. That, of course, just reinforces the point that accrual accounting is a question of allocation of earnings to periods.

To make the point in the extreme, one can always apply an accounting whereby all expectations of the future are booked to book value such that

$$Value_0 = Book\ Value_0 \quad (2a)$$

(and expected residual income is zero). That, of course, is a form of fair value accounting. Is that the accounting that the fundamental analyst requires? The answer resolves around the question: how much anticipation of the future should be brought into the financial statements? This is the critical “recognition” question in accounting. It recasts the question in the Recognition stage of the IASB and FASB conceptual framework project. It is the question to which we return in Section 4.

2.2. Connecting accounting numbers to stock returns

Via the same clean-surplus relation, accounting connects to stock returns. Substituting

$$\begin{aligned} d_t &= Earnings_t - (B_t - B_{t-1}) \text{ into the stock return, } P_t + d_t - P_{t-1}, \\ Stock\ return_t &= Earnings_t + (P_t - B_t) - (P_{t-1} - B_{t-1}) \end{aligned} \quad (3)$$

This expression says that the stock return is always equal to earnings for the period plus the change in the premium over book value (price minus book value). If there is no change in premium, then the stock returns is equal to earnings. The expression first appears in Easton, Harris and Ohlson (1992),⁹ but textbooks of old used to state it in terms of the canceling error property of accounting: accounting may have error in the balance sheet (by carrying book value different from price), but earnings supply all the information for stock returns if the error is the same at the end of the period as at the beginning (that is, the errors cancel). Alternatively stated, earnings are sufficient for stock returns under this condition. Accordingly, accounting can tolerate error in the balance sheet, up to a constant, and still be perfectly informative; accounting that aims at a balance sheet that is sufficient for value, as in model (2a) is not necessary. We take this insight to the issue of accounting principles in Section 4.

The IASB and FASB objective is to provide information about the amount and *uncertainty* of future cash flows. Value is the present value of forecasted cash flows, discounted for uncertainty, so another possible dimension of accounting is to provide information about the discount rate. Couched in terms on the accounting valuation in model (2), the discount rate, r , is that which discounts expected residual income.

The discount rate is also called the cost of capital or the expected return for risk borne. Expression (3) can also be stated in terms of expected returns by rolling 1 year forward:

⁷ See James Ohlson, “Earnings, Book Values, and Dividends in Equity Valuation,” *Contemporary Accounting Research* 12 (1995), 661–687 which is a foundational paper that recognizes that accounting imbeds the same foundational propositions of modern finance.

⁸ More strictly, the equivalence holds only if expected future earnings are comprehensive. So, to the extent that “other comprehensive income” has components with mean zero expectation (like unrealized gains and losses and currency gains and losses), the current IFRS and GAAP treatment of bypassing the income statement with other comprehensive income is of no consequence.

⁹ See Easton, P., T. Harris and J. Ohlson, “Aggregate accounting earnings can explain most of security returns: The case of long event windows,” *Journal of Accounting and Economics* 15 (1992), 119–142.

$$E(P_{t+1} + d_{t+1} - P_t) = E[\text{Earnings}_{t+1} + (P_{t+1} - B_{t+1}) - (P_t - B_t)]$$

Dividing through by P_t to yield the expected rate-of-return,

$$E\left(\frac{P_{t+1} + d_{t+1} - P_t}{P_t}\right) = E(R_{t+1}) = \frac{E(\text{Earnings}_{t+1})}{P_t} + E\left(\frac{(P_{t+1} - B_{t+1}) - (P_t - B_t)}{P_t}\right) \quad (4)$$

While expression (3) gives insights into balance sheet versus income statement measurement, expression (4) gives insights into how accounting might provide information about the discount rate, as we will see.

However, while these expressions connect accounting to prices, returns and expected returns, they are mute on the form of the accounting. Something else needs to be brought to the issue. With a focus on the user, we do this by stating a number of principles of practice.

3. Fundamentalist principles of practice

The IASB and FASB conceptual framework starts with principles (like “relevance,” “faithful representation,” and “neutrality”) that define the characteristics of information to be supplied. We too start with principles that characterize the information, but they are principles that have to do with the demand for information. They are normative, albeit gleaned from practice. Normative statements are, of course, unavoidable: any normative analysis must start with normative statements.

The standard mantra of the fundamentalist is: price is what you pay, value is what you get. In contrast to those who see prices as an “efficient” measure of fair value, the fundamentalist sees price as speculative and potentially different from value. So she carries out an analysis of the fundamentals to challenge the market price. In doing so, she adheres to three principles:

1. *Understand what you know and separate what you know from speculation.*
2. *Anchor a valuation on what you know rather than speculation.*
3. *When valuing a firm to challenge the price, do not put price in the calculation.*

These principles are gleaned from the writings of fundamental investors over many years, particularly Benjamin Graham.¹⁰ Graham spoke of “value justified by the facts” and “minimum true value” versus “speculative value.”¹¹ The principles are simply “common sense,” distilled from human experience in coping with uncertainty.

The first two principles give more specificity to the relevance and reliability concept that appear so often in concept documents of the FASB. These concepts are often presented as tradeoffs: to get relevance, one gives up reliability (and that is said to be OK). But the fundamentalist says not to mix speculative information (that may be relevant) with reliable information, for it is reliable information to which she anchors to challenge speculative stock prices. The fundamentalist understands that prices are speculative and wants reliable accounting reports for anchoring a valuation. The fundamentalist implicitly says to the accountant: do not mix the two; tell me what you know, but leave the speculation to me. Otherwise, I lose an anchorage. Benjamin Graham decomposed value as follows:

$$\text{Value} = \text{Minimum true value} + \text{Speculative value}$$

With a little license (with accounting in mind) this might be restated as:

¹⁰ Graham’s treatise, *The Intelligent Investor*, rev. ed. (New York: Harper and Row, 1973) outlines many of the ideas. The first edition was published in 1949, and a reprint in 2005 with a preface by Warren E. Buffett. His other classic, with considerably more on technique, is Benjamin Graham, David L. Dodd, and Sidney Cottle, *Security Analysis: Principles and Technique* 4th ed. (New York: McGraw-Hill Book Company, Inc., 1962). The first edition, authored by Graham and Dodd, was published in 1934. A later incarnation is Sidney Cottle, Roger Murray, and Frank Block, *Graham and Dodd’s Security Analysis*, 5th ed. (New York, McGraw-Hill Book Company, 1988). A more recent book that follows the same principles is Bruce C. N. Greenwald, Judd Kahn, Paul D. Sonkin, and Michael van Biema, *Value Investing: From Graham to Buffett and Beyond* (New York: John Wiley & Sons, Inc., 2001).

¹¹ See Graham, B., “The Future of Financial Analysis,” *Financial Analysts Journal* 16 (May–June 1963), 65–70 where he warns to separate “minimum true value” from speculative value. In “A Conversation with Benjamin Graham” in the *Financial Analysts Journal* (September–October 1976), pp. 20–23, Graham also distinguishes “investment characteristics” from “speculative characteristics” of stocks.

$$\text{Value} = \text{Anchoring accounting value} + \text{Speculative value}$$

The accountant supplies information for the first component in the financial statements but does not contaminate that anchoring information with speculative information. Anchoring information might include current sales but not speculation about future sales (in a “fair value” discounted cash flow number, for example). Of course, information for speculation is also relevant and nothing here restricts disclosure of such below the line (in footnotes).

The anchoring idea and the need to supply accounting that challenges speculative stock prices is behind many of the accounting prescriptions later in this paper. With the stock market in China so volatile – some claim it is not well aligned with fundamentals – we hope that these ideas are appealing. The third fundamental principle is pertinent: if one is to challenge price with a value, then price cannot be part of the calculation of value. This, of course, bears directly on mark-to-market accounting that includes market prices in financial statements.

4. Accounting principles for the fundamental analyst

Our analysis has the same end goal as the IASB and FASB conceptual framework: to establish recognition and measurement principles for the balance sheet and income statement. The burning issue of fair value accounting versus historical cost accounting is, of course, involved, but so are many other issues. For the balance sheet, the Boards have offered a set of definitions of assets and liabilities that govern recognition, with the measurement phase still in discussion.

Expressions (2)–(4) provide our starting point but, as said earlier, they do not take us far enough. While they state how an analyst connects accounting information to value and the discount rate, they are mute on the form of that accounting. Adding the principles of the last section carries us to conclusions about accounting. The accounting principles we state here are broad principles that are not detailed for every accounting issue that could arise. But we believe that the principles are operational enough such that the treatment of a specific issue can be inferred with little ambiguity.

4.1. *Balance sheet approach versus income statement approach*

For the valuation expression in Eq. (2), the clean surplus accounting relation connects accrual accounting numbers to cash flows. It is not just an equation, it is an actual accounting operation: start with the balance sheet, calculate earnings for the period, close earnings to book value (via the closing entry) and pay dividends out of book value. This, of course, is the accounting cycle taught in every beginning accounting class and (largely) applied in IFRS and GAAP.

The first issue that arises for a system of articulated income statements and balance sheets is whether to emphasize the balance sheet or the income statement, and the IASB and FASB rightly confront this issue. The “balance sheet approach,” which appears to be favored in the Boards’ conceptual framework discussions, focuses on measurement in the balance sheet, with the income statement being the residual; as, under clean surplus accounting, the income statement is just the change in the balance sheet (adjusted for net dividends), the income statement “falls out” as the difference between successive balance sheets. The Board has supported this notion by an appeal to one version of Hick’s definition of income: income is the amount of wealth that a man can consume in a period and leave himself as well off at the end as at the beginning. Accordingly, the focus is on measuring wealth at the beginning and end of the period (in the balance sheet). In contrast, the “income statement approach,” focuses on measurement of earnings for the period, with the balance sheet falling out as a transition between income statements, that is, for carrying balances that are not involved in income measurement. Put another way, the balance sheet approach focuses on the measurement of assets and liabilities (with equity the difference between the two), while the income statement approach focuses on revenues from trading with customers and the earnings derived there from after “matching” expenses incurred to generate the revenue.

For example, a balance sheet approach carries inventory at its fair value (what it is worth), whereas an income statement approach carries it on the balance sheet as cost that is not yet matched to revenue from

customers in the income statement. Under the income statement approach, inventory is a cost of trading with customers, but a cost that is recognized (as cost of goods sold) only upon a transaction with a customer; the cost is subtracted from sales to calculate value added from trading with customers. Accordingly, inventory cost is carried on the balance sheet until a sale is made. An income statement approach might recognize a deferred credit (liability) to effect matching of expenses to revenues in the income measurement, whereas the balance sheet approach would not see this as part of the balance sheet because it does not fit the definition of a “true” liability. The inventory example pertains to measurement, the deferred credit example to recognition.

Expression (3) in Section 2 provides insight into the issue of a balance sheet approach versus an income statement approach. Underlying the balance sheet approach is the idea that accounting is in error if the balance sheet does not convey the value of assets and liabilities. This idea is presumably behind the common claim that we need current values in the balance sheet and historical cost is “backward looking.” But the returns–earnings expression (3) says that this is not necessarily correct. Accounting can tolerate error in the balance ($P - B$ different from zero): provided the error in the balance sheet is unchanged over the period, earnings are sufficient to imply stock returns. And, as value is expected stock returns (equal to expected earnings) capitalized, earnings are sufficient to infer value (and wealth); one can value from stocks of value (the balance sheet) but also from flows (earnings). In short, a balance sheet approach is not necessary because there is also an income statement. Of course, there is an issue when the premium changes.

The point is pertinent to the claim that the balance sheet is deficient if intangible assets are omitted. That is not the case: if an intangible asset (like a brand) is missing from the balance sheet, there is no issue if the earnings from the missing asset are coming through the income statement.¹² The point is also pertinent to the capitalization or expensing of R&D, or any investment in an intangible asset like human resources, brands, customer relationships, and supply chains. Expression (3) recognizes the canceling error property of accounting: it does not matter if one capitalizes and amortizes the expenditure or expenses it immediately if there is no change in the balance sheet error. That point is taught in first accounting class where the student is told that earnings are the same irrespective of whether R&D is capitalized and amortized or expensed immediately provided there is no growth in R&D expenditure (for growth induces a change in the premium, $P - B$).

The recognition of value of assets on the balance sheet, by putting brands on the balance sheet or by applying fair value accounting more generally, can add error that does not cancel but actually compounds. Estimating the value of a brand (for Coca-Cola Company, say) is subject to considerable error, thus putting a “fluffy” number on the balance sheet. But that error goes through to the income statement, because the income statement is just the difference in successive balance sheets. Indeed, the error is compounded, for the error in the income statement is affected by the balance sheet error at both the beginning and end of the period.¹³ If one has a fuzzy balance sheet, it is less informative, but if one also loses the information in earnings, the loss is more general: such accounting could produce an uninformative balance sheet and also a less informative income statement. Coca-Cola is in fact relatively easy to value based on its historical cost earnings, a valuation that would be made more difficult under a balance sheet approach.

In sum, the discussion stresses that an income statement approach (with a focus on earnings measurement) is not only an alternative to a value approach in the balance sheet but also provides the correction to an imperfect balance sheet. Given that a perfect balance sheet is hard to achieve – value is hard to measure – this is an important point. And the discussion highlights that an attempt to provide a value balance sheet (that inevitably has measurement error) can actually destroy the earnings that compensate for error in the balance sheet. However, it does not have much to say about the measurement principles for the balance sheet and income statement. For that, we invoke the fundamentalist principles.¹⁴

¹² This point is elaborated upon in Penman, S. “Accounting for Intangible Assets: There is Also an Income Statement,” *Abacus*, vol. 45, no. 3 (September 2009), 359–371.

¹³ This effect is demonstrated formally in Peasnell, K. ‘Institution-specific Value’, BIS Working Paper No. 210, August 2006.

¹⁴ Many of the principles below are also found in “A Framework for Financial Accounting Standards: Issues and a Suggested Framework,” *Accounting Horizons* 24 (September 2010), 471–485, by the American Accounting Association Financial Accounting Standards Committee (James Ohlson and Stephen Penman, principal authors). The framework for arriving at these principles differs, however, and is more akin to that in Penman, S., *Accounting for Value* (New York: Columbia University Press, 2011).

4.2. Recognition and measurement in the balance sheet

Expression (2) directs the analyst how to handle the balance sheet and income statement in valuation: start with the balance sheet, then add value to the balance sheet if earnings forecasts are in excess of those from the required return applied to book value. Or, in different words, anchor on the book value and then add speculation about future earnings.

The separation of the balance sheet, observed in the present (now), from speculative forecasts of the future is akin to the fundamentalists' separation of what we know from speculation. With the principle of anchoring on "what you know" rather than speculation, one can restate the division of value in Section 3 as follows:

$$\text{Value} = \text{Anchoring balance sheet value} + \text{Value from speculative earnings forecasts}$$

Fundamentalist principles require that the anchoring balance sheet be non-speculative. Thus, the principle for measurement in the balance sheet is stated as follows:

The balance sheet principle: The balance sheet rests on facts observed in current and past transactions and eschews speculation about future transactions.

The defining measurement comes from transactions where "transactions" refer to actual, verifiable events which the firm is drawn into, those that establish and change a firm's property rights and contractual obligations. Transactions stand in contrast to estimated future events that can be "relevant" but are speculative. In addition, transactions must be of "arms-length" and thus cut across self-dealing.

The reader can see that we are endorsing historical cost accounting versus accounting based on fair value estimates of the future, though better terminology might be "historical transaction accounting." Specifically excluded from the balance sheet are estimates of future transactions, for they are subjective – they are speculation. To the extent that estimates are used (for bad debt provisions, warranty liabilities, and the like), they are based on the evidential history of a firm's experience with transactions (of actual bad debts and warranty claims), not conjecture.

In more colloquial terms, the balance sheet that anchors the valuation must be "hard." "Soft," speculative intangible assets are not booked to the balance sheet. By "hard," we mean that the investor is assured that balance sheet accounting cannot come back to hit her later. Shunting liabilities off-balance sheet, with repercussions to follow, does not suit her. "Soft," speculative intangible assets are not booked to the balance sheet for those intangible assets are speculative, subject to future outcomes; they can come back to hit the investor if the asset value is not realized. Fair values put risk into the balance sheet – the value is an expected value that may not be realized – and thus are typically excluded.¹⁵

Conservative accounting broadly applies. When in doubt about carrying values, assets are impaired such that the balance sheet measure is not above estimated value. With revenues booked only from current transactions (and not expected future transactions), price-to-book ratios are thus expected to be above one, with the analyst adding value from speculative forecasts of future residual earnings.

4.3. Recognition and measurement in the income statement

With an anchoring to a hard balance sheet, speculation is added by the analyst to arrive at a value under the framework of Eq. (2). The income statement is the anchor for those forecasts. The anchoring principle for the income statement is:

The income statement principle: The income statement provides a forecast of what future income will be if current conditions prevail.

¹⁵ The exception of the one-to-one principle is recognized in Nissim, D. and S. Penman, *Principles for the Application of Fair Value Accounting*, Center for Excellence in Accounting and Security Analysis, Columbia Business School, White Paper No. 2, August 2007. The one-for-one principle refers to shareholder wealth moving one-to-one with market prices (in a liquid market), as with the price of a bond held as an investment. The principle typically holds for financing assets, but not for operations where value is added, not from market price movements, but from a business model that arbitrages input and output prices (costs and revenues) to make a profit, that is, trading with customers and suppliers.

Under this principle, the income statement provides the investor with a starting point for forecasting: to current income he or she adds speculation that conditions may be different in the future but, in absence of a forecasted change in conditions, future income will equal current income.

There are two aspects. First, revenues are based on actual trading with customers, not expectations of future revenues. Past sales are typically an indication of the ability to generate future sales, but speculation about future sales is left to the analyst.¹⁶ Second, expenses are matched to revenues to calculate a measure of value added from sales (operating income) that informs about the profitability of sales under current conditions. Thus, if the analyst forecasts no sales growth in the near term, current operating income is a good indicator of future income. And, if the analyst forecasts sales will be different, a reliable income forecast is made by applying the current profit margin to those sales (after excluding one-time items that are clearly indicated). The analyst might use other information (besides accounting information) to forecast a change in the profit margin, but a forecast of a change in profit margin should not be affected by how the accountant currently calculates it; there should be no earnings reversals in the future simply because of the way the accounting is done. While conservatism in the balance sheet is desired (see above), excessive conservatism (that writes down assets too much and reverses the write down to the income statement in the future) is inconsistent with this principle. And so with “cookie jar” accounting that shifts income between periods. In short, accounting that lends itself to earnings management violates the principle.

4.4. The deferral principle and risk

In their objectives statement, the IASB and FASB aim to provide information about the amount and *uncertainty* of future cash flows. Imbedded in the balance sheet and income statement principles stated above is the following principle:

The deferral principle: Under uncertainty, earnings recognition is deferred until the uncertainty has been resolved.

With accounting based on transactions, earnings recognition is transaction-based, largely driven by revenue recognition via actual sales. While the analyst may speculate about future earnings and sales, and while prices may be based on expectations of future earnings, transaction-based accounting is conservative: earnings are not booked until the firm has a customer, that is, until the uncertainty surrounding the expected earnings is resolved with a transaction.

This principle ties accounting to risk. But, it also ties accounting to the expected return, the discount rate, by Eq. (4). If there is no expected change in the premium ($P - B$), then the expected return is equal to the expected earnings yield, as under the effective interest method for bonds with no change in interest rates. But, with an expected change in the premium, the expected return equals the expected earnings yield plus the price-denominated expected change in the premium. But, it is the deferral of the earnings that induces a change in the premium.¹⁷

In sum, the transactions accounting implied by the fundamentalist principles of Section 3 produce accounting that is revealing of risk and the required return for risk: a firm with considerable earnings expectations built into its stock price, but earnings that have not yet been booked by transactions accounting is risky. Empirical evidence suggests that this is so.¹⁸ In contrast, fair value accounting puts risk into the balance sheet and thus this feature is lost. The fair value balance sheet, rather than being an anchorage for speculation about the future and its risk, becomes the embodiment of those risks.

¹⁶ For a proposal for revenue recognition that is consistent with the principles in this paper, see “Accounting for Revenues: A Framework for Standard Setting,” *Accounting Horizons* 25 (2011), 577–592 by the American Accounting Association Financial Accounting Standards Committee (James Ohlson and Stephen Penman, principal authors).

¹⁷ This is demonstrated in Penman, S., F. Reggiani, S. Richardson and İ. Tuna, “A Characteristic Model for Asset Pricing,” unpublished paper, Columbia University, Bocconi University, and London Business School, 2013.

¹⁸ See Penman, S. and F. Reggiani, “Returns to Buying Earnings and Book Value: Accounting for Growth and Risk,” *Review of Accounting Studies* (December, 2013), forthcoming.

5. Conclusions and implications for research

This paper has presented a framework for evaluating normative accounting policy. It is rooted in expressions that connect accounting numbers to valuation and in normative principles under which the fundamental analyst works in evaluating investments. It is thus theoretically and practically based, designed to provide an accounting product that serves the user. We do not claim that the framework and the accounting principles that come from it to be definitive, but offer them as a benchmark against which other normative frameworks can be compared. We trust that we have been clear as to “where we are coming from,” so that the reader can see the point at which he or she disagrees. We believe that our framework moves much quicker to accounting solutions than does the IASB and FASB conceptual framework project while, at the same time, is much closer to the accounting that a fundamental analyst desires.¹⁹

5.1. Implications for research

We close with some suggestions for future research in general, followed by some suggestions for future research with China considerations particularly in mind.

First and foremost, we encourage researchers to engage in normative accounting issues and research that gives rise to accounting solutions. That research should have its eye on the user: what accounting helps or hinders the user? It is helpful to see this research as similar to a medical researcher developing a new drug. He or she asks: what are the benefits and what are the side effects? This should be the approach to accounting issues.

Of course, there is considerable research already that can be characterized as investigating the product features of accounting. Research on earnings quality falls into this category, as does the research on the ability to manage earnings under IFRS and GAAP. We offer further suggestions. Many of these will require analytical modeling but most also lend themselves to empirical investigation.

- The ideas in this paper require more formal modeling. The revenue recognition principle is an important topic: why would an investor want the accounting for revenue to be transactions based? Why would an investor wish the deferral principle to be in place?
- The income statement approach works quite well with constant error in the balance sheet. But what accounting aids the investor when this condition does not hold? Would a mixed balance sheet and income statement approach (the “mixed model”) help?
- There is considerable need to understand the appropriate accounting for forecasting. Does the income statement principle stated above lead to better forecasting? How does IFRS and GAAP accounting frustrate forecasting? Clearly, the balance sheet principle is also relevant, for much of the balance sheet becomes future expenses.
- How should the income statement be presented to enhance forecasting? Different income statement items have different implications for the future, so the forecasting perspective would suggest that items should be grouped according to this criterion. This accords with the analyst’s desire for a measure of “sustainable income” or “core income,” that is, income that projects the future versus “transitory income” of the present.
- What are the effects of fair value accounting in the balance sheet? In contrast to historical transactions accounting, fair value accounting puts the risk in the future into the balance sheet. So, what are the risks that an investor faces with a fair value balance sheet? Is risk better understood with a balance sheet based on historical transactions accounting?
- Does fair value accounting lose information by destroying information available in historical cost earnings? What is gained by fair value accounting?
- What are the properties and effects of fair value accounting for mortgages? What are the effects of the prospective method versus the incurred-loss method for estimated loan losses?

¹⁹ The book, Penman, S. *Accounting for Value* (New York: Columbia University Press, 2011) illustrates how accounting of the type envisioned here can be applied to active fundamental investing.

- What are effects on stock prices of accounting that leaves the investor subject to “hits” from a “soft” balance sheet, for example, from leaving operating leases or pensions off the balance sheet?
- How is historical transactions accounting implemented? How does the accountant go about matching costs to revenues in the income statement? Issues of product cost and period costs arise, as does absorption costing versus variable costing and accounting for (excess) capacity costs.
- Can the deferral principle for recognizing earnings under uncertainty be more explicit, perhaps by linking accounting to an asset pricing model for the expected return via Eq. (4)?
- What principle determines whether research and development (or just development) should be capitalized and amortized? How are amortization rates determined? Does the uncertainty about amortization rates mean that R&D expenditures should be expensed immediately (with amortization left to speculation by the analyst)? Does the deferral principle under uncertainty imply the immediate expensing of (risky) R&D expenditures?
- From an analyst’s point of view, is the capitalization of brand-building expenditures (advertising and promotion) desirable? Again, do uncertain amortization rates (that induce imprecise matching) negate capitalization?
- How should the financial statements be designed to enhance analysis and, particularly, forecasting? This issue is pertinent to the IASB and FASB current project on financial statement presentation.

5.2. Implications for accounting research in China

Accounting in China operates in a much different environment than most developed economies. First, the current Chinese economy has evolved under a central-planning model, a process that started a bit more than 30 years ago. The legacy of central planning still permeates the Chinese economy. Second, most large enterprises, although partially privatized through share listing on stock exchanges, are still controlled by the state via majority equity ownership. The state government on one hand is the social administrator, and on the other hand is a controlling shareholder of these enterprises. When the objective as the social administrator differs from the objective of a controlling shareholder, agency problems arise within the government itself.²⁰ Non-state Chinese investors, in many cases in a minority position, have to deal with this peculiar agency problem (the *within-government agency problem*).

Accounting standards in China have evolved in the past 20 years out of the rigid and uniform Soviet accounting systems into the currently practiced International Financial Reporting Standards (IFRS). In most ways, the current Chinese Accounting Standards are congruent to International Accounting Standards in terms of objectives, concepts, recognition, and measurement. Accounting practice, however, may take longer to converge to international standards.²¹

Even though the accounting environment differs in China and official accounting standards have caught up with the international community only recently, we believe the role of accounting in society should not differ in any significant way in China. That is, accounting should provide investors with information to evaluate a firm and help investors allocate economic resources in an efficient way. Thus, we believe all the research questions that we raised earlier apply to China research. However, we also have some additional suggestions for China accounting research.

- How does the boundary of the firm differ in China with the presence of the within-government agency problem? That is, how does valuation change when the state controlling shareholder can tell the firm to conduct businesses in a way that fulfills social objectives that may harm firm value? What different or additional

²⁰ Commentaries illustrate the problem: “Why China Works? A look at bright spots in the recession begins with Beijing, where state control is looking smart.” *NewsWeek*, January 19, 2009.

²¹ For more details of the convergence of Chinese accounting into International Accounting Standards, see Bing Xiang, 1998, “Institutional factors influencing China’s accounting reforms”, *Accounting Horizon* 12: 105–119; Charles Chen, Ferdinand Gul, and Xijia Su, 1999, “A comparison of reported earnings under Chinese GAAP vs. IAS: Evidence from the Shanghai Stock Exchanges”, *Accounting Horizon* 13: 91–111; Shimin Chen, Zheng Sun, and Yuetang Wang, 2002, “Evidence from China on whether harmonized accounting standards harmonize accounting practices”, *Accounting Horizon* 16: 183–197.

information might the investor require? What are the implications for the proprietorship concept of accounting – the equity focus – that is imbedded in much of our discussion above? Is an entity concept of accounting more appropriate in China? Could accounting be brought to the issue of how value is divided between the achievement of social goals and shareholder wealth?

- How can accounting be designed to evaluate the effects of related-party transactions when the state is a major shareholder of the reporting entity and many of its business counterparts?
- In addition to the operational uncertainty that firms in other economies also face, the within-government agency problem creates an additional layer of uncertainty for investors evaluating a firm in China. A large portion of the economic activity is organized through government planning, and government priorities change frequently and are difficult to predict. How can accounting and disclosure address this additional layer of uncertainty and aid investors in forecasting? Reducing uncertainty has the benefit of reducing the cost of capital, a benefit to the economy as a whole.
- China has adopted fair value accounting along with the IFRS. However, Chinese capital markets are renowned for their volatility. A volatile market price translates into volatile earnings and balance sheet. What are the consequences of fair value accounting in China? Is China a model of how mark-to-market accounting works (or does not work) for the investor?
- Institutional investors account for a relatively small portion in China's stock market and casual observations show that the stock prices are highly speculative. What accounting can anchor the large set of retail investors better?

The two sets of suggestions for accounting research are big questions and surely have to be refined to get traction. On most of them, we do not have the answer. There is much need for further investigation such that accounting principles are established, not from conjecture, but as a product of sound research. The result will be concrete solutions for practice and an elevation of the status of accounting academics as having made a "contribution." All important is the thinking behind the research. We hope we have added to that thinking with this paper.