



## Conservatism as a Defining Principle for Accounting

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### ABSTRACT

The removal of “conservatism” as a qualitative characteristic from the Conceptual Framework of the IFRS has met with considerable resistance. This paper argues that conservatism has a role in accounting, but not as a qualitative characteristic. Rather, it serves as a defining principle for how accounting is to be done. It is thus central to resolving “recognition” and “measurement” issues in the Conceptual Framework, issues that determine what actually goes into the balance sheet and income statement but issues on which the Framework is particularly weak. As a “prudent reaction to uncertainty,” conservatism supplies the investor with information about the payoffs to investments, particularly the uncertainty involved in those investments.

*JEL Classification:* M41

*Key Words:* Accounting Policy; Conservative Accounting

### 1. Introduction

The International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) in the United States have oscillated in embracing accounting “conservatism” in their conceptual frameworks. The idea appears in the original FASB Concepts Statement No.2, as a “qualitative characteristic” but not as such in the current exposure draft of the IASB’s Conceptual Framework or the FASB’s most recent Concept Statement.<sup>1</sup> However,

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<sup>1</sup> See FASB (1980) for Concepts Statement No. 2 and IASB (2015) for the current Exposure Draft for the IASB Conceptual Framework. The current FASB Concept Statement No. 8 (FASB, 2010) is that Board’s latest attempt at a conceptual framework.

the demotion of conservatism in conceptual thinking is not without controversy.

This paper argues that accounting conservatism serves investors well and supports the argument with empirical evidence. Indeed, the paper identifies conservatism as a defining principle for how accounting is actually executed to convey information to investors.

The objection to including conservatism in the Conceptual Framework appears to be based on the notion that conservatism implies bias, and bias is undesirable. Conservatism is replaced with “neutrality,” a seeming more pleasing attribute. This paper shows that conservative accounting indeed implies bias, but (constrained) bias is a desirable feature of accounting information. With that bias, conservatism is not just one of many desirable qualitative features of accounting, but rather a core principle that can drive quantification in accounting. In identifying conservatism as a qualitative characteristic—worse, by dropping it altogether—the Boards’ Framework understates its importance. Rather, it is a key for resolving “recognition” and “measurement” issues in the Conceptual Framework (hereafter, CF).

Recognition and Measurement principles are at the heart of accounting—they determine what actually goes into the financial statements and at what amounts. Yet it is at this point that the CF is weakest. The CF attempts to resolve the issues by requiring the accounting to satisfy stated definitions of assets and liabilities while maintaining prescribed qualitative characteristics like “relevance,” “faithful representation,” and “comparability.” This approach fails to produce clear, concrete guidance for standard setting or practical accounting.

I hope to show that this impasse is for two reasons. First, qualitative characteristics are not definitive enough to resolve recognition and measurement issues. More cutting-edge principles are required. Second, asset and liability definitions fail to come to grips with the information that investors need; these legalistic definitions are far from their mind when they invest. The incorporation of conservatism, not as a mere qualitative characteristic but as defining principle for reporting to those investors, breaks the impasse.

Accounting standard setting is a design project. Financial statements are for users—the customers, one might say—so the accounting mission is to design a product that satisfies the customers’ demand. The CF is clear about this customer focus and who the customer is: the stated objective of financial reporting in the CF is to report to investors about the “amount, timing, and uncertainty” of future cash flows and on the stewardship of management to those investors. This paper endorses that objective with the implication that the CF is to be judged by how it satisfies this objective. The focus is on the first part of the objective, providing information about future cash flows. That, of course, is of prime concern to investors (and the analysts who support them) who wish to understand the value of investments (that is determined in valuation theory by expectations about the amount, timing, and uncertainty of future cash flows). This focus is without any prejudice to the stewardship objective. There is a considerable literature that investigates conservative accounting for stewardship reporting and more generally for contracting with agency issues and asymmetric information.<sup>2</sup> This paper complements that analysis with an alternative way of thinking about the issue—a way of thinking that does not necessarily involve agency issues.

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<sup>2</sup> See Kwon, Newman, and Suh (2001), Göx and Wagenhoffer (2009), Gigler et. al. (2009), Zhang (2008), and Wittenberg-Moerman (2008), for example. Mora and Walker (2015) and Barker and McGeachin (2015) evaluate accounting policy in light of these papers. Ewert and Wagenhofer (2012, Chapter 4) reviews the research in this area).

The paper begins by defining the concept of conservatism I have in mind. It then discusses the role of “qualitative characteristics” for resolving accounting issues and the omission of conservatism from those qualitative characteristics. The paper then shows how conservatism can be a defining principle to guide accrual accounting and the development of accounting standards for reporting to investors, and brings theory and empirical evidence to the issue.

## 2. Defining Conservative Accounting

A number of definitions of conservatism can be found in the literature, with a distinction often drawn between “unconditional conservatism” and “conditional conservatism.”<sup>3</sup> For purposes of this paper the definition in Concepts Statement No. 2 is embraced: conservatism is “a prudent reaction to uncertainty.” In other words, conservative accounting is accounting that deals with uncertainty.<sup>4</sup> It in no way excludes the concepts of unconditional and conditional conservatism—indeed, it identifies them as a reaction to uncertainty (as will be seen). It is this original definition of conservatism that is implicitly rejected in subsequent conceptual framework documents.

Given the stated objective of financial reporting to provide information about the “amount, timing, and *uncertainty*” of future cash flows (emphasis added), it is curious why conservatism is abandoned in the current drafts of the CF. Perhaps the elevation of “prudence” is meant to substitute, for it is now prudence that is tied directly to uncertainty: “prudence is the exercise of caution when making judgments under conditions of uncertainty” (IASB, 2015, paragraph 2.18). But something is lost in doing so. First, in the paragraph that contains this quote, prudence is invoked as supporting *neutrality*, and conservatism is deemed to be in conflict with neutrality.<sup>5</sup> Second, the original definition of conservatism refers to a “prudent *reaction*,” so is more demanding that a reactive accounting be developed—accounting that responds to uncertainty. The original definition is quite explicit: if accounting is to inform about uncertainty—as the objectives of financial reporting state—it is defined as conservative accounting.

Of course, all this wordsmithing is frustrating and perhaps unnecessary, and my parsing of the words might be seen as word-play. However, if accounting is to inform about uncertainty, as required by the CF objectives, we require an accounting that is a “prudent reaction to uncertainty.” Let’s call that accounting “conservative accounting” as Concepts Statement No. 2 indeed does.

### 2.1 *Conservative Accounting and Bias*

In the 2015 IASB draft of the CF, neutrality, “supported by the exercise of prudence,” is

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<sup>3</sup>The former refers to the expensing of investments that are particularly risky (such as R&D) or carrying booked assets on the balance sheet at low amounts (with accelerated depreciation, for example). The latter refers to further write-down of assets conditional upon the receipt of new information that indicates outcomes are likely to be lower than expected. Feltham and Ohlson (1995) and Zhang (2000) are the standard references for unconditional conservatism while those for conditional conservatism are Basu (1997) and Watts (2003a, 2003b).

<sup>4</sup>A distinction is often drawn between “risk” and “uncertainty.” No such distinction is drawn in this paper; uncertainty is taken to mean the absence of a certain outcome. The term, “risk” will sometimes be used, merely because it fits a given context.

<sup>5</sup>The FASB (2010) Concepts Statement No. 8, an amendment of Concepts Statement No. 2, excludes both “prudence” and “conservatism” because “including either would be inconsistent with neutrality” (paragraph BC3.27) and “an admonition to be prudent is likely to lead to bias” (paragraph BC3.28).

substituted for conservatism. The reason (it is said) is that conservatism implies bias and bias is intolerable in financial reporting. This seems to make sense. However conservative accounting, appropriately applied, means necessary bias.

Consider the accounting for receivables. A receivable is booked now (time zero) for cash to be received one period later (time 1). No-arbitrage valuation theory says that the value of that cash is the expected cash discounted for risk (at a discount rate,  $r$ ):

$$\text{Value of receivable}_0 = \frac{\text{Expected cash}_1}{1 + r}$$

Under IFRS, accounts receivable are indeed discounted (via an allowance for bad debts) for the “probability of non-receipt of cash.” An accountant, wishing to be unbiased, might apply the discount such that the receivable (net of the allowance) is equal to an unbiased estimate of the expected cash flow from the receivable. That supplies information about the *amount* of expected cash flows. However, the valuation formula says that the appropriate number is not the expected cash flow but a number that includes a discount to the expected cash flow for risk: the expected cash flow is biased downwards to reflect that discount.

Thus, accounting that reports on the “amount, timing, and *uncertainty*” of expected cash flows includes that discount as a “prudent reaction to uncertainty” about the amount of future cash flows. That requires a (conservative) bias in the net receivable below the expected amount of cash flows. Investors are then notified that expected outcomes are uncertain. Valuation theory also says that, with this discount, expected returns should equal the no-arbitrage return for the risk borne. With the (net) book value for the receivable at the discounted value,

$$\frac{\text{Expected Cash}_1}{\text{Book Value of Receivable}} - 1 = r$$

(from the equation above). That is, expected earnings to be reported next period is not zero but positive such that the expected book rate-of-return on the receivable is equal to the discount rate: the accounting yields expected earnings that are the reward for the risk borne in holding the receivable. That contrasts with zero expected earnings if the book value of the receivable is (unbiasedly) set to equal expected cash flows.

One might argue that the receivable example is trivial because the *timing* of the cash receipt is usually in the immediate future, so there is little remaining uncertainty. However, the accounting applies in the same way to a 30-year mortgage loan which has to be discounted for possible credit losses. And, even with receivables, the amount of the discount typically depends on the risk in holding the receivable, with a higher discount (allowance for credit losses) required for a high-risk receivable. Indeed, if the receipt of cash is highly uncertain, no receivable is recognized as all. That is conservative accounting in the extreme—accounting that takes a (large) discount to expected cash flows when uncertainty is high.

Again, one must not get hung up on terminology, and the CF framework documents are correct in dismissing (gratuitous) bias that is unrelated to the economics of the business. But business involves risk and the discount for risk in conservative accounting reflects the economics of the business.

### 3. Qualitative Characteristics and Operating Principles

These points might suggest that conservatism should be reinstated as a “qualitative characteristic” in the CF. But is that the place for it?

#### 3.1 *Qualitative Characteristics as Defining Principles*

The IASB proposed CF lists a number of qualitative characteristics that accounting data are required to exhibit. Premier among them are *relevance* and *faithful representation* coupled with the “enhancing” characteristics of *comparability*, *verifiability*, *timeliness*, and *understandability*. Should *conservatism* join the list to be effective?

There is little doubt that these qualitative characteristics are virtuous. Embracing them for financial reporting is not only noble but necessary. However, these qualities are not specific enough to resolve recognition and measurement; they have no cutting edge. Who would argue that accounting should not be relevant, faithfully representative, etc.? If we all accept that accounting should be relevant, does that tell us whether fair value accounting or historical cost accounting should be implemented? Both are surely relevant and one might be more relevant than the other, but we need something more to discriminate between them or to inform us under what circumstance one measurement approach dominates the other—and I cannot see the other qualitative characteristics resolving the issue. To the point, it is fair to say that, while the CF offers historical cost and current value on the menu of alternative measurements, it provides little guidance for choosing between them despite the presence of the umbrella of qualitative characteristics.

In short, qualitative characteristics are not operating principles to define how the accounting is to be done. They are broad, admirable qualities that apply to information generally, not characteristics that define accounting information in particular.

The CF is a proposed constitution for standard setting, so there are parallels in other constitutions, whether it be for a country, a society, or a club. In the constitution of the United States, for example, there is an admirable preface that upholds the ideal of freedom (“the Blessings of Liberty”) among others. However, the constitution only gets a cutting edge with the amendments, the Bill of Rights. So, the first amendment says the state cannot interfere with the freedom of religion, the freedom of speech, the freedom of the press, and the freedom to assemble peaceably. These operating principles give the constitution a cutting edge such that a court (like an accounting standard setter) has a firm basis to resolve individual cases. These are surely additional nuances that have to be dealt with in specific court cases—as there will be in standard setting for specific issues—but specific-enough guidance is there.

#### 3.2 *Conservatism as a Defining Principle*

These thoughts suggest that reinstating *conservatism* as a qualitative characteristic is not likely to be effective. However, the active tone in defining conservatism as a “prudent *reaction* to uncertainty” suggests that it could take on a role as an operating principle for determining how accounting should be done—a principle for recognition and measurement. Could this be the case?

##### 3.2.1 A Lesson from an Accounting Principles Course

I well remember the first accounting course I took as an undergraduate. The professor began the class by demonstrating the accounting for a tennis club. He called it Cash Accounting,

delivering a statement of cash receipts and disbursements and a balance sheet consisting only of cash. He then said that, for a business, we use a different type of accounting, called Accrual Accounting. This delivers an income statement rather than a cash-flow statement and a balance sheet with many more items than cash.

He characterized accrual accounting as follows: total cash flows over the life of a business equal total (accrual) earnings, but accrual accounting recognizes earnings in different periods than the cash flows. He then asked: what is the principle for recognizing earnings in each period? The answer: under uncertainty, earnings are not recognized until there is resolution of uncertainty. That is, under uncertainty, accountants defer the recognition of earnings until the uncertainty has been resolved. That “realization” point is typically when the firm has a confirmed customer and other uncertainties, such as the firm’s performance, are also resolved. This is a defining principle that generates the income statement. And, as earnings add to the balance sheet via the closing entry, it is also defining principle for adding value to balance sheet. Stated differently, the principle says: do not add to the balance sheet until there is resolution of uncertainty.

For the investor receiving accounting reports, a price-to-book ratio (P/B) thus represents the expectation of future earnings in the market price (P) that have not yet been recognized by the accountant in the book value (B). A price-earnings ratio (P/E) compares the expectation of future earnings in the market price (P) to earnings that are currently recognized (E). A high P/E forecasts significantly more future earnings than the earnings the accountant is currently recognizing. But, the accounting underlying the earnings measurement, tied as it is to uncertainty resolution, conveys something else to the investor: the expected earnings are at risk of not being realized.

This defining principle for the recognition of earnings is a “prudent reaction to uncertainty.” Concept Statement No. 2 calls that conservative accounting. Conservative accounting is not a qualitative characteristic, but a defining principle for how the accounting is done in the presence of uncertainty. Again, terminology is not important. If the words “conservative accounting” have other associations in some minds, an alternative label might be entertained. But the point is to recognize that investors require accounting for the uncertainty of future cash flows.

Characterized as an operating principle rather than a qualitative characteristic, conservative accounting now has a cutting edge: it discriminates between current value accounting and historical cost accounting. The value-in-use version of current value accounting measurement in the CF operates under a different principle for handling uncertainty: anticipate all future cash flows with a discount for risk (as in a discounted cash flow present-value calculation). That is very different from waiting until the firm wins a customer and cash flows are “highly probable.” So the difference in handling uncertainty is made stark. Under conservative accounting, risk is revealed *ex ante* by not booking anticipations of the future and the balance sheet evolves only as the risk is resolved. Under current value accounting, risk is imbedded in the balance sheet, to be revealed only *ex post*, as earnings are shocked by the failure of value booked to the balance sheet to be realized. Which accounting serves the investor—the customer—best?

It is unfortunate that “historical cost accounting” has taken on that name, making it appear stuck in the past, backward-looking (it is said). The driver is not historical cost, but an accounting for uncertainty: carry inventory (and the assets that produce inventory) at cost on the balance sheet until there is a resolution of uncertainty. At that point and only at that point, write up the balance sheet by substituting inventory (at cost) for accounts receivable (at market), with the difference going to gross margin in the income statement. That is actually forward-looking

(to an uncertain future). Again, one should not get hung-up on language, but perhaps this accounting should be called “prudent accounting for uncertainty” rather than “historical cost accounting.” Or, perhaps, “conservative accounting.”

### 3.2.2 The Application of Conservative Accounting in Practice

My Accounting Principles professor continued by showing how the principle is applied.

First, a revenue recognition principle: recognize revenue only when there is a customer against which there is a legal claim, the major economic activity is accomplished, and receipt of cash is reasonably certain. Even then, discount the receivable for the probability that cash may not be received—a prudent reaction to uncertainty. The new IFRS 15 on revenue recognition uses somewhat different formal criteria but the focus is still on resolution (satisfaction) of a contact with the receipt of cash “highly probable.”

Second, to complete the earnings (profit) calculation, match expenses to revenues. The accountant then reports a net figure of how the firm adds to shareholders’ equity from trading with customers—a value-added number which is a basis for predicting (net) cash flows from future revenues from customers.<sup>6</sup>

It is on this second point that, in retrospect, I see that professor was wrong, at least in describing how accounting is currently practiced. Matching requires that any expenditure that generates future revenues be capitalized in the balance sheet and then depreciated or amortized to be matched against those revenues as they are recognized. However, accounting does not do that. Expenditure on research for new products is expensed to the income statement, as with advertising and promotion to build brands that will (hopefully) yield future revenues. That is mismatching: expenses to produce future revenues are matched against current revenues, and future revenues are subsequently reported without the matched (amortized) expenses. The mismatching is not confined to research and advertising: currently, firms expense expenditures to build supply chains and product distribution networks, employee training and development costs, software development, start-up costs, merger costs, and more. Indeed, it is estimated that a significant portion of selling, distribution, and administrative (SG&A) expense in the income statement is actually investments. This expensing of investment falls into the category of so-called “unconditional conservatism.” The exercise of “conditional conservatism” also means mismatching: impairments due to revisions in expectations of future revenues are expensed against current revenues.

I refer to my early education because it draws out principles underlying current accounting practice. I expect it resonates with others whose accounting courses focused on accounting principles rather than the teaching of IFRS rules. As broadly characterized as conservative accounting, current practice becomes a benchmark for evaluating the critical question: Is accounting, as practiced, an appropriate accounting for uncertainty? If not, what would an appropriate accounting look like?

### 3.2.3 A Tension

At first glance, it would appear that GAAP and IFRS accounting fails. The theory of the firm characterizes business activities as making investments and producing earnings from those investments. Thus, one should not confuse investment with the return on investment. Stated

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<sup>6</sup> The accounting just described is that in the seminal accounting theory paper of Paton and Littleton (1940).

differently, separate capital from income, stocks from flows. Accounting is a stocks-and-flows system, so should obey this dictum. A practice that expenses investment against income fails to do so, creating the confusion and making the bottom-line earnings a difficult number to interpret: earnings is no longer the flow from capital investment.

To the point, the many calls to capitalize research expenditures, brand building expenses, and other “intangible” assets are driven by a desire to report a better return-on-investment measure—one that has the investments in the denominator and a numerator that is not contaminated by expensed investments.

At second glance, the expensing of investment appears to be a reaction to uncertainty. Inventory and property, plant, and equipment (PPE) are booked to the balance sheet. They pertain to products that can be sold or facilities to produce products that can be sold. However, for expenditures on research where typically there is not a yet product (let alone a customer), the expenditure is expensed. The distinction between the two treatments is a difference in the uncertainty about future revenues. Indeed, in requiring immediate expensing of Research and Development under FASB Statement No. 2, the U.S. Board focused on the “uncertainty of future benefits.” In IAS 38, the IASB applied the criterion of “probable future economic benefits” to distinguish between Research (which is expensed) and Development (which is capitalized and amortized). IAS 12 recognizes deferred tax assets only if it is probable that taxable profits will be realized in the future. While not codified, the uncertainty-of-future-benefits criterion seems to apply to advertising and promotion (will the promotion campaign be successful?) and other so-called intangible assets. There is a reluctance, in practice, to booking assets to the balance sheet if there is a relatively low probability of an outcome. Even inventory and PPE that are booked to the balance sheet are written down on (down-ward) revisions of that probability. This conservative accounting connects to uncertainty.

Like revenue recognition, the expensing of investment under uncertainty defers earnings to the future: current earnings are lower due to the expensing but future earnings are expected to be higher (now without amortization of investment cost against revenues from the investments). However, the connection to uncertainty means that these deferred earnings are at risk: they may not be realized. Just like the accounts receivable example earlier in the paper, the accounting thus imbeds the economics of uncertainty: higher risk requires a higher expected return—and higher risk means higher expected earnings.

There clearly is a tension between mixing stocks and flows and recognizing uncertainty in investing activities. This is the sharp edge to be resolved in a conceptual framework. There is much at issue. On the one hand, there are calls by many to capitalize “intangible assets” and to report a book rate-of-return that resembles an economic rate of return. On the other hand, there are those who resist putting assets with low probability of payoff on the balance sheet—“water in the balance sheet” (they say) that is likely to evaporate when outcomes are not realized, yielding an income statement dominated by impairments.

#### **4. Conservative Accounting and the Investor: Theory and Evidence**

With the focus of the CF on investors, any resolution in the CF must accord with valuation theory and be also consistent with the empirical evidence on how investors process accounting information. We thus raise the following questions:

- Is the connection of conservative accounting to risk consistent with no-arbitrage valuation theory in finance?
- Is conservative accounting consistent with accounting-based valuation that is derived from that theory?
- Does the empirical evidence indicate that investors associate conservative accounting with risk?

#### 4.1 Conservative Accounting and No-Arbitrage Valuation Theory

No-arbitrage valuation theory depicts investors as giving up future consumption (to invest) in anticipation of the return of cash to buy consumption in the future. However, that cash is in the future and at risk, so investors require a discount to the *amount* of expected cash flows for both the *timing* and *uncertainty* of future cash flows, and set (no-arbitrage) prices accordingly. The discount for the timing is given by the risk-free rate and that for uncertainty by a risk premium over the risk-free rate.

Accordingly, when buying a share of a firm at a no-arbitrage price, investors expect to earn the expected return that includes a risk premium over the risk free rate. However, when they sell the share and invest the cash proceeds in the risk-free asset—they realize the return—the risk is reduced, and so is the expected return (now equal to the risk-free rate). The risk from the investment is resolved, the investor is released from risk.

Buying a share of a firm is buying the expected earnings of a firm and the risk the investor bears is the risk of those earnings not being realized. Correspondingly, when the firm realizes those expected earnings into cash or a near-cash asset on shareholders' behalf, the investors' risk and expected return are correspondingly reduced. But, until realization, earnings are still at risk of being realized and the investor requires a higher return for that risk. Conservative accounting, by waiting until risk is resolved, reflects the investor's risk.

Put another way, an investor can release from the risk in expected earnings by selling the stock and investing in the risk-free asset. But when the firm realizes those expected earnings into cash or a near-cash asset on shareholders' behalf, the investor's risk and expected return are similarly reduced. On a consolidated basis, the firm's accounts are part of the shareholders' accounts, so it makes no difference if the shareholder "realizes" or the firm "realizes" on the shareholder's behalf—the shareholders (the 100 percent owners) have the claim to the same cash. A no-arbitrage condition so dictates (frictions aside). Cash payout has no effect on cum-dividend value under Miller and Modigliani (1961) (M&M) no-arbitrage assumptions, so cash held in the firm has the same value as cash on personal account.<sup>7</sup>

However, there is no necessary connection of conservative accounting to priced risk. No-arbitrage asset pricing theory casts risk as that which cannot be diversified away. Thus only systematic risk is priced, and a firm's risk is determined by a beta sensitivity to that risk. Conservative accounting might just involve diversifiable risk, so is of no consequences to investors.

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<sup>7</sup> If dividends are paid out of accumulated earnings, recognizing earnings only on the resolution of uncertainty would seem to constrain dividends. However, while total recognized earnings over the life of the firm determine total cash to be paid out to investors, the timing of their recognition does not constrain periodic dividends under M&M assumptions. Those assumptions involve perfect capital markets so investors can generate cash for consumption at any time by liquidating their investment or by borrowing. Thus there is no need to tie dividends to earnings.

This has yet to be worked out.<sup>8</sup> That said, the no-arbitrage argument above implicitly refers to priced risk. The realization principle can be cast in terms of asset pricing: earnings are recognized when a firm can book a zero-beta asset, cash or a near-cash (discounted) receivable. Realization is upon release from beta risk.

#### 4.2 Conservative Accounting in Accounting-based Valuation

Research has developed valuation based on accrual accounting numbers rather than expected cash flows. Starting with the no-arbitrage dividend discount formula for equity valuation and substituting earnings and book values for dividends,  $d_t$ , via the clean-surplus accounting relation, a no-arbitrage price is given by

$$P_0 = \sum_{t=1}^{\infty} \frac{d_t}{R_t} = \text{Book Value}_0 + \sum_{t=1}^{\infty} \frac{\text{Earnings}_t - r_t \text{Book Value}_{t-1}}{R_t}$$

where  $r_t$  is the discount rate for risk in period and  $R_t$  is (one plus the) discount rate in the term structure from 0 to  $t$ . (Values subscripted  $t > 0$  are expected values.) The numerator,  $\text{Earnings}_t - r_t \text{Book Value}_{t-1}$  is so-called residual income, and the model is referred to as the residual income model.

While this model brings in accounting numbers, it is based only on a substitution via the clean-surplus relation, and mere substitution puts little on the table: the utility of the valuation depends on how earnings and book values are recognized and measured. To the point, the formula permits any type of (clean-surplus) accounting up to the last period when the firm liquidates, even random numbers for earnings and dividends. That is because it only enforces a reconciliation of earnings and book values to dividends in the last period: earnings must be measured such that the liquidating dividend equals book value (and thus the book value goes to zero on the payout of the dividend). With the valuation based on an infinite summation (with no liquidation for a going concern), this is problematic.

This point is typically not recognized when the model is applied in practical valuation: the valuation is only as good as the accounting involved and the model does not specify that accounting. The research task is to specify the appropriate accounting, and the standard-setting task is to promulgate the appropriate accounting for valuation.<sup>9</sup> When applied in practical valuation, analysts use IFRS or GAAP accounting. Is that appropriate? Or, to the point of this paper, is conservative accounting appropriate?

There are two features of the model that would suggest so.

First, current book value in the formula is not discounted for risk in the formula. Conservative accounting yields such a book value. Assets that are particularly risky are not booked to the balance sheet and assets that are booked are impaired if there are indications that carrying value will not be realized. Further, earnings are added to the balance sheet only on the resolution of uncertainty. That is a low-risk balance sheet, one that is unlikely to hold negative surprises for the investor in the future; value in the balance sheet is not likely to reverse. That is a balance sheet that does not have to be discounted.

<sup>8</sup> Penman and Zhang (2016b) explore a model where conservative accounting connects to priced risk

<sup>9</sup> This point is expanded upon in Penman (2015, 2016).

Second, the formula separates the low-risk book value from earnings that are still at risk and thus have to be discounted. Further, the timing of the expected earnings over future periods is based on their expected realization and that expectation (for period  $t$ ) is matched with a time-varying discount rate,  $R_t$ , that varies with the risk that the expected earnings will not be realized. Thus, not only is a discount rate implied by the uncertainty of earnings realization, but also a term structure that reflects the expected timing of and uncertainty about the realizations. Thus, for a firm where expected earnings are expected to be realized in the short term from carried inventory, the discount rate might be relatively low, while earnings expected in the long-term for a start-up biotech research program might be strongly discounted for risk.

These observations provoke a tantalizing conjecture: Conservative accounting can provide information about the discount rate that an investor applies to expectations. Much needs to be done to pin down that conjecture, including connecting conservative accounting to (undiversifiable) priced risk. While the modeling is not as yet forthcoming, the empirical evidence does indicate that conservative accounting connects to priced risk.

### 4.3 Conservative Accounting and Empirical Evidence

As observed, conservative accounting (by expensing some investments) confuses stocks with flows, capital and income. Thus a return on investment measure based on book values does not indicate the economic rate of return.

However, the book rate of return takes on a different interpretation under conservative accounting, that of conveying risk and expected return. This section provides evidence, and that evidence indicates that conservative accounting connects to priced risk in the market.

Conservative accounting is applied to the operating activities of a firm (not the financing activities) and so affects the book rate of return for the operating activities, the Return on Net Operating Assets (RNOA) (the operating income from the business relative to the net operating assets on the balance sheet).<sup>10</sup> The effect of conservative accounting on RNOA is deterministic and well known.<sup>11</sup> Given (operating) earnings in the numerator, the omission of investments in the denominator yields an RNOA higher than the economic rate of return on average. However, with growing investments subject to expensing under conservative accounting, earnings (in the numerator) is reduced to yield a lower RNOA,

Tables 1 – 3 are adapted from Penman and Zhang (2016). Table 1 reports the association of RNOA (calculated under U.S. GAAP) with forward stock returns. Each year, 1963–2013, listed U.S. firms (other than financials where the accounting works differently) are ranked on their RNOA and formed into 10 (decile) portfolios. The stock returns over the subsequent year are then calculated and the mean of these returns from each year for each portfolio is reported in the table. These means are an estimate of the expected returns associated with different levels of RNOA and thus, if risk is priced efficiently in the market (on average), they are an estimate of the reward for bearing risk. It is clear from Table 1 that RNOA bears no relation to these returns: RNOA does not indicate risk and the expected return.

Table 2 is constructed in the same way as Table 1, but now from a measure,  $\Delta C$ , which captures how conservative accounting affects the numerator of RNOA, with a higher  $\Delta C$

<sup>10</sup> RNOA is sometimes referred to as Return on Invested Capital (ROIC). RNOA is the unlevered return, in contrast to the levered return on equity (ROE) which includes the effect of financing leverage.

<sup>11</sup> See Feltham and Ohlson (1995) and Zhang (2000), for example.

indicating earnings reduced more by the conservative accounting—by the deferral of earnings to the future via revenue deferrals and the expensing of investments. It is clear that this measure ranks returns over the  $\Delta C$  portfolios: more conservative accounting indicates higher risk and thus higher returns as a reward for that risk. So, while there is little theoretical modeling connecting conservative accounting to priced risk, that appears to be so empirically.

Table 3 has the same RNOA portfolios as in Table 1, but now with RNOA ranked within each RNOA portfolio into three portfolios based on the degree of the application of conservative accounting,  $\Delta C$ . It is clear that, while RNOA does not indicate expected returns (in Table 1), distinguishing the extent to which RNOA is affected by conservative accounting does: if the numerator earnings are depressed by conservative accounting (high  $\Delta C$ ), that indicates risk and a higher expected return. And that is so for all levels of RNOA, though the effect is particularly strong for low RNOA where the effect of conservative accounting on RNOA is the strongest.

In sum, these findings report that conservative accounting appears to capture priced risk. Further, they bring a different interpretation to the book rate of return. Rather than a measure of the economic rate of return, RNOA affected by conservative accounting conveys risk and expected return. The investor is warned: a low RNOA due to conservative accounting indicates a risky investment. (Think of a start-up expensing research and development with the product outcome uncertain). The investor is also warned not to interpret the book rate of return as “real” (economic) profitability. The mixing of capital and income takes this away to convey information about risk instead.

It follows that, were accountants to remove conservative accounting, information about risk would be lost. That might be a worthwhile tradeoff if the result were an economic measure of profitability. However, is that a realistic alternative for the accountant? It would require identifying the elements of transactions with customers and suppliers that are investments from those which are periodic revenues and expenses. How much of a price reduction for a customer is an investment to attract the customer in the future? How much of a salesperson’s salary is for developing long-term relationships for future revenues? How much of current wages and bonuses are for services currently provided versus incentives to remain loyal in the future? Will research expenditure really yield expected benefits? Even if an expenditure is identified as an investment to go on the balance sheet, the accountant is left with the thorny issue of an appropriate amortization rate which affects both the numerator of RNOA and the carrying value of the investment in the balance sheet going forward. Is an economic rate of return that crisply identifies capital and income within the realm of accounting determination? These are very difficult accounting issues (perhaps beyond resolution). An appropriate response might then be: when uncertain about these points, be conservative and expense immediately.

## **5. Conservative Accounting and the Conceptual Framework**

The current draft of the IASB Conceptual Framework actually attempts to confront these questions. It does so via a so-called “balance-sheet approach” to recognition and measurement. Assets and liabilities are recognized in the balance sheet if they satisfy specified definitions. Earnings then fall out as the change in net assets, a byproduct of balance sheet measurement. The definition of an asset requires future expected economic benefits and that is a necessary condition for an investment. Does this principle rule out conservative accounting?

TABLE 1. MEAN ANNUAL RETURNS FOR PORTFOLIOS FORMED BY RANKING ON RNOA, IN PERCENT

	<i>RNOA Decile Portfolios</i>										
	<i>LOW</i>	2	3	4	5	6	7	8	9	<i>HIGH</i>	<i>HIGH-LOW</i>
RNOA	-53.9	-9.7	1.1	5.5	8.2	10.5	13.2	16.7	22.6	38.8	92.7
Return	17.4	18.3	19.1	20.0	18.3	18.4	17.3	17.9	15.2	16.4	-1.0

TABLE 2. MEAN ANNUAL RETURNS FOR PORTFOLIOS FORMED BY RANKING ON  $\Delta C$ -SCORE, IN PERCENT

The flags, \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% levels, respectively.

	$\Delta C$ Decile Portfolios										
	<i>LOW</i>	2	3	4	5	6	7	8	9	<i>HIGH</i>	<i>HIGH-LOW</i>
Return	14.2	15.9	15.4	17.0	15.3	17.0	18.0	18.5	20.5	22.3	8.1***

TABLE 3: MEAN ANNUAL RETURNS FOR PORTFOLIOS FORMED BY RANKING ON  $\Delta C$ -SCORE WITHIN EACH RNOA DECILE, IN PERCENT

The flags, \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% levels, respectively.

	<i>RNOA Decile Portfolios</i>										
	<i>LOW</i>	2	3	4	5	6	7	8	9	<i>HIGH</i>	
$\Delta C$ Portfolios	LOW	11.1	14.1	17.2	19.5	15.6	17.2	16.8	16.7	12.1	14.6
	MEDIUM	8.9	17.0	18.4	17.8	17.6	17.6	16.2	17.6	15.8	15.1
	HIGH	22.6	22.8	21.4	23.1	21.5	20.3	19.2	19.0	18.4	17.6
	HIGH-LOW	11.5***	8.7***	4.2***	3.6**	5.9***	3.1**	2.4*	2.3	6.3***	2.9**

Source: Adapted from Penman and Zhang (2016).

### *5.1 Conservatism is Actually in the Conceptual Framework*

While removing conservatism from the CF as a qualitative characteristic, it turns out that it becomes an operating principle when the Framework comes to recognition. While the expectation of future benefits is a necessary condition to recognize an asset in the CF, it is not sufficient. Barker (2015) points out that the definition of an asset in the CF also imposes other conditions: the economic resource must be “controlled by the entity as a result of past events” (paragraph 4.5). Thus, anticipated cash flow from future customers cannot be recognized—they are not controlled by the entity as a result of a past event. That is a revenue recognition rule, albeit via a criterion for recognizing the associated asset (typically the receivable) in the balance sheet. Conservative revenue recognition is in the Framework.

As an application, IFRS 15, the new revenue recognition standard takes this balance-sheet approach by focusing on the satisfaction of contractual rights and obligations. But it is clear that requires the accountant to wait to recognize revenue until this uncertainty is resolved and, in the words of the standard, receipt of cash is “highly probable.” As to measurement, both the CF and IFRS 15 rule out the anticipation of cash flows from future customers in a current value calculation. So, they require historical cost or, in our rewording of “historical cost accounting,” accounting that is a “prudent reaction to uncertainty.” Revenue recognition under the CF effectively takes a (big) discount for uncertainty: while the market price of a stock may anticipate future customers, the principle discounts that price for the risk that the customers may not materialize. That yields a book value less than market price, with the addition to book value only booked when and *if* the customers materialize. The *if* implies uncertainty.

While the IASB CF implicitly requires revenue recognition based on resolution of uncertainty, the draft Conceptual Framework of the Accounting Standards Board of Japan (read in English) is much more explicit. It proposes a “release from risk” concept for recognizing earnings and a separation of such earnings from those that (under fair value accounting) do not satisfy this criterion.<sup>12</sup>

### *5.2 The Application of Conservatism in the Conceptual Framework is Incomplete*

Deferred revenue recognition is only one arm of conservative accounting. The other is the accounting for expenditures, that is, the designation of expenditures as an asset or an expense. As said, this is crucial to distinguishing capital from income and, at first appearance, the CF appears to state necessary conditions: an economic benefit over which the entity has control and which is the result of past events. Expenditures are past events and typically yield control, so it would seem to come down to the issue of whether there are expected economic benefits. Does this supply the necessary and sufficient conditions? Are the conditions sufficient to separate capital from income to yield an economic rate of return?

To sharpen the question: Does the CF require booking an asset with expected future benefits but very low probability of success? Would that not result in very doubtful assets being booked to the balance sheet, assets where the best prediction for the future would be an impairment because the investment does not pay off? Would not investors see this as “water in the balance sheet?” Is this an asset that represents security for creditors to lend against? Would not the income statement be swamped with impairments of low-probability investments that did not work out?

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<sup>12</sup> On this, see van Mourik and Katsuo (2015) and Saito and Fukui (2016).

What would be the meaning of “earnings?”

While the CF definition of an asset has the necessary condition of expected future benefits, it does not deal with the uncertainty around that expectation. It is inconceivable that a qualitative characteristic can provide the solution—most expenditures are “relevant,” “verifiable,” “understandable,” etc. Further criteria have to be supplied to distinguish risky investments that go onto the balance sheet and those that don’t.

The impasse can be broken in one of two ways. Either design an accounting that clearly separates capital from income or develop principles that establish a threshold for when net assets go on the balance sheet. The former is quite problematical; indeed, the separation of capital from income may be a principle that does not work under uncertainty. The second is more realistic, indeed Barker and Penman (2016) propose a solution based on a refined matching concept under uncertainty, and others may be available. The separation of “research” from “development” in IAS 38 tackles the issue, though one might look for a more concrete criterion than “probable” to establish the uncertainty threshold.

## 6. Conclusion

The removal of “conservatism” as a qualitative characteristic from the Conceptual Framework has met with considerable resistance. This paper argues that conservatism has a role in accounting, but not as a qualitative characteristic. Rather, it serves as a defining principle for how accounting is to be done. As a prudent reaction to uncertainty, conservatism supplies the investor with information about the payoffs to investments, particularly the uncertainty involved in those investments.

Indeed, while seemingly demoted as a qualitative characteristic, conservatism is actually in the current draft of the Conceptual Framework in its implied revenue recognition criteria. However, the CF framework is incomplete: it does not deal with question of booking or expensing expenditures on uncertain investments.

One might dismiss these points by claiming that accounting is not about dealing with uncertainty. That is a tough position to support given that (1) investing is all about handling uncertainty, (2) the CF objectives explicitly cast accounting as providing information about “the amount, timing, and *uncertainty*” of future cash flows, and (3) there is no role for accounting under certainty: it is uncertainty that is the rationale for accrual accounting.

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