

WORKING PAPER

**An Accounting Primer:
For Economists' Eyes Only!**

By

Judy Laux

**Colorado College Working Paper 2005-03
December, 2005**



**Department of Economics and Business
Colorado College
Colorado Springs, Colorado 80903-3298
www.coloradocollege.edu/dept/EC**

An Accounting Primer: For Economists' Eyes Only!

Abstract

The following paper outlines some potential reasons for the chasm between accountants and economists, proposes the addition of an accounting-based mini-lecture to the introductory economics course, and offers a description of several key accounting concepts considered essential to the economics curriculum.

Introduction

Do economists ever wonder why there's no accounting for economists? Apart from the fact that many they might feel quite happy to have escaped the apparent drudgery associated with learning accounting, have they ever wondered if something might be missing? By and large, don't economists' friends treat accounting with disdain? Having never studied accounting, some economists see it as a poor cousin of a more intellectual discipline. Down deep, perhaps they believe the stereotypical bean counter, more comfortable with numbers than concepts, plays no meaningful role in the discourse about resource allocation.

Consider the proposition that this chasm between economists and accountants makes both disciplines weaker than they might be should the two combine forces in a synergistic way. Poor economic decision making often springs from lack of knowledge about accounting information, while poor accounting standards can result when sound economic constructs are misinterpreted or dismissed. It is imperative to endow future economists, managers, and policy makers with knowledge about the accounting treatment of key economic principles and concepts—those deemed absolutely necessary for a more solid understanding of economic decision-making in a business environment. To that end, the following paper addresses three specific questions:

- Why do many economists fail to recognize the synergistic nature of accounting information and economic constructs?
- What are some of the essential economic ideas that could be reinforced and better understood in an accounting context?
- How are some of these essential concepts handled in accounting, and how might this treatment further our collective understanding of the resulting economic decisions?

The recommendation is to inject this “mini-lecture” into introductory-level courses as both a pedagogical improvement and as a possible springboard for further voluntary study in both accounting and economics.

Why the Disdain?

One of the most damning indictments of accounting is that it is nothing more than mechanics—one need merely master the rules of debit and credit to become a CPA! While this might be an overstatement, it reflects the fact that many view the discipline as vocational rather than intellectual and hang their argument on the apparent simplicity of the double entry system and the resultant rules and prescribed formats. Most economics majors are not required to take a course in accounting [Siegfried and Wilkinson, 1982]; thus many PhDs have little or no accounting background and can hardly be expected to see the reinforcing (and sometimes, dichotomous) nature of accounting and economics. Most accounting programs, on the other hand, require some knowledge of microeconomics; statistics would no doubt bear out the fact that most accountants also have a working knowledge of macroeconomics as well. Thus, accounting instructors are in tune with the idea that the accounting model simply represents the framework within which we study the recording of *economic* activities and resource allocation decisions; they are aware of the indispensable nature of economic concepts in teaching and learning accounting theory, accounting rules, and the shortcomings of accounting output. [For a good argument, see Arya et al, 2003, p. 30.] Even economists [See Bartlett and King, 1990, pp.

181-182.] admit, from their experiences in teaching theory-only courses lacking applications, students fail to understand the material—fail to "think like economists." Active learning experiences (e.g., the applied microeconomics problems inherent to the study of accounting) teach concepts as a by-product of the problem-solving task [Dudley, Davis, and McGrady, 2001, p. 126]. Sunder [2002] makes a good argument that "knowing what others know..." (i.e., sharing common knowledge with other disciplines) enhances understanding and spurs new contributions to all fields.¹ To convince economists of the importance of accounting in better understanding economic decision making, one should list some of the economic ideas that could be presented from both a theoretical economic viewpoint as well as from an accounting treatment angle. The following section offers a few of those essential economic ideas.

Some Essential Economic Concepts

One cannot present an exhaustive list of economic concepts critical to the discipline in such a short treatise. However, some general economic ideas to address at the introductory level (in both accounting and economics) might include the following. First, the categories of accounting elements—assets, liabilities, owners' equity, revenues, and expenses—tangibly illustrate two essential economic constructs, stocks and flows. Secondly, to become good economists, managers, and policy makers, students should be taught that accounting rules mandate use of different valuation methods (current value, historical cost, net realizable value, lower of cost or market value, present value, book value, etc.) for the various accounting elements. This, in turn, leads accountants to define income (the result of revenue and expense flows) differently than economists—an extremely important dichotomy. Furthermore, economics students should be aware of the most misunderstood items in accounting (such as

¹ For a dissenting view that speaks to the limitations placed on the development of accounting scholarship by Positive Economic Science, see Williams, 2003.

accumulated depreciation and retained earnings). In addition, the accounting mantra “economic substance over legal form” directly connects economic consequences to accounting representations.

And the list continues. Students can always use an extra shot at understanding present value analysis, an economic model with excellent accounting examples (bond valuation, capital budgeting, capital leases, etc.). Many economic models rely on an understanding (and typically an estimate) of cash flows, including capital budgeting, financial asset valuation, and labor contracting. A solid foundation might begin with a better understanding of accounting’s statement of cash flows. Finally, a working knowledge of leverage, risk, and return can be enhanced with a brief look at the accounting aspects of these critical economic concepts. The following section looks briefly at the accounting treatment of some of these items and discusses how economic understanding might be enhanced by this knowledge.

Economic Constructs in an Accounting Context

Students of economics receive a brief induction into the world of stocks and flows. This way of looking at the factors of production might take on added clarity if presented in a balance sheet/income statement model, wherein a company’s assets (cash, receivables, inventory, plant & equipment) constitute stocks on hand at one point in time that managers (economic decision makers) use to generate income flows over a period of time. Accounting addresses stocks and flows a second time in constructing the statement of cash flows, as this model requires a look at economic “stocks” (the balance sheet items) and flows (information from the income statement) and requires students to wrestle with the interrelationships and the impact on cash flows.² This is not only a useful mental exercise, but it prepares readers of that statement to acknowledge the

²More details on this process and on the items that follow appear in an appendix to this paper.

importance of cash flows to managers' operating, investing, and financing decisions—all, most assuredly, *economic* in nature.

In valuing balance sheet items (stocks), accounting rules mandate different valuation approaches. For example, accounts receivable are valued at net realizable value (the estimated amount to be collected from customers); trading securities are carried at market value (the amount that would have been received had the securities been sold on the balance sheet date); inventory is presented at lower of original cost (as determined by a pre-selected cost flow assumption, such as FIFO or LIFO) or market value (replacement cost), with net realizable value also playing a role if the market value has fallen since purchase. Plant and equipment are valued at book value (historical cost less accumulated depreciation, that part of original cost allocated to expense over previous periods), while land is displayed at original cost and intangibles at amortized cost. While this can be somewhat confusing, the variety of valuation approaches illustrates the importance to accountants of such accounting characteristics as verifiability, objectivity, reliability, and relevance. Furthermore, the income statement revenues and expenses (flows) emphasize the matching, realization, and revenue recognition principles, and this emphasis, in turn, leads to differing accounting and economic incomes.

Accountants and economists alike recognize the divergence of income measures. Since the concept of income is so essential to resource allocation decisions, we would be remiss in our duty if we glossed over the fact that accountants and economists do not define income the same way. While accountants recognize the theoretical value of the definition commonly espoused by economists (whereby income is the amount a company could distribute to owners during the period and still expect to be as well off at the end of the period as at the beginning), it is expectations based, requires a present value approach, and is difficult to make operational. Furthermore, accountants favor objectivity and verifiability over estimation (perhaps too much

so) and contend that this definition would allow too much room for subjectivity. That is not to say that the income produced by current accounting rules lacks subjectivity. Many would contend that there is no less subjectivity in arriving at accounting income and that the subjectivity involved comes from such divergent places as to make it less defensible than economic income. At any rate, students should know something of the sources of the differences between accounting and economic income and wrestle with some of the implications for resource allocation. This would require a discussion of allocation methods (depreciation and amortization), matching revenues and expenses, and revenue recognition rules (and their subjective nature), at a minimum. In addition, economists require a return to owners for risk-taking before arriving at income, while accountants do not deduct dividends or other owner-related returns, disclosing them separately. Finally, economic income is events oriented, while accounting income is transactions based. Thus items such as employee strikes or environmental costs make their way into (theoretical) economic income but do not appear in accounting income unless the probability of some future event warrants such treatment and estimation is possible.

A desirable outcome of the struggle to understand the connection between accounting stocks and income is that it allows a brief introduction to some of the more difficult accounting elements, specifically accumulated depreciation (a “negative stock” that represents allocation of historical cost to expense as part of matching—and makes no attempt to reflect market value nor cash on hand for equipment replacement) and retained earnings (the historical sum of profits, losses, and dividends—rather than a stash of cash). Secondly, one of the most important (and, admittedly, abused) directives in accounting—“economic substance over legal form”—requires students to internalize what it means for an event to have an “economic” impact; it is against accounting policy to allow legal form to override (or disguise) that impact. Thus, when we say Enron formulated legal agreements with other companies that inappropriately removed the

economic impact of assets and debt from its balance sheet and showed fictitious gains on its income statement, students become aware of the end pursued in accounting—to show income only when a firm is, in fact, better off.

The time value of money concept first presented in the bond chapter in accounting represents one of the most important and fundamentally challenging concepts in economics. To see the model in action in bond pricing affords students the opportunity to tackle it one more time. Similarly, the leverage concept (as well as the positive relationship between risk and return) can be highlighted in a “bonds versus stock” financing venue (financial leverage) or in an “automation versus labor” example (operating leverage). The advantage of presenting the concepts from an accounting perspective is that students see real numbers representing real risk and real return.

The appendix offers a brief introduction to each of the above items, outlining the accounting treatment and speaking to some of the essential conceptual connections to economics. Instructors in both accounting and economics are invited to select those items deemed critical at various junctures in their introductory courses and discuss with students those places where the two complement as well as diverge.

Summary and Recommendation

Studies abound that espouse the value of inquiry-based, hands-on modeling in helping students understand the conceptual underpinnings of economic theory, and the study of economics can benefit from added exposure to the rich database available in the form of the financial statements produced in accounting. The economic lessons from accounting are varied and informative. Knowing how various concepts are handled in accounting (for better or worse) can help economics students better understand the resulting economic decisions (to automate, to replace a machine, to issue stock, to invest in marketable securities, and so forth). It would

enlighten students about how accounting dilemmas and accounting scandals come into being. The study of accounting, too, can benefit from accenting concepts at the core of economics. For example, Beaver [1998] highlights two such key ideas, efficiency and equity, and Frecka, Morris, and Ramanan [2004] offer insightful applications in accounting. As a first step, it would not be difficult to inject a kind of “mini-lecture” into the introductory economics course and, similarly, to make clearer connections in the introductory accounting course to key economic concepts. This would improve the pedagogy in both courses. It might also stimulate the interest of accounting students in economics and spark future economists to learn more about accounting, producing better thinkers for future generations.

References

- Arya, A., John C. Fellingham, and Douglas A. Schroeder. "An Academic Curriculum Proposal," *Issues in Accounting Education*, Vol. 18, No. 1 (February 2003), 29-35.
- Bartlett, R.L. and Paul G. King. "Teaching Economics as a Laboratory Science," *Journal of Economic Education* (Spring 1990), 181-193.
- Beaver, W.H. *Financial Reporting: An Accounting Revolution*. Upper Saddle River, NJ: Prentice Hall, 1998.
- Dudley, L.W., Henry H. Davis, and David G. McGrady. "Using an Investment Project to Develop Professional Competencies in Introduction to Financial Accounting," *Journal of Education for Business* (January/February, 2001), 125-131.
- Frecka, T.J., Michael H. Morris, and Ramachandran Ramanan. "Back to the Future: Implementing a Broad Economic, Inquiry-Based Approach to Accounting Education," *Journal of Education for Business* (November/December, 2004), 69-74.
- Siegfried, J.J. and J.T. Wilkinson. "The Economics Curriculum in the United States: 1980," *American Economic Review* (May), 125-38.
- Sunder, S. "Knowing What Others Know: Common Knowledge, Accounting, and Capital Markets," *Accounting Horizons*, Vol. 16, No. 4 (December 2002), 305-318.
- Williams, P. "Modern Accounting Scholarship: The Imperative of Positive Economic Science," *Accounting Forum*, Vol. 27, No. 3 (September 2003), 251-269.

Appendix: Accounting Applications in More Detail

- **The Statement of Cash Flows—Stocks and Flows in Action!**

The SCF uses a comparative balance sheet (beginning and end-of-period stocks) and the flows from the current period's income statement to generate cash flows from operating, investing, and financing activities. For example, one operating activity involves selling to customers. The income statement presents "Sales" on an accrual basis, recognizing the revenue when earned rather than when collected in cash (an approach supported by most economists). The SCF converts the sales figure to "cash collected from customers" by measuring what has happened to the level of Accounts Receivable (a stock on the balance sheet) from the beginning to the end of the period. If Accounts Receivable has risen, fewer dollars have actually been collected than suggested by the sales figure. If "Sales" is \$1,000,000 and receivables have risen from \$80,000 to \$100,000, cash collected from customers would only be \$980,000. This type of analysis is made for each balance sheet and income statement item, and the process helps students see the difference between accounting income and cash flows. In addition, the SCF highlights how economic events related to investing and financing can use or generate cash flow, a central concept in many economic models.

- **Balance Sheet Valuation—Apples and Oranges?**

The balance sheet below lists the major accounting elements and describes the general valuation method prescribed by generally accepted accounting principles, along with a brief comment about the valuation approach. Students should understand how limited the role of *market value* is in the construction of a balance sheet and the economic inferences that can (and cannot) be made.

ASSETS

Cash

Current value. This is perhaps the only element that has high degrees of relevance, reliability, verifiability, and objectivity.

Marketable Securities

Fair (market) value. For securities classified as "trading" (likely to be sold in the near future), gains and losses are shown on income statement before actually realized by selling the securities; for securities classified as "available for sale" (may or may not be sold in the near future), unrealized gains and losses are shown in the stockholders' equity section of the balance sheet (when realized, these are shown on the income statement). Relevant and reliable, but classification is subject to manipulation, making unrealized gain and loss treatment questionable.

Accounts Receivable

Net realizable value (the amount expected to be collected). Gross amount reduced by allowance for bad debts (dollars deemed uncollectible). Relies on an estimate, and therefore reliability is somewhat lessened, a tradeoff considered acceptable for the added relevance.

Inventory

Lower of cost or market. Cost is original cost to the firm as determined by a stated cost flow assumption (first-in, first-out and last-in, first-out being the most common). If utility has fallen, markdown and loss recognition occur in the period of impairment. During inflationary times, LIFO reports an outdated (low) figure that does not reflect current values (and is therefore less relevant); FIFO reports a fairly contemporary figure relative to LIFO, but reports a cost of goods sold figure on the income statement that is artificially low (compared to the cost of replacing the goods sold).

Land

Original cost. High on reliability, low on relevance. The accounting defense is known as the "continuity assumption"—the asset is for use in the business and not for sale, so reporting market value is inappropriate. Economic income would consider any increase in value, because the firm is "better off" in an economic sense.

Plant and Equipment

Cost less accumulated depreciation. The resulting "book value" is the result of an allocation (matching) process, not a valuation process. Accounting attempts to match the cost of long-lived assets with the revenues generated in each period of the asset's useful life. No revaluation to market value is made (see the continuity assumption above). Economists would recognize depreciation expense based on current replacement values as well as recognize increases in asset value.

Intangibles

Cost less amortization. Similar to plant and equipment, accounting matches the original cost with the periods benefited. Only purchased intangibles (patents, trademarks, goodwill, etc.) are recorded. Costs incurred to develop intangibles internally must be expensed as incurred. Reliability, objectivity, and verifiability (as well as consistency, comparability, and conservatism in the case of expensing research and development costs) are held higher in importance than relevance. Items such as customer loyalty, quality of management, trade secrets, and intellectual capital—though they convey economic advantages—do not appear on the balance sheet as assets.

LIABILITIES

Accounts Payable

Gross amount. The amount promised to the creditor in an arms-length transaction. Both relevant and reliable.

Notes Payable

Face value, if short-term. Present (discounted) value, if long-term. Both relevant and reliable.

Bonds Payable

Face value less unamortized discount (or plus unamortized premium). This valuation reflects the fact that original issuance price might have been above or below face value but that face value will be due at maturity. Amortization of discounts and premiums is intended to match the real interest cost with the periods benefited. The value is reliable, but if bond prices have fallen since

issuance, the value is less relevant than the current price of debt in the marketplace (if widely traded), because the company could effectively eliminate the liability by buying the bonds.

Leases

Present value of future payments, if classified as a capital lease. Both reliable and relevant. However, many companies go to great lengths to have leases classified as operating leases. Such leases (and the assets controlled) do not appear on the balance sheet. This arrangement is known as "off balance sheet financing" and places economic substance over legal form in great peril.

Loss Contingencies

Estimated present value, but booked only if the contingency is both probable and estimable. Most loss contingencies appear only in the footnotes to the financial reports. Reliability trumps relevance.

STOCKHOLDERS' EQUITY

Contributed Capital (includes common and preferred stock plus paid in excess accounts)

Market value on date of original issuance. Has no relationship to current market value of the stock. Very reliable, almost totally irrelevant.

Retained Earnings

Historical income less historical losses and dividends, it is a bookkeeping balance that has no relationship to current profitability or cash on hand. Reliable but not relevant.

Treasury Stock

At cost to reacquire the shares. A negative stockholders' equity account valued at the cost of the shares, which could be above or below current market value. Reliable and somewhat relevant, if one tracks re-issuance above or below cost to assess management's expertise.

- **Income Statement—Revenue Recognition and Matching Dictate Accounting Income**

Revenues

Revenues are recognized when the earnings process is complete and collection is reasonably assured. Revenue acceleration and misjudgments regarding collectibility commonly cast a cloud over economic reality. A continuum of revenue recognition runs from "during production" to "upon receipt of cash."

Expenses

Expenses are recognized by (1) associating cause and effect (cost of goods sold), (2) systematic and rational allocation (depreciation), and immediate recognition (period costs, such as managerial salaries). Judgments about useful lives, salvage values, percentage of completion, etc. abound.

Income

Income is transactions based and excludes items that cannot be measured reliably.

Comprehensive income (a supplemental statement) includes revenues, gains, expenses, and losses plus gains and losses that bypass the income statement but affect stockholders' equity (such as unrealized gains and losses on securities).

- **Economic Substance over Legal Form—A Continual Challenge**

Within the constraints of GAAP, financial statements should reflect the economic impact of a firm's operating, investing, and financing transactions. Economic information that would affect the decisions of investors and creditors should be disclosed in a transparent fashion. For example, consolidated statements should eliminate debts between parent and subsidiary, because the economic reality is that both entities, though legally separate, are in fact a single economic unit. To display inter-company sales, receivables, etc. would inappropriately magnify economic activity. Similarly, leases that effectively convey to the lessee the rights and risks of asset ownership should be reported as capital leases, with the asset and liability reflected on the balance sheet. "Off balance sheet financing" represents a game in which reporting companies attempt to disguise economic substance by creating legal instruments that circumvent capitalization. Students can readily see the economic substance and the impact on such financial measures as the debt ratio (and, consequently, the potential impact on creditors' lending decisions).

- **Time Value of Money—And the Cloud Lifts!**

Bond pricing provides a perfect setting in which to teach present value concepts and mechanics: Two future cash flow promises, dictated by the bond itself, one an annuity and the other a one-time "lump" sum are valued in the eyes of the investor—the student. It has all the critical elements of the discounting model and forces the student to wrestle with the idea of "market rates" and their implication for valuing financial instruments.

- **Leverage—Risk and Return By the Numbers!**

Leverage should be driven home in a tangible, numbers-oriented manner. Present students with an expansion that generates operating income of $x\%$ (or dollars). First finance it by issuing stock, then bonds. Demonstrate the change in earnings per share and ask them to consider to whom the excess accrues (the stockholders...). That's the beauty of leverage. But then make the expansion less profitable and ask who suffers. Sometimes numbers speak louder than words. This also permits discussion of the positive relationship between risk and expected return.