What Do Practitioners Want?

Thomas E. Copeland

Corporate Finance in the classroom is very different from the knowledge and skills that today's CFOs say they need. This article discusses classroom deficiencies in investment decisions, performance measurement, risk management, and capital structure. Performance measurement is very important for most CFOs. I provide evidence that earnings, the growth in eps, economic value added, and its growth are all uncorrelated with the total return to shareholders. I then show that the difference between expected and actual performance, called Expectations-based Management™, is significantly related to TRS. Furthermore, changes in long-term expectations are more important than are changes in short-term expectations. [JEL: G31,G32,G13*]*

■ What better forum than the *Journal of Applied Finance* can there be for an article that discusses applied finance from the point of view of the CFO? I have spent 14 years of my career in academia and 15 years as a consultant. I have served over 200 companies in 35 different countries. For this article, I conducted open-ended interviews with CFOs and summarized discussions with others. The somewhat shocking conclusion is that most of what we teach in the classroom is of little practical use, or is focused on minor, even trivial issues from the CFO's perspective. The simple fact is that the role and responsibilities of CFOs in the United States as well as around the world have increased enormously in scope and complexity over the last thirty years. It used to be that the CFO was a financial record keeper, but today she is one of the top decision makers in the firm—often ascending to the role of CEO.

Truth is that few CFOs read academic finance journals, especially those that are highly ranked by academia itself. If asked what their job is and what types of decisions they confront, they reply with a much broader perspective than that taken by editors of finance journals and authors of corporate finance textbooks. Today's CFO is often responsible for, or is heavily involved in, decisions about performance measurement and incentive design, about planning, about tax policy, about reporting financial performance to the public and auditing it (controllership), about communications with analysts (investor relations), about sources and uses of funds (treasury), about investments (capital expenditures, working capital, and merger and acquisition), about legal matters (regulatory, benefits, insurance, and human rights), about risk management, and about the firm's strategy. When asked where they learned the skills necessary to handle these responsibilities, they usually say "on the job", not in MBA or executive education programs, and not in academic journals.

To be more explicit and to offer suggestions for improvement, this article addresses some of the perceived gaps in financial education. It suggests what subjects of interest to CFOs are missing (or underemphasized) in academia, and it is critical of the way we handle many of the existing topics. It starts with the assets side of the balance sheet—the investment decision (NPV versus real options, and capital efficiency), then moves to performance measurement and incentive design where a new perspective (expectations based management) is presented. It briefly discusses other underemphasized topics (e.g., tax policy, deal structuring, and organizational design), then finalizes with a view of liabilities side management (capital structure and risk management).

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advantage, and most companies would choose the big plant. But suppose we take a longer-term point of view. Suppose that $1 billion is expected to be spent over the next five years and that it could be spent on one large plant, with the lowest cost per unit in the industry, or it could be spent on five small plants, each with higher cost per unit. If the analysis compares the large plant with a committed expenditure on five small plants, the answer will be obvious: go with the large plant. But if the analysis looks at the addition of capacity to meet uncertain demand (a real options approach), the construction of smaller plants has greater flexibility. They can be added (or shut down) in increments to better fit evolving demand; they can be dispersed geographically to reduce distribution costs, and, if one of them breaks down, less capacity is lost. When valued, these flexibilities can easily sway the final analysis toward the higher cost per unit, smaller, but more flexible plants (Copeland, 2002). NPV analysis that compares the two types of plants in isolation, may easily fail to maximize the value of the firm.

Second, NPV requires that decisions made in the future be handled as mutually exclusive alternatives, but real options analysis (ROA) does not. Take deferral as an example. Using NPV, one can defer for one year, or for two years, but not both. Therefore, the right to defer N years must be analyzed as N mutually exclusive decisions with the optimal decision chosen as the maximum among them. ROA deals with the problem as a decision tree, with a single present value that includes the right to defer, and prescribes optimal behavior conditional on where in the tree one finds himself. By the way, the ROA value will be greater than the maximum of the mutually exclusive NPV values.

II. Performance Measurement

"What drives my stock price?" "How do I measure business unit performance?" "How do I design incentives for my managers?" These are three of the most common questions that are central concerns of CFOs and CEOs. However, they rarely receive much coverage in corporate finance textbooks. I believe that answers to these questions are emerging in research that I have done with Aaron Dolgoff and Alberto Moel (2002). We call our approach Expectations-based Management (EBM™). Quite simply, it brings rational expectations to microeconomic decision theory.

What drives the total return to shareholders? Not earnings or earnings growth, and not EVA® or the change in EVA. Exhibit 1 shows the results of regressing traditional performance measures against the total return to shareholders as the dependent variable. We use panel data based on annual observations for the S&P 500 companies 1992 to 1998 inclusive. Total return to shareholders includes dividends, capital gains, and other distributions. Earnings exclude extraordinary and non-recurring items. Economic value added is defined (according to its advocate, Stern Stewart Inc.) as the difference between return on invested capital and the weighted average cost of capital for the year, multiplied by the average amount of invested capital. The smaller sample size for the regressions that uses EVA is attributable to the fact that the Stern Stewart database is slightly smaller than the S&P database.

The results provided by Exhibit 1 are, by now, not surprising. The conclusion that EPS, growth in EPS, EVA, and the change in EVA are all uncorrelated with the same period total return to shareholders is reported elsewhere (Biddle, Bowen, and Wallace, 1997; Clinton and Chen, 1998; and Kramer and Peters, 2001). Exhibit 2 goes on to use changes in analyst's expectations to explain the same period TRS. What is new is that we tried a multiple regression using all three types of expectations that are reported in IBES. The r-squared is 42% and the regression is highly significant. Most interesting are the individual independent variables. The first is changes in expectations about this year's earnings this year. In a multiple regression context, it is not significantly different from zero, and its "impact" on TRS is a coefficient of -.01. The second independent variable is changes this year in analysts' expectations about next year's earnings. It is highly significant, with a t-test of 21.3, and its impact on this year's TRS is 0.70. The third term is changes this year in analysts' expectations about long-term earnings. Also highly significant, with a t-test of 12.9, this variable has an impact coefficient of 8.6. It is ten times more important for determining this year's TRS than changes in expectations about next year's earnings. Other papers (Biddle et al., 1997 and Kramer and Peters, 2001) have reported the relationship between changes this year about this year's expectations, but no one has looked at the effect of changes this year in expectations about other time periods. Note that our results are consistent with a multiperiod discounted cash flow model where the heaviest weight is on cash flows beyond the first few years.

What are the implications for understanding what drives stock prices? Clearly, expectations count. Take Intel in October of 1998 as an illustration. It announced its earnings were up 19% over the year before. Therefore, earnings and earnings growth were positive. Since Intel rates of return on invested capital were in the 50% range, it easily was EVA positive, and the change in EVA was also positive. But, on the announcement, Intel's stock price fell 6%. Why—because the consensus analyst forecast expected earnings to be up 24%. Therefore, Intel failed to meet expectations, and its stock price fell.

Value is created when company performance

Exhibit 1. Total Return to Shareholders (TRS) versus Traditional Performance Measures—Regression Results*

Total performance metrics like EPS (earnings per share) and EVA (economic value added) are very poor predictors of returns to shareholders.

Performance Measure	Number of Observations	Adjusted R^2
Basic EPS (Scaled by Lagged Share Price)	2,522	4.5%
Change in Basic EPS	2,522	5.1%
EVA (Scaled by Lagged Market Value)	2,182	0.3%
Change in EVA	2.182	3.0%

*The dependent variable for all regressions is market-adjusted TRS. Sample includes S&P500 firms during 1992-98.

Exhibit 2. Multiple Regression Results Using Changes in Analysts' Expectations*

Multiple regressions of marked-adjusted total shareholder return (TRS) versus changes in analyst earnings (EPS) expectations indicate a strong correlation between expectations and returns.

Variable Representing Changes in Analyst Expectations	Regression Coefficients (T-Statistics in Parentheses)	
Percent Change in Analyst Forecasts of Current Year's Earnings (EPS)	-0.01 (-0.34)	Expectations about current earnings have no significant impact on TRS
Percent Change in Analyst Forecasts of Next Year's Earnings (EPS)	0.70 (21.3)	Expectations about next year and long-term earnings have significant impact on TRS
Change in Analyst Forecasts of Long-Term (3-5 year) EPS Growth	8.6 (12.9)	Correlation is much higher than traditional metrics (EPS, EVA)
Adjusted R^2	41.6%	

*S&P 500 firms during 1997-98. Sample has 2,390 observations.

exceeds expectations. I cannot emphasize this enough. It is not difficult to find examples of companies with rising earnings and falling stock prices. For example, Exhibit 3 shows Chevron. Focus, if you will, on 1994-1995. Earnings rose from roughly $2.50 to $3.00 per share. Yet the TRS was declining the whole year. If you trace the lines that represent analyst expectations, you see that in 1993 they were expecting $3.50 per share. More significant, however, is the decline in expectations for 1996 earnings that occurred in 1995.

Thus far, I have narrowed our discourse to expectations about earnings mainly because we only have data on expected earnings. A complete single period model would be based on the difference between actual and expected economic profit. Recall that the definition of economic profit (EP) is

$$EP = [ROIC - WACC] \times \text{Invested Capital}$$

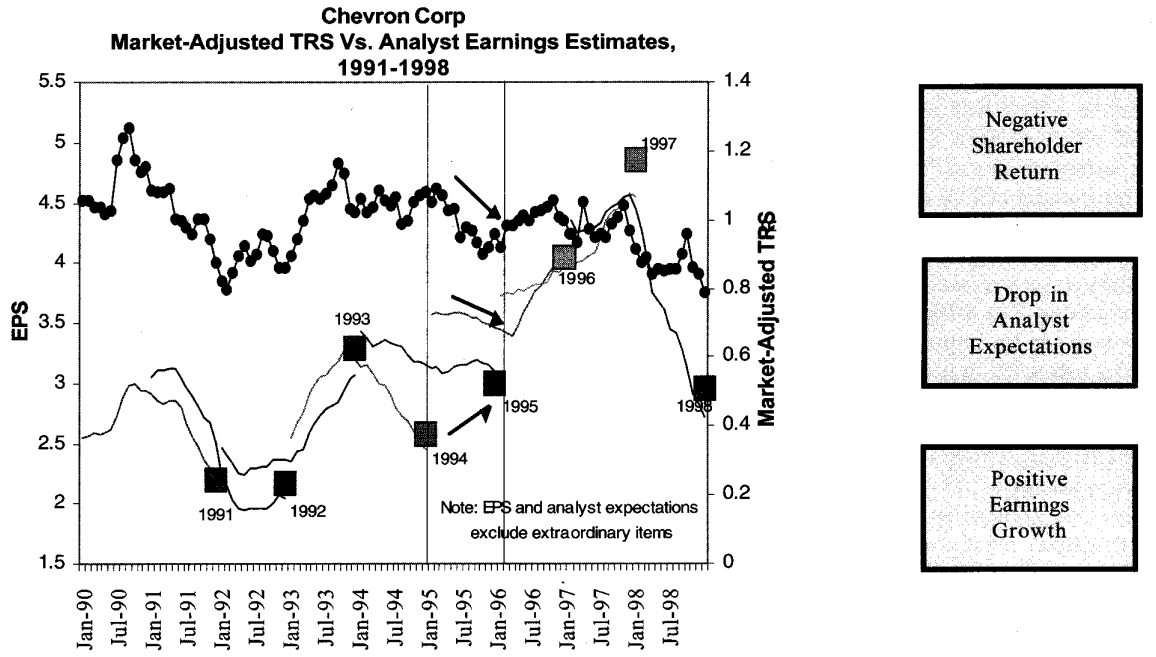
Mathematically, the TRS is a function of changes in expectations that result from the difference between actual and expected economic profit.

$$\begin{aligned} A(EP) - E(EP) = {} & [A(ROIC) - E(ROIC)] \times I \\ & - [A(WACC) - E(WACC)] \times I \\ & + [ROIC - WACC] \times [A(I) - E(I)] \end{aligned}$$

The intuition is that the first term is equivalent to raising the return on core (existing) investments to

Exhibit 3. Changes in Analyst Expectations Match Chevron's TRS

The upper dotted line is total return to shareholders. Each box is actual annual earnings excluding extraordinary items, and the lines that end in each box are analysts' consensus expectations of the earnings up to two years prior to its announcement.



create value by exceeding expectations. The second term implies that value is created if the cost of capital turns out to be lower *ex post* than expected *ex ante*. The third term says that value will be created when you can invest more than expected, but only if you earn more than the cost of capital on the new investment.

To review the managerial implications of expectations based management, consider the following question. Suppose that company A earned 30% on invested capital, while company B earned only 15%, while both had a 10% cost of capital. Which created more value? If you use earnings or EVA you will conclude that company A created more value. After all, it earned 20% more than its cost of capital, while company B earned only 5% excess return. But if you use EBM, you cannot answer the question without knowing what expectations were at the beginning of the period. In fact, Company A was expected to earn 40% and when it reported 30%, its stock price fell. Company B was expected to lose money, and when it reported a 15% return, the market rejoiced and its stock price rose.

Here is a subtler question. Your company has announced to the market that it expects to undertake two projects of equal size and that both are expected to earn 40%. Suddenly, you learn that the second project will earn only 20%. If your cost of capital is 10%, should you take the project? If you do, the market will be disappointed and your stock price will fall. Almost everyone's first thought is to simply forego the investment. But if so, the money not invested will earn the cost of capital (i.e., 10%). Consequently, if you decide not to take the project, your stock price would fall even further than if you took it. It still follows, therefore, that the way to maximize the value of your firm is to take all projects that earn more than the cost of capital.

What is different if EBM is what drives stock prices? First, company and business unit performance must be defined relative to expectations (and not relative to the cost of capital). The performance ranking of business units changes. Next, performance measurement becomes subjective, based on setting rational expectations, and not objectively measured as earning a positive spread over the cost of capital.

The immediate implication is that great care must be placed on external communications between top management and the investment/analyst community and internal communications with managers whose performance must be monitored. This is not easy to do well. I refer you to Jensen (2001) entitled "Paying People to Lie: The Truth About the Budgeting Process," for a discussion of the land mines that are involved.

III. A Potpourri of Missing Topics

Ask a CFO what skills had to be learned on the job, relative to what was available to learn in the classroom and you will find a huge gap. Perhaps the most important missing skill in the classroom is tax policy. It is how modern CFOs earn their living. A few hundred basis points off of the cash tax rate of a big company can be worth hundreds of millions of dollars. Tax policy is especially important for multinational companies. But differences in tax laws across state borders can be important too.

Deal structuring is a closely related area of interest for CFOs. What, for example, are the tax and accounting treatments of 20% IPOs (i.e., IPOs that float 20% or less of their equity), of IPOs in the 20-50% range, and over 50%? If a spin-off takes place, are there any limitations on divestiture of part of the business, or what about a merger or joint venture? What are the tax implications if a JV partner gradually buys the business over a period of time? What are the tax implications for the firm and for executives of stock grant and stock option plans? So it goes, on and on, in a world where the tax and accounting treatment of these structures can change in multiple jurisdictions.

Working capital management is also underrepresented in textbooks. Most practitioners who are responsible for receivables extend trade credit based on the Dun and Bradstreet rating of the client company. Rarely, do they know the profitability of the product line on which receivables are being extended. Yet if the product line is unprofitable, then they should extend no receivables. If it is highly profitable, then they should be willing to extend receivables to clients with lower credit ratings because a higher probability of default is more than made up by higher expected profits.

IV. What We Do Not know About Risk Management

Start with the phrase "risk management." It is nonsense unless reward is added to it so that it becomes "reward/risk" management, or simply value management. At the highest level, the discussion should start with the fact that investment and financing decisions cannot be separated if we wish to have a complete theory of the firm. Ultimately, some genius will construct a theory that solves the investment and financing decisions simultaneously; one that explains why rational value maximizers will take investment/financing risks that will bankrupt the firm, and why creditors will rationally fund said endeavors.

Today's textbooks are incomplete, at best, when it comes to coverage of the capital structure decision. Remember that value, expected cash flows, the randomness of the cash flows, and the opportunity cost of capital are all part of the whole picture. How would you answer when asked which firm is more valuable in the following comparison? Two firms have equal expected cash flows from operations (perpetuities), no taxes, and the same systematic risk, but firm B has greater volatility in its cash flows. Modigliani and Miller (1958) and the Capital Asset Pricing Model, taken together, imply equal values. Furthermore, their value is independent of their capital structure. But MM assume that operating cash flow, namely EBIT, is independent of financial structure. If this assumption is relaxed, and if too much debt actually affects EBIT, then capital structure matters, and firm B will be less valuable. If firm B can cheaply hedge, then hedging becomes a substitute for equity.

Unfortunately, capital structure, hedging, and investment decisions are co-determinant. Although academia is getting closer to understanding this problem (even articulating it represents progress), we are a long way from a satisfactory solution. Meanwhile, and habitually, CFOs solve it by choosing the capital structure that produces an "A" rating. From a practitioner's point of view, this solution has been the same for decades. Apparently, in the field of capital structure, the answer stays the same, only the questions change.

My complaint is that we are not delivering the best of our thinking to our students in the classroom. It does not matter that our theories are incomplete, we should at least have the latest content on the syllabus, even though it may not necessarily be the final word. In typical partial equilibrium fashion, let me review risk management (as though it were a separate problem) and capital structure (with the same caveat). Following that I will make suggestions regarding the pedagogy for capital structure.

Executives in charge of risk management usually hedge a "transaction" (for example, expected receivables in a foreign currency or a large equipment purchase). Textbooks criticize this practice because it is not comprehensive. It fails to minimize the volatility of total operating cash flows and may actually unhedge the firm. My criticism of the textbook approach is that it uses the wrong maximand. We should be maximizing

the value of the firm, not minimizing its risk. These two approaches can yield very different results (Copeland and Copeland, 1999 or Mello and Parsons, 2000). For example, if one is minimizing risk, the prescription is to always hedge. But if value maximization is the objective, then the expected benefit of hedging must exceed the expected cost. For example, the expected benefit might be measured as the present value of pushing back in time the day of expected business disruption and with it the associated costs. In one case example, a relatively inefficient hedge pushed the expected time of business disruption back from 50 to 52 years. Meanwhile the cost of the hedging program was 45 basis points per year for 52 years. On a present value basis the costs exceeded the benefits and the hedge destroyed value. But if the benefit had been greater relative to the costs, for example moving the expected business disruption date from 5 years to 10, then hedging would increase the firm's value. It is certainly possible, using a value maximization objective, for one firm in an industry to hedge while another would not.

What about the capital structure problem? Its solution is obviously related to the relative cost of hedging. Cheap and efficient hedging, although costly, can facilitate substitute risk-taking in the form of more debt that can increase the value of the firm via its tax-deductible interest payments. Some of the best work on the costs and benefits of capital structure has been written by Leland (1994). He starts with the adjusted present value (APV) formula and points out that it is incomplete. He suggests that it should have four terms, not merely the two found in Miller and Modigliani (1961). His valuation formula is given as:

$$V(\text{levered}) = V(\text{unlevered}) + TB - PV(\text{lost interest tax shields}) - PV(\text{business disruption costs})$$

Recall that T is the marginal effective tax rate, and B is the market value of debt. The trouble with the APV approach is that the tax benefit from carrying debt is uncertain; therefore, two terms are needed to capture its value, namely the present value of tax shields given certainty, TB, minus the present value of interest tax shields that may be foregone if the firm carries so much debt that it runs into default. Also, relevant is the present value of business disruption costs that result from lower operating cash flows induced when the firm carries a lot of debt. Finally, we note that the tax rate on operating cash flows in the first term, the value of the unlevered firm, is affected by leverage also, because operating cash flows are affected.

This is obviously a complicated capital structure explanation. Furthermore, it is an equilibrium story and needs to be supplemented with reasons for deviating from equilibrium in the short run, perhaps to take advantage of investment opportunities and signaling. But in spite of its complexity, it is a story that needs to be told, perhaps with simulation (e.g., Opler and Titman, 1997), in order to bring the latest thinking to the classroom.

V. Suggestions

My hope is that this article is a wake up call. Relevancy is the issue. If we want practitioners to use the work output of academia, we must listen to what our practitioner clients need. CFOs want to know "how to do it" answers to their questions. On capital structure, someone should attempt to apply Leland's theories and publish how they did it in enough detail that CFOs can replicate the work. On performance measurement, someone should work through all of the implications for setting budgets, for communicating and setting expectations externally with the investing public, and for incentive design. On investment decisions, we should devote more time to the capital budgeting process and push thinking about real options in order to provide examples that can be used in the field. There is plenty of room for better understanding of tax policy, reward/risk management, optimal deal structuring, and working capital management.

I would go so far as to recommend that applied finance publications also entertain a sort of "Finance for Dummies" type of article that, not only lays out the theory, but also works through an example that is detailed enough to seem real. For example, if one is reading about the valuation of a complex financial instrument, or the theory of the maturity structure of debt, then why not append a numerical example that shows how to work through the theory to its logical conclusion?■

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