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The Importance of Integrated Goal Setting: The Application of Cost-of-Capital Concepts to Private Firms

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In this article, we examine financial return, answer the question of how one knows when the return is adequate, and explore the relationship of short- and long-term returns as they relate to business health.

Introduction

Does profit mean that a business is achieving an adequate return? This seemingly simple question has a definite answer, but not an easy one. In this article, we examine financial return, answer the question of how one knows when the return is adequate, and explore the relationship of short- and long-term returns as they relate to business health. Obviously, the simplest answer to the above question is that a business achieves adequate financial returns when it meets or exceeds the owners' goals.[1] But what goals are important, how are they set, and how do they affect one another?[2]

[1] For publicly traded firms, maximizing shareholder returns is viewed as the primary goal. In that context, Jensen and Meckling (1976) argue that the alignment of owner and manager interests is necessary to reduce agency costs. Several authors, including Jensen and Meckling (1976) and Shleifer and Vishny (1997), contend that corporate governance is enhanced, and therefore agency costs are reduced, when corporate ownership is concentrated. Morck and Yeung reach a different conclusion when considering the agency costs in the context of firms controlled by family business groups. They note that "such structures could conceivably give rise to agency problems at least as serious as those known to afflict widely held firms" (2003, p. 379).

[2] A family and its business are interdependent and the decisions affecting one quite clearly affect the other. The head of a family, in Becker's (1974) article, "maximizes a utility function that depends on the consumption of all family members subject to a budget constraint determined by family income and family consumption . . . In this sense, then, a family with a 'head' can be said to maximize 'its' consistent and transitive utility function of the consumption of different members subject to a budget constraint defined on family variables" (1974, pp. 1078–1079). This analysis can be extended to a family business by applying Becker's concept of "social income," which is "the sum of a person's own income (his earnings, etc.) and the monetary value to him of the relevant characteristics of others" (1974, p. 1063). Habbershon, Williams, and MacMillan (2003) extend this line of reasoning by constructing "a unified systems model of family firm performance [that] focuses not only on describing stakeholder constituencies and conditions, but also shows how the parts of the system interact to generate idiosyncratic antecedents to firm performance. [They] begin with a general performance proposition in which the outcome of interest is maximization of the utility function of the family business social system" (2003, p. 454). They propose that various "arguments that may be included in the metasystem utility function [are]: the income levels of shareholders . . . short-run profit, long-run profit, . . . dividend levels, the quickest sale of the business, and/or long-run wealth accumulation, etc." (2003, pp. 455–456). Chrisman, Chua, and Litz (2003) suggest that Habbershon et al.'s (2003) "approach can be made more widely applicable, without any loss in the force of their arguments, by simply recognizing and allowing

In brief, we show in this article that a business is achieving an adequate financial return if it is meeting or exceeding its weighted average cost of capital, and a business is balancing its short- and long-term returns if it is keeping money in the business in a manner that allows for planned growth while achieving the weighted average cost of capital.[3] We maintain that owners' financial goals are most simply expressed as goals for business growth and goals for business payout.

There are two parts to the cost of capital: the cost of debt and the cost of equity. We begin this article with an exploration of what is arguably the more difficult of the two to define, especially in a privately owned company: the cost of equity. In a private company, one can argue that the cost of equity is quite arbitrary and can take on any value, from one determined using a public company model, to the "gut feel" family members have with regard to the returns they desire from their investment.[4] In their exploration of the "family effect," de Visscher, Aronoff, and Ward (1995), for example, argue that if family owners are very happy then their expected return drops to nothing.[5]

It is clear that the cost of equity has always presented businesspeople with a problem when moving from theory to practice. Even for large, financially sophisticated, publicly traded firms, the cost of equity can have many interpretations.[6] We can imagine the chuckle—or perhaps the anger—coming from John Chambers of Cisco Systems when in 1999 his finance staff gave him a high value for the cost of equity and he was sitting on a P/E ratio of over 200. We suspect he viewed his cost of equity as being miniscule. If he was using stock to finance an acquisition, a case could be made that he was correct because overvalued stock made acquisitions relatively inexpensive, but investors expected exceedingly high returns (reflected in a very high price to earnings ratio), which necessarily means a high cost of equity.[7] Even though the publicly traded firm's cost of

for the possibility that family firms will seek to achieve a variety of goals. Transgenerational value creation captures multiple goals and a purpose that transcends profitability, better than wealth creation that really represents the means rather than the ends of family enterprise or enterprising families . . . Put differently, noneconomic considerations will affect both the unique resources and capabilities that lead to distinctive familiness and the pursuit of wealth-creating rents, even in enterprising families, and should be actively incorporated into a theory of family firms" (2003, p. 468).

[3] See Brigham and Ehrhardt (2002, pp. 420–436) for a traditional discussion of this concept.

[4] Brigham and Ehrhardt (2002, p. 449) point out that estimating the cost of equity for privately owned firms is difficult because the firm's stock is not publicly traded. Habbershon et al. contend that the interaction of the family unit, the business entity, and individual family members, in a family firm, create an idiosyncratic pool of resources and capabilities and "family-influenced firms may have unique potential for $\text{trust}_{fi\text{—}}$, $\text{cost of capital}_{fi\text{—}}$, . . . etc., depending upon the specific context of the systemic influences of the family business system" (2003, p. 460).

[5] McConaughy takes the position that "[g]reat family businesses are not content to receive nothing on their investments," which he views as counterintuitive to economic theory and experience (1999, p. 357). He does argue that "a slight modification of the de Visscher, Aronoff, and Ward model eliminates the extreme solution where the cost of capital goes to 0 (zero) and yet retains the intuition of a family effect."

[6] In addition, several methods for determining the cost of equity for a firm exist, including the CAPM, discounted cash flow (DCF), and bond-yield-plus risk premium approaches. See Brigham and Ehrhardt (2002, pp. 424–436).

[7] Brigham and Ehrhardt point out that "P/E ratios are higher for firms with strong growth prospects, other things held constant" (2002, p. 87). If one uses either a constant growth or nonconstant growth model to estimate the price per share of a firm's stock, assuming the growth prospects of a firm increase, then the price per share increases causing the P/E ratio, ceteris paribus, to increase. Baker and Wurgler find that "in practice, equity market timing appears to be an important aspect of real corporate financial policy. There is evidence of market timing in four different kinds of studies." They go on to state that "analyses of actual financing decisions show that firms tend to issue equity instead of debt when market value is high, relative to book value and past market values, and tend to repurchase equity when the market value is low" (2002, p. 1).

equity has a generally agreed-on theoretical definition based on risk-adjusted industry and market returns, it can still leave leaders wondering. Although it can be a bad idea, it is no wonder that many still cling to the short-term (i.e., the current) return on equity (ROE) as the cost of equity. If an investment would lower the ROE—don't do it. Nice and simple. *But*, of this advice we say *caveat emptor*, buyer beware, because the short-term ROE is easy to manipulate!

The perplexing nature of the cost of equity becomes magnified, however, when business leaders of private, not publicly traded companies begin grappling with the issue. Although this rarely interferes with their ability to manage the enterprise, many leaders of private companies request assistance in choosing a cost of capital because of the uncertainty surrounding the cost of equity. Luckily for them, most of their shareholders don't understand these concepts either.

The Cost of Equity

We encourage private company leaders to recognize a simple fact: the cost of equity is generally an expression of the expectations of investors. Typically in the private company case, the leaders and their family are the owners or equity investors. So we propose that it is their own aspiration levels that yield their cost of equity. These aspiration levels are captured in the goals for the growth of the business and the ability of the business to fund their personal liquid wealth through dividends and other withdrawals.

Thus, we think of two types of aspirations when determining private company owners' cost of equity: desire for growth in profits and desire for income. High expectations for business growth and dividends/withdrawals yields a very high cost of equity that can put a business at risk and goes against the frequently stated idea that a low cost of equity is one of the competitive advantages of a family business. On the other hand, more moderate expectations yield a more moderate cost of equity.

Thus, we propose that a private company equate its goals for growth and payout to its cost of equity. This can be done by employing the following relation, which states that the long-term ROE *is* the cost of equity.

$$\text{CoE} = \text{ROE}_{\text{LT}} = \frac{\text{G}_{\text{target}}}{(1 - \text{P}_{\text{target}})}$$

where

CoE = the cost of equity,

ROE_{LT} = the long-term target ROE,

G_{target} = the target for the annual growth rate in net (after-tax) profits of the business, and

P_{target} = the target for the annual proportion of net profit paid out/withdrawn from the business.

To illustrate this relationship, let us assume that the leaders of a private business operate within an industry that they believe can support a target growth rate in net profit of 20% annually over an extended planning horizon. Further, the leaders have a target annual withdrawal rate of 60% of net profits. The CoE relation would then be:

$$\text{CoE} = \frac{\text{G}_{\text{target}}}{(1 - \text{P}_{\text{target}})} = \frac{0.2}{(1 - 0.6)} = 50\%.$$

A 20% annual growth rate in net profits *and* a 60% pay-out ratio would constitute an extraordinarily high level of aspiration, one that would sink many a business and be the stimulus for continuous and painful family fights. However, if these

goals are potentially obtainable, the cost of equity must be correspondingly high. Remember, as we will illustrate later, this does not mean the firm would necessarily have to make 50% returns because equity is only one source of capital.

A firm's growth target is strategically and emotionally important. Growth in profit drives business decisions and wealth creation, but a target must be grounded in reality. If the market in which the firm competes has a growth forecast of no more than 5% over the strategic horizon, then a profit-growth target of considerably more than that is an unrealistic dream unless the business makes considerable changes, such as entering new markets or growing through acquisition.[8]

The emotional importance of a growth target is very much tied to the psychology of goal-setting and performance management. Given the role of profit growth in wealth creation, a target should be aggressive. However, there are some nasty pitfalls in an overly aggressive target. A major pitfall is how leaders react to failure—particularly in their evaluations of others. Unrealized high targets can lead to harsh reactions that result in the best employees leaving or significant reductions in morale and individual productivity. Another pitfall is what we term the "growth firm paradox." An overly aggressive growth target yields a higher cost of equity and (with the capital structure held constant) cost of capital, which may cause leaders to forego investments that fail to meet the high hurdle rate. This failure to invest may thus cause the firm to fail to achieve growth targets. A final pitfall is what we consider one of the great vulnerabilities of family business. In publicly traded companies, share price goes down when people who have high expectations believe the company cannot meet those expectations. At that point, the cost of equity goes down and, unfortunately, so does the value of the business. In a private company, when expectations are not being met, the effect on the business is quite different and may result in increasingly vocal and intrusive shareholders at best, and litigation at worst.

Target setting for the payout of profits is also very strategic and potentially very emotional. Most leaders have heard the investor's conventional wisdom that "growth firms don't pay dividends." Although this is typically a public company rule of thumb, it is no less true for the nonpublic company.[9] The setting of targets for growth and payout is very interdependent. In our earlier example, a growth target of 20% and a payout target of 60% yielded a very high 50% cost of equity. And it should, since a firm must be enormously profitable to simultaneously achieve both goals over an extended period of time. And, of course, the growth firm paradox may again be in play.

This interdependence in goal setting can to some extent be facilitated by first recognizing that, *over the long run*, a firm's cost of equity *is* its ROE!

$$CoE = ROE_{LT}.$$

Thus, a firm may set an ROE target, and then employ this target to impose discipline on aspira-

[8] Acquisitions made by family firms are likely to be in the firm's core industry. For publicly traded firms in which founding family ownership is still prevalent, Anderson and Reeb (2003b), in the *Journal of Law and Economics*, find that, among S&P 500 firms, founding family ownership is associated with significantly less corporate diversification relative to nonfamily firms.

[9] Brigham and Ehrhardt state that "[s]hareholders prefer to have the company retain earnings, hence pay less current dividends, if it has highly profitable investment opportunities" (2002, p. 391).

tions for growth and payout. (Recall that a firm's market is the principal disciplinarian.) So the CoE equation introduced earlier may be used to develop, shall we say, a growth/pay-out possibilities line. Such a set of lines are depicted in Figure 1.

Each line in Figure 1 represents a combination of profit growth and pay-out rate that would yield the indicated CoE/ROE. For example, let us look specifically at the 25% line. If a firm targeted all profits to be retained and reinvested in the business (pay-out rate = 0), then an ROE of 25% would be profitable enough to sustain a 25% annual growth rate in net profit. But since it is hard to eat a growth rate, owners may require some payout of profits. Thus, if the pay-out rate was targeted to be 20%, the firm's 25% ROE would finance that payout and still sustain a 20% annual growth rate in profit. If the leaders targeted a 50% payout, then the 25% ROE could sustain a 12.5% annual growth in profit.

This interdependence of growth and pay-out aspiration levels drives *any* business, but its ability to facilitate goal setting in a private business is highly significant. Profit growth and profit payout drive family wealth creation—and must be disciplined by levels of profitability grounded in reality. So, in summary, we propose that a firm's cost of equity is defined by its long-term target ROE. This ROE target is interdependently set via the firm's targets for growth and payout tempered by its profit potential.

The Cost of Capital

So far we have been looking only at owners' money as the source of growth and payout. However, when we add debt to the mix, some

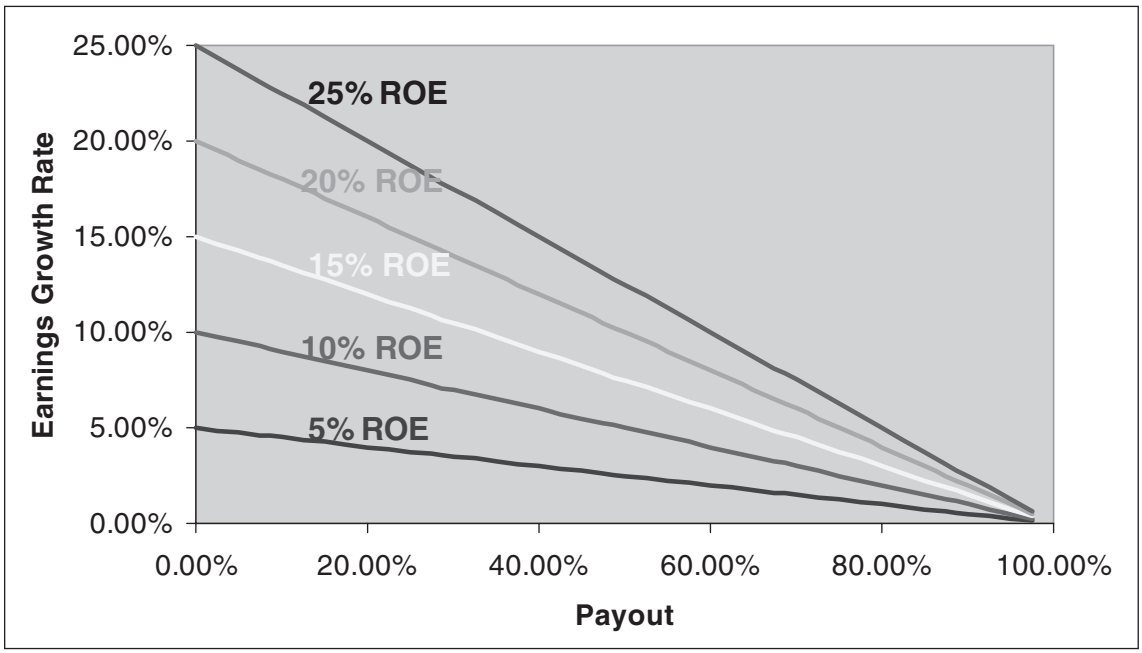

Figure 1 Growth Pay-Out Possibilities.

important things occur. For one, short-term returns can drop and the business can still meet aspirations for growth and payout so long as the interest rate on debt is covered by these short-term returns. In other words, we can finance our aspirations with other people's money—debt. This is, of course, where the overall cost of capital becomes important. And just as growth and payout targets are set based on leaders' risk-taking tendencies, so it is with debt. The definition of "prudent" is very personal and very few decision-makers look at the issuance of debt in quite the same way.[10]

We do believe that the choice of debt level can be determined a little more scientifically than owners' risk tolerances. We also believe that the choice of debt is influenced dramatically by our other aspirations as well. As we have demonstrated, our desire for a return on equity affects our ability to pay out funds to owners, which affects our ability to grow, which, in turn, can affect our ability to borrow funds. The simple model in Figure 2 illustrates this.

To build a model that can explain how to balance our numerous financial aspirations and debt, our enterprise must explicitly recognize two other members who require payouts: the first is the lender, whose payout is represented by an interest rate, and the second is the government, whose payout is represented by an income-tax rate.

We now have all the elements necessary for defining the cost of capital. The cost of capital is a weighted average encompassing the cost of equity and the cost of debt. The weights are the proportion of assets financed by equity and the proportion of assets financed by debt. We can therefore introduce the model for the cost of capital.

$$CoC = CoE \cdot (E_{target}) + CoD \cdot (D_{target}),$$

where
CoC = cost of capital,
CoE = cost of equity (as before),
CoD = cost of debt,
D_{target} = the desired proportion of assets to be financed by debt (generally referred to as the debt ratio), and
E_{target} = the desired proportion of assets to be financed by equity, or in other words, $E_{target} = 1 - D_{target}$.

As we earlier defined the cost of equity, we are left with the definition of the cost of debt.

$$CoD = i \cdot (1 - t)$$

where
i = the projected interest rate on debt, and
t = the projected income tax rate.

[10] Evidence from publicly traded companies suggests "that stock prices play an important role in determining a firm's financing choice. Firms that experience large stock price increases are more likely to issue equity and retire debt than are firms that experience stock price declines. This observation is consistent with the idea that stock price increases are generally associated with improved growth opportunities, which would lower a firm's optimal debt ratio" (Hovakimian, Opler, & Titman, 2001, p. 22). Matthews, Vasudevan, Barton, and Apana report that "Barton (1989) sought to identify from the owner-manager' experiences and perspectives the personal and situational variables that influence private capital structure decisions . . . Open ended interviews were conducted with CEO's of privately held firms representing a variety of businesses . . . and the findings suggest that beliefs about and attitudes toward debt financing can influence capital structure decisions" (1994, pp. 353–354). The article also noted that "based on the findings thus far it is posited that capital structure decisions in privately held firms are strongly determined by the preferences, unique experiences, and characteristics of the decision maker (in addition to firm characteristics such as size, nature of business, availability of capital, as so on)" (1994, p. 356). Anderson and Reeb (2003b), in the *Journal of Law and Economics*, find that for S&P 500 firms, "'family firms' debt levels do not significantly differ from debt levels in non-family firms."

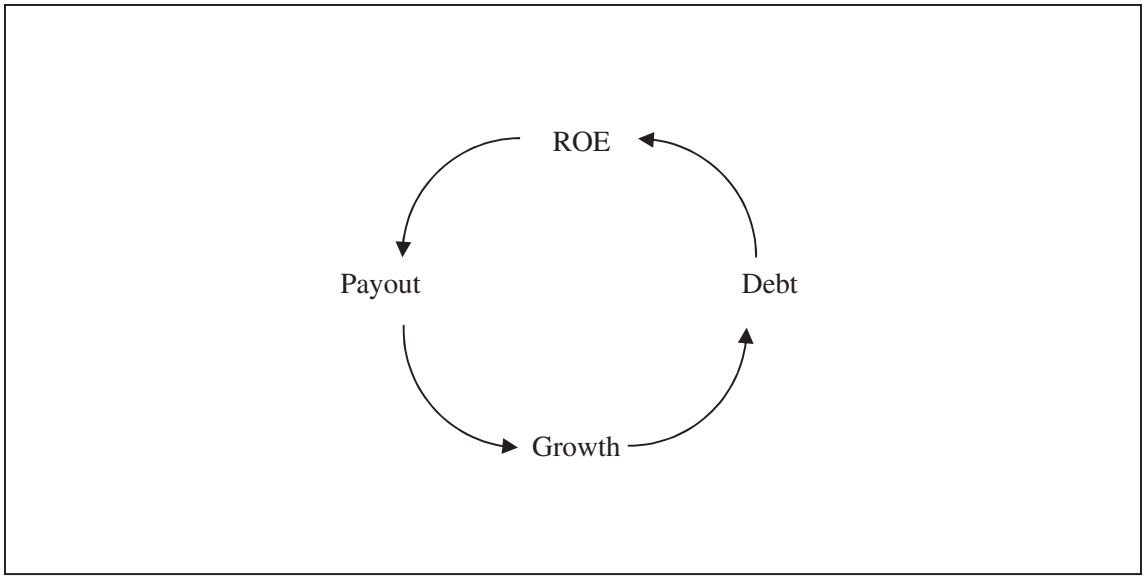

Figure 2 Interdependent Goals and Debt.

The cost of debt is the interest rate multiplied by 1 minus the tax rate because we do not pay taxes on interest, which means the government subsidizes the assumption of debt.[11] Putting all these components together, the cost of capital can be defined as:

$$\mathrm{CoC} = \left(\frac{\mathrm{G}_{\mathrm{target}}}{(1-\mathrm{P}_{\mathrm{target}})} \right) \cdot (1-\mathrm{D}_{\mathrm{target}}) + \mathrm{i} \cdot (1-\mathrm{t}) \cdot \mathrm{D}_{\mathrm{target}}.$$

It is exceedingly important for leaders to grasp the notion that each component of the cost of capital is an expectation or aspiration, and that these components should represent a highly interdependent goal-setting process where all goals need to be compromised to make an attainable package of goals. These interdependencies can be observed in Table 1. One can track the impact of growth and pay-out targets (as before), but also the willingness (or lack thereof) to carry debt. In reviewing the numbers in Table 1, keep in mind that the interest rate is being held constant for varying levels of debt. That would generally not be the case as interest rates tend to increase with the level of debt, but the rate is held constant here for illustration.

As our targets for growth and/or payout increase, so too does our cost of capital (on any row of Table 1, this is driven entirely by the cost of equity).[12] And, most importantly, we now have a gauge to assess the required profitability of any investment. For example, if we desire to grow profits at 20% per year while paying out 40% of those profits each year, we would require at least a 26.0% rate of return on any investment if we were only willing to finance assets with 25% debt.

[11] This, of course, is only true for those countries that allow interest as a tax-deductible expense.

[12] One could argue in certain circumstances that a firm, particularly one with low business risk, that chooses a capital structure containing zero debt views its cost of equity as being lower than its cost of debt (after tax).

Table 1 Cost of Capital Calculation

Target growth rate	10%		20%	
Target pay-out rate	40%	60%	40%	60%
Target debt ratio	Cost of Capital			
25%	13.5%	19.7%	26.0%	38.5%
50%	10.3%	14.5%	18.6%	27.0%
75%	7.1%	9.2%	11.3%	15.4%
ROE	15.2%	22.7%	27.8%	41.7%
Interest rate	6%			
Tax rate	35%			

If, on the other hand, the owners require or expect a 60% payout, then our required rate of return on any investment would rise to 38.5%. This, of course, makes perfect sense—higher aspirations cost money, and that money must generate a high return. However, if we are willing to finance our aspirations by increasing debt, our required return drops accordingly. Thus, if our target debt ratio were set at 50%, our 20% growth with a 60% pay-out scenario could be financed with investments requiring a 27.0% rate of return.

While we have observed that the market the firm serves represents the ultimate disciplinarian, the deployment of a cost of capital that is fundamentally tied to the firm's goals for payout, growth, and debt serves as an excellent source of internal decision-making discipline.

The Profit Engine

We now introduce the most pragmatic of realizations—ultimately, the business has to be managed so that it can stay alive and the most common way to ensure survival is to make money.[13] We make that money by operating the business so as to achieve a competitive position in the marketplace. For the purposes of this article and for simplicity's sake we propose that the most valid and reliable measure of operating a business effectively is defined by the operating profit a business generates based on the asset base required to support that level of activity. (Irrespective of how those assets were financed, meaning what combination of debt and equity.) Although this measure was historically termed the return on assets, it has more recently been given the title of basic earning power (BEP). This is a view of the return on assets that we enthusiastically endorse. It is basic, it represents the power to really generate growth and payout, and it is based on operating earnings. BEP can be represented as:

$$\text{BEP} = \frac{\text{operating income}}{\text{assets}} = \frac{\text{EBIT}}{\text{assets}},$$

where

EBIT = earnings (end of year) before interest and taxes, and

Assets = beginning-of-year total assets.

Obviously, when we generate more BEP, everything gets "easier"—growth, payout, and debt requirements. We can begin to examine this fact

[13] In rare cases, family owners view the CoE as negative; the business can be so meaningful to a family and provide nonmonetary returns of such psychological or other value that the family is willing to fund continued losses. Such a business and family are unsustainable over the long run unless other sources of income and wealth creation are available.

by first defining ROE in a traditional manner (i.e., the short-term ROE).

$$\text{ROE} = \frac{\text{net profit}}{\text{equity}}\left(\begin{matrix}\text{equity defined as}\\ \text{beginning-of-year}\end{matrix}\right).$$

Using simple algebra, we can then work this more traditional definition into a BEP-driven relation.

$$\text{ROE} = \frac{(\text{earnings before tax})\cdot(1-t)}{\text{assets}-\text{debt}}$$
$$(\text{assets and debt also beginning-of-year})$$

$$\text{ROE} = \frac{[(\text{EBIT} - i\cdot\text{debt})\cdot(1-t)]/\text{assets}}{[\text{assets}-\text{debt}]/\text{assets}}$$

$$\text{ROE} = \frac{(\text{BEP} - i\cdot D)\cdot(1-t)}{1-D}$$

Note that we are now defining ROE strictly in terms of ratios (BEP, i, D, t). Further, since we have defined the long-run ROE as

$$\text{ROE} = \frac{G}{1-P}$$

and since ROE must equal ROE, we can say that

$$\frac{G}{1-P} = \frac{(\text{BEP} - i\cdot D)\cdot(1-t)}{1-D}.$$

So we are now in a position to specify the level of basic profitability (BEP) to run our growth and level of payout given our willingness to accept risk (debt). How we achieve that BEP is, of course, what strategic and operational excellence is all about. Here, we are focusing on goal setting and its implications for the cost of capital. For a given goal package (targets), the level of basic profitability needed to sustain our interdependent goals is given by:

$$\text{BEP}_{\text{target}} = \left(\frac{G_{\text{target}}}{1-P_{\text{target}}}\right)\cdot\left(\frac{1-D_{\text{target}}}{1-t}\right) + i\cdot D_{\text{target}}.$$

This relation is illustrated in Table 2. The interpretation of the data in Table 2 is essentially identical to Table 1, except that now we are looking at BEP requirements versus the cost of capital.

When an owning family gets specific (as it should) regarding its aspiration levels for growth and payout and its willingness to assume debt, then for assumed rates of interest and income tax, *there is one and only one* minimum level of basic profitability (BEP) that will sustain all of this over time. Yes, we now know the definition of real money.

When we independently (vs. interdependently) set our executive-level goals, we are almost always, by definition, going to make a mistake. And someone's accountabilities—and career—may be highly impacted by that mistake. We recently

Table 2 Target Basic Earning Power

Target growth rate	10%		20%	
Target pay-out rate	40%	60%	40%	60%
Target debt ratio	Target BEP			
25%	20.7%	30.3%	40.0%	59.2%
50%	15.8%	22.2%	28.6%	41.5%
75%	10.9%	14.1%	17.3%	23.7%
ROE	16.7%	25.0%	33.3%	50.0%
Interest rate	6%			
Tax rate	35%			

observed a $30 billion corporation publish its financial goals for all employees and stockholders to see. Those goals included profit growth and BEP. Even given the extremely low interest rates of the time, this corporation's historical debt and pay-out ratios were such that there was no way the target (or current) BEP could come close to funding its growth target.

To the extent that our goals are not mutually attainable, something is going to have to give. And, thus, someone or something is going to have to change or mistakes and failures will be made. We may have to take on more risk or lower our pay-out and/or growth targets. We may have to significantly alter certain behaviors that could be holding down BEP. But something must give. It should be obvious by this stage that it is best to have a framework to judge mutual attainability and impose discipline on this highly important process.

Since mutual goal attainment implies getting our employees involved in helping us get there, we have an important recommendation for information sharing and organizational goal setting. We encourage leaders of private firms to hold themselves accountable for ROE targets and deploy BEP as the principal metric of performance-based communication for the organization. Nonexecutive members of businesses are helping to manage operations, not capital structure. They are actively making production and scheduling decisions, cost-management decisions, maintenance decisions, helping to select continuous improvement projects, perhaps setting inventory targets, and so forth. People can readily identify with BEP and its connectivity to their jobs and this knowledge is of immeasurable importance in assisting them to succeed in their work.

As a matter of fact, we can even use BEP as the primary cost of capital metric. Note that, again using simple algebra, the BEP relation can be easily restated:

$$BEP_{target} = \left(\frac{G_{target}}{1-P_{target}}\right) \cdot \left(\frac{1-D_{target}}{1-t}\right) + i \cdot D_{target}.$$

$$BEP_{target} \cdot (1-t) = \left(\frac{G_{target}}{1-P_{target}}\right) \cdot (1-D_{target}) + i \cdot (1-t) \cdot D_{target}$$

$$BEP_{target} \cdot (1-t) = CoE \cdot (E_{target}) + CoD \cdot (D_{target})$$

$$BEP_{target} \cdot (1-t) = CoC$$

Thus, the tax-adjusted target BEP for the firm (not the actual, current BEP!) *is* the firm's cost of capital. This is a marvelous managerial result for driving all operational metrics—including those for capital spending—through the primary operational metric: basic earning power.

In summary, all wealth creation must ultimately be funded by operational excellence. A firm's cost of capital is simply a direct measure of operational excellence requirements, which then fund growth and payout, and mitigate risk.

Employing Cost of Capital for Managerial and Institutional Decision Making

Goal setting is an important job, yet we would be remiss if we did not also address how the cost-of-capital approach affects managerial and institutional decision making. At the managerial level, we are concerned with more accurately aligning managerial incentives and performance measures with shareholder aspirations. We discuss below one approach to achieve goal and incentive alignment:

Economic Value Added or EVA®.[14] At the institutional level, we are concerned with determining appropriate levels of debt (debt that is not too risky) and when it is appropriate to depart from the cost of capital approach for making decisions.

EVA®

We have shown how an understanding of BEP at an operational level can help managers determine how to best meet performance demands that meet the owners' stated cost of capital. There is one important improvement that can be offered for companies willing to embrace further sophistication. Although businesses are too often managed via "the idea of the year," the framework of Economic Value Added (EVA®) has enormous merit for managerial decision making.

Back in the mid 1900s, the notion of "residual income" gained a foothold in management.[15] In our current notation and vocabulary, the concept of residual income held that a firm must earn its target BEP on its asset base in order to have earned a true economic profit. Thus,

$$RI = EBIT_A - BEP_{target} \cdot Assets$$

where

RI = residual income,

$EBIT_A$ = actual operating income for the year,

BEP_{target} = the target basic earning power, and

Assets = the beginning-of-year asset base.

Obviously, if a firm's actual BEP exceeds its target BEP then it will have a positive residual income. But the conversion to dollars from ratios has certain benefits if we are not comparing across businesses—particularly in the creation of such incentives as "bonus pools." The rationale is that if we are achieving target BEP, then current operations are funding our target growth, pay-out, and debt levels. Thus, there is a "residual" that may be disbursed, at least in part, as an incentive.

Economic Value Added (EVA®) is a form of residual income. It has the following definition:

$$EVA = EBIT_A \cdot (1-t) - CoC \cdot Assets.$$

So we are essentially substituting net operating profit after tax (NOPAT) for operating profit and the cost of capital for the target BEP. Note that:

$$\frac{EVA}{Assets} = BEP_A \cdot (1-t) - BEP_{target} \cdot (1-t).$$

Therefore, the EVA® metric and the residual income metric are very similar: both RI and EVA® are zero when the actual BEP is equal to the target BEP.

The architects of EVA® take this framework into some operationally significant directions. For instance, in order to account for value as it is used, they are passionate about capitalizing many items that the accounting profession would normally expense (R&D, many marketing expenses, many development expenses, etc.); they advocate unique methodologies for depreciating assets based on "use"; and (for public companies) they advocate the use of market valuations for weighting factors in the cost of capital (as do many in the financial

[14] Stern Stewart & Co.'s version of residual income (Stewart, 1991). "EVA® represents the residual income that remains after the cost of all capital, including equity capital, has been deducted" (Brigham & Ehrhardt, 2002, p. 50).

[15] "The concept (of residual income) appeared as early as the 1920's (e.g. in Dupont's bonus plan calculation of its 'Executive Trust Fund'), and has been frequently discussed in management accounting texts since General Electric adopted it in the 1950's" (Christensen, Feltham, & Wu, 2002, p. 2). Gebhardt, Lee, and Swaminathan (2001) use a discounted residual income model, a version of the discounted cash flow model, to generate a market implied cost of capital that they assert can be used to estimate the cost of capital for nontraded firms.

community, but we are addressing private companies here).[16] However, the point to be emphasized is that the cost-of-capital framework presented here is very compatible with such contemporary concepts as EVA®. The chief benefit of an EVA® approach is that it aligns managerial incentives with shareholder aspirations by not penalizing managers for long-term decisions. In EVA®, investment decisions (including those for people, marketing, and product development) are accounted for in a manner that does not reduce short-term profitability. (Note that EVA® calculations are made for assessing managerial and firm performance, and not for calculating corporate taxes.)

Managing Financial Risk (Debt)

We have carefully noted how the interdependent goals for payout, growth, and debt have both strategic and emotional components—invariably leading to significant differences in perception among shareholders or an executive team. The pay-out target can be quite emotional, especially as it interacts with the growth target. We have also observed that individual differences in risk tolerance—as measured by the willingness to assume debt—can be enormous.[17]

All of us are aware of paragons of strategic excellence who essentially carry no debt.[18] No matter how eloquent the leaders of those companies may be in the defense of their debt policy, zero debt makes very little sense. But when does a willingness to assume financial risk move from smart to too risky?

Let us come at this question from another direction: Can you raise your debt ratio simply to raise your pay-out ratio? Absolutely, although that is not how we would recommend explaining things to one's banker. If a firm's BEP is significantly higher than its cost of debt, raise the debt level and raise the payout! This of course raises the cost of equity but could actually lower the cost of capital.

Yet we still must come to grips with risk-taking tendencies and provide a measure of risk that does not make things too complicated. We have generally found that business leaders quickly identify with "interest coverage" as an appropriate criterion for expressing their willingness to take on debt. The definition of interest coverage is:

$$C = \text{interest coverage} = \frac{\text{EBIT}}{\text{interest payments}} = \frac{\text{BEP}}{i \cdot D}.$$

This measure of risk, which is fairly easy to work with, generally is excellent to use as a "policy" target. Interest coverage is simply the number of times operating income "covers" the firm's annual interest payments. Interest coverage of only two times is highly risky (operating income in this

[16] Rogerson demonstrates the importance of setting the depreciation rule "so that the total cost allocated to each period is proportional to the relative productivity of the asset in each period. This rule can therefore be viewed as being consistent with a version of the 'matching principle' from accounting, which states that costs should be allocated across objectives in proportion to the benefits that the costs create across objectives" (1997, p. 773).

[17] Leland points out that "[e]quityholders control the firm's choice of capital structure and investment risk. In maximizing the value of their claims, equityholders will choose strategies that reduce the value of other claimants, including the government (tax collector), external claimants in default, and debtholders. Modigliani and Miller (1963) emphasize the importance of taxes and default costs in determining leverage. Jensen and Meckling (1976) emphasize the importance of bondholders' claims in determining risk. But all claimants must be jointly recognized in the determination of capital structure and investment risk" (1998, p. 1237).

[18] In a privately held firm, when the cost of equity is less than the cost of debt (tax effected), because of owners' aspirations, then no debt makes sense because its use increases the cost of capital and risk. This concept is related to the one expressed in footnote 11.

case is only twice the firm's annual interest payment). Any negative disturbances in the firm's marketplace or in its competitive position could have dire consequences. Alternatively, an interest coverage of, say, 10 times translates into being fairly risk averse. We must note that excess cash (cash on hand that is greater than needed for working capital) further reduces risk and quite often can make smaller interest coverage ratios not very risky at all.[19]

Certainly, the stability or instability of the marketplace in which the firm competes must be a factor behind the choice of an interest-coverage target—not just the leaders' predispositions. For example, prior to deregulation, public utilities in the United States could carry huge debt ratios (and large payouts) since their low interest coverage did not really represent that much risk. Things have changed.

If we substitute interest coverage (C) for the debt ratio (D) in our basic model. we arrive at the following equation:

$$ROE_{target} = \frac{G_{target}}{1 - P_{target}} = \frac{(BEP_{target} - i \cdot D_{target}) \cdot (1 - t)}{1 - D_{target}}$$
$$= \frac{BEP_{target} \cdot (1 - 1/C_{target}) \cdot (1 - t)}{1 - BEP/i \cdot C_{target}}$$

This relation may be observed in Figure 3. In this figure, we assume that the firm has adopted an ROE target (and cost of equity) of 25% based on some combination of growth and payout. Further, we make the interest rate a nonlinear function of the debt ratio, rising rapidly at high levels of the debt ratio. We hold the tax rate constant. We can then see the impact on the firm's target BEP, target debt ratio, interest rate, and cost of capital. If the firm's leaders are willing to tolerate an interest coverage of two times, the firm would require a 22% BEP, would maintain a target debt ratio of 72%, have a cost of capital of 14%, but would be carrying an interest rate of 15%.[20] On the other hand, if the leaders require an interest coverage of 10 times, the firm would have to seek a target BEP of 27%, would maintain a target debt ratio of 38%, have a cost of capital of 17%, and would be carrying only a 7% interest rate. And if coverage was required to be "infinity" (no debt), the target BEP would rise to 39%, and the cost of capital becomes the cost of equity (25%). (These results are directionally very sound, but are of course impacted by the assumed behavior of interest rates.)

Risk aversion is costly. Risk embracing can become costly. The choice of coverage is still personal, tempered by the variability of the market-

[19] Excess cash has also been found to enhance corporate performance in certain circumstances. Mikkelson and Partch analyzed "89 publicly traded U.S. firms that held more than 25% of their assets in cash and cash equivalents at the end of years 1986–1991" (2003, p. 276). They found that operating performance of high cash firms was comparable to or greater than comparable low cash firms (size and industry). They report that "high cash holdings are accompanied by greater investment, particularly R&D expenditures, and by greater growth in assets" (2003, p. 275).

[20] Anderson, Mansi, and Reeb (2003) find that "founding family ownership (in S&P 500 firms) reduces the cost of debt financing. Specifically, we find that family firms enjoy a 32 basis point lower cost of debt financing relative to non-family firms." This, of course, supports the idea that founding family ownership reduces agency conflicts between shareholders and bondholders. Anderson and Reeb (2003a), in *The Journal of Finance*, find that family ownership is prevalent in one-third of S&P 500 firms and accounts for 18% of the outstanding equity of those firms. They also find that family firms, relative to nonfamily firms, enjoy both a statistically significantly higher ROA and Tobin's Q values. These results confirm McConaughy, Walker, Henderson, and Mishra's (1998) findings. Anderson and Reeb (2003b), in the *Journal of Law and Economics*, find no statistically significant difference in family firms' systematic risk or firm-specific risk relative to nonfamily firms. This result, coupled with family firms' lower cost of debt financing, supports the view that family firms generally have a lower cost of capital than nonfamily firms.

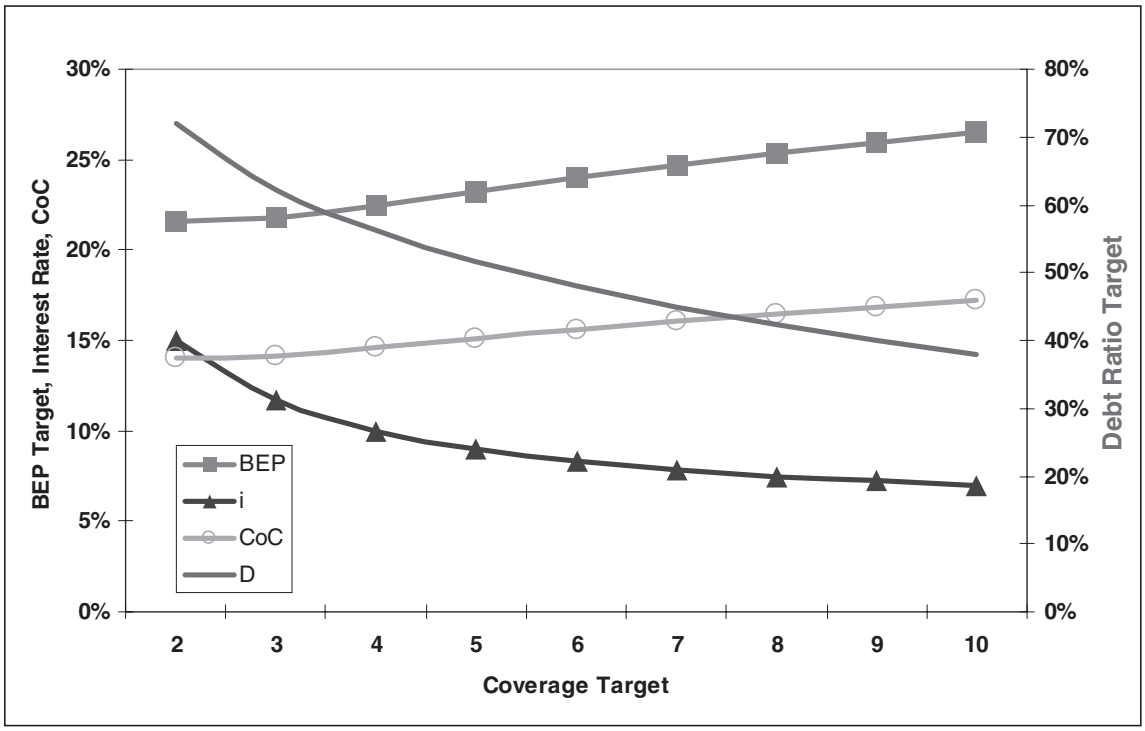

Figure 3 Impact of Coverage Target.

place. However, these frameworks bring some order and rigor to the goal-setting process.

Prudent Departures From the Cost-of-Capital Approach

The cost of capital is a theoretical construct. It is primarily useful in the evaluation of business performance and investment alternatives. These investment opportunities involve forecasts, estimates, and the assumption of operating risks. Adding plant capacity versus going into a new market does not represent the same accuracy of forecasts or the same level of risk.

Most mature companies have a hierarchical categorization of capital investments that looks something like the following.

1. Regulatory/legal requirements.
2. Essential capital maintenance.
3. Competitive imperative.
4. Profit-adding facilities and equipment.
5. Business expansion.
6. New product/market introduction.

A significant proportion of a firm's annual capital budget could be accounted for by the first three of these categories. And these are not expected to earn the cost of capital—or perhaps even generate a profit. Thus, the other categories must account for the profitability needed to fund growth and pay-out aspirations. Typically, only profit-adding equipment is evaluated by simply meeting the exact cost of capital. Business expansion and product/market introduction capital are

required to show a significant premium to the cost of capital, not just because they must take up slack but also because they have a significantly higher level of risk.

The category of "competitive imperative" is chosen by managers to justify everything from corporate jets to product development following a competitor's preemption. Huge information technology investments are often undertaken without having to meet any cost-of-capital hurdle. The category "competitive imperative" is absolutely required to meet the realities of the real world—and meeting these realities is often quite imperative. One key real-world imperative is retaining key personnel who may be the source of a capital proposal![21]

One of the serious problems with allowing capital projects to be classified as a competitive imperative is that people hide behind it. This relieves them of doing the necessary analysis to really demonstrate that the project has worth. One way firms deal with this is to require a full capital justification of all competitive imperative projects, including the calculation of a rate of return. The firm may then apply discount factors to the cost of capital as it would apply premium factors to business expansion and product/market introduction projects.

The concept of "discount factors" or "premium factors" may be a reasonable metric for leaders to consider when evaluating investment alternatives, evaluating people, and evaluating their own motivations, meaning, for a given decision, what "discount" from the cost of capital one is willing to accept in order to accept the investment, or keep the individual, just because! The answers to these questions are of course very personal, but the methodology presented here allows one to clearly understand what departures from cost-of-capital targets are costing the organization in terms of achieving financial goals.

Summary

Adding rigor and discipline to the goal-setting and decision-making process is greatly facilitated by deploying cost-of-capital concepts. Further, a firm need not be a public corporation in order to apply these techniques. A private firm can attach its cost of equity capital to its level of aspiration as reflected by (1) its goals for growth and payout, (2) its tolerance of debt, and (3) its need for basic earning power. The frameworks and techniques are not abstractions; they represent sound application of basic financial discipline. Finally, these frameworks and techniques force us to understand how interdependent an organization's financial goals are and how that interdependence permeates all financial decision making.

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[21] Dutta uses "an agency model to examine how managerial retention and incentive problems affect a firm's choice of (1) hurdle rate for capital investment when the owner makes the investment decision, and (2) management compensation plan when the owner delegates the investment decision to the manager" (2003, p. 86). The model "predicts that, all else being equal, firms will lower hurdle rates for internal capital investment decisions when their investment opportunities (1) require specific managerial expertise, and (2) can easily be exploited in outside ventures" (2003, p. 83).

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