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## ASSESSMENT OF THE VALUE OF CAPITAL

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### ABSTRACT

In this article, we highlighted the reasons for determining the cost of different forms of financing as a contribution to making different financial decisions. We have found that the specific price of debt - short and long-term - should be determined relatively easily, given the nature of contracts to be signed. The same applies to preferred shares. We also found that the nature of debt obligations and preferential shares also have many other considerations regarding debt servicing. Determining the cost of equity is a relatively difficult challenge because of the additional word that shareholders have, and because of their expectations of risk or return, which in turn reflects on the market valuation of the shares.

**Key words:** specific price of debt, determined the cost, market valuation of the shares

In this article, we will discuss in more detail how much the cost of the different types of capital employed in the business is. We will look at how these costs are measured, and so this economic reality affects business decision-making. We will begin by sketching the types of decisions in which the price / size of capital for taking them is important. Then we will discuss the cost of the different types of capital, including operating funds, long-term debt and equity.

Taking into account the specific costs of each of these types of capital, we will take an approach to determine the overall corporate value of capital, and we will discuss the use of this cost of capital in relation to the different returns for business returns.

### THE PRICE OF THE CAPITAL AND FINANCIAL SOLUTIONS

Since the primary purpose of investing, operating, and financing business is to increase the economic value of the shares by the owners over time, management decisions should create an economic value for shareholders that is higher than the value / cost of entry. Among these infusions is the cost of capital derived from different long-term sources.

#### Investment decisions

The economic outcome of such an investment must be sufficiently attractive to justify the allocation of a number of different long-term means available to the firm. Here we have to

recognize an important principle that is based on our systematic discussions: Normally, investment funds come from a common stock of different resources / money resources, none of which can / or must be recognized by the particular project that is considered Approval. Instead, investment funds should bear the total cost of all company funds.

Given the long-term nature of capital costs for working capital, equipment, technology, and so on, these commitments to funds are usually backed by a long-term capital plan of the company. This structure may include different levels of funding (to achieve a goal) and different financial instruments. Thus, the weighted value of the capital measure is an important criterion in the context of capital budgeting.

### OPERATIONAL SOLUTIONS

The time horizon for operational decisions is generally shorter than that of typical capital investment. However, operational movements of funds (such as increases or decreases in trade credit - both uses and extensions) and fluctuations in cash balances and accruals include costs in the form of both "pocket" costs / fees and opportunity costs.

Decisions on managing funds to minimize bank accounts can eliminate the cost of retention of unused funds. Indeed, there are countless circumstances in which, in the short run, they can cause or eliminate the cost of money / money used, as these decisions are often directly linked to additional sources that

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lead to specific costs.

**Financing solutions**

There are costs associated with receiving and compensating the different vendors of diverse capital resources, both short-term and long-term, to be taken into account by management when making financial decisions. It is clear that the use of any means leads to economic costs for the company in one way or another. One of the management's responsibilities is to develop a funding model that would match both the business profits / profits profile and the company's business development needs.

**EXPENSES FOR TURNOVER**

In the course of his business, the business often uses many types of debt, including commercial obligations (in the form of accounts and policies), an interim credit plan, bank or individual bank charges, tax accruals due to various government agencies, salaries for employees, Purchase installments and lease obligations. For any type of debt, including long-term debt in the company's capital structure, the specific borrowing cost can be determined relatively easily. Normally, debt obligations bear the interest rate indicated, which interest calls for frills during the debit period, at its end, or as a preliminary deduction from the principal. The latter is called discounting. In all these cases, the specific value of the debt is simply the direct price / value of the interest rate bond.

We also have to remember that, under the current tax guidelines, interest payments of any kind are deducted from corporation taxes. Namely due to this function, the net interest cost to these corporations is the annual interest multiplied by a factor (f) of one minus the corresponding tax rate.

For example, if a corporation pays 9 percent per annum on the principal of a note and its effective tax rate for any additional income or expense is 34 percent, the net effective annual interest expense of this note would be:

$$F = 1 - t \tag{1}$$

$$F = 1 - 0.34 = 0.66$$

$$I = 9\% \times 0.66 = 5.94\% \text{ (after taxes)}$$

Tax benefits effectively reduce the amount of

$$\frac{360 \text{ days}}{20 \text{ days} \times 2\%} = 36\% \text{ (before taxes)}$$

The effect: The company loses the taxable income that the cash loan otherwise the company would earn. In order to arrive at net costs, cash rebates must be reduced by the taxes that would have been paid for the lost

debt to net amount after applying the prevailing tax rate if the company is in a position where changes in net income affect the amount of taxes due. This tax relief can also be enjoyed by individuals under certain circumstances, as in the case of interest on mortgage deductions. Opportunity to deduct a specific expense does not apply to other forms of capital at this time.

We can define operational debt as short-term or mid-term revolving liabilities arising from routine day-to-day operations of most businesses. Some of these debt instruments are provided by creditors free of charge, for short periods of time, under commercially accepted terms in the industry or service in which the company operates.

Firstly, this category includes the due liabilities, which are the amounts due for suppliers of goods or purchased services. Depending on the terms of purchase, the company that is charged may withhold the payment for 10 to 15 days, even up to 45 and 60 days (deferred payment). Meanwhile, the company can make use of the funds without incurring any specific costs.

In most cases, vendors give a discount on early payments. For example, payments may have an additional price reduction of 2% upon payment 10 days after delivery, or 3% up to 15 days from the Invoice. This practice often allows the customer / buyer to reduce the original price of the product or service with the specific discounts / discounts. This kind of incentive is made to speed up fundraising in the company and reduce the level of tied credit to funds.

If the buyer allows the expiration of the discount period, the Invoice / Invoice becomes payable and must be paid in full in the given period (for example 30-45 days). Skipping the discount option followed a certain alternative cost. Often ignored, this cost can be quite large.

For example, if the credit terms are 2/10, n / 30, the cost to use my funds for another 20 days is 2% of the lost concession, or 36% per year!

(2)

income. If we take as an example that our fees are 34%, the net cost of using creditors for 20 extra days costs me:

$$1 - 0.34 = 0.66$$

$$2\% \times 0.66 = 1.32\% \text{ (after fees)} \quad (3)$$

On an annual basis, however, these costs are quite large, especially compared to the zero rate, which is the normal rate that large corporations with a flawless credit rating - or even higher interest rates - lower companies pay to borrow money .

The conversion of interest rate into annual is:

$$\frac{360 \text{ days}}{20 \text{ days} \times 1.32\%} = 23.76\% \text{ (after fees)} \quad (4)$$

Some companies, especially small and fast-tracking agents, have a practice of using exigible debt as a convenient way to take credit, sometimes unilaterally exceeding the credit limit's external limits with significant periods. The longer the money is held, the lower is the specific cost of the required obligations, because commercial lenders usually do not charge interest unless the negotiated amount has to be renegotiated. In extreme cases, unpaid accounts / bills can be converted into policies for specific dates, with or without interest. This is, in principle, made at the request of a commercial creditor who wants to establish a stronger claim on the debtor's resources.

This is clearly a bad practice for any borrower to break the specified commercial lending agreements from both the business and their reputation as well as the continuing creditworthiness. Potential creditors will consider such late payments when assessing credit history, as this information is readily available from credit rating agency databases. The hidden economic cost / cost should be considered in addition to the specific monetary costs incurred by the commercial credit. Another form of operational debt includes short-term policies and contracted contributions where the interest is charged in advance or added to the principal amount in the contract. For example, an annual \$ 1,000 policy, which has an interest rate of 9%, will provide the debtor with only \$ 910 in cash if the policy is discounted, When paying the interest at the beginning. Effective pre-tax spending is now higher than the interest rate because the cop paid \$ 90 for the privilege and uses \$ 910 for a year.

$$\frac{90 \$}{910 \$} = 9.89\% \text{ (before taxes)} \quad (5)$$

The income tax adjustment is considered exactly as in the previous example. In the event that we have a contract of, for example, \$ 1000, with payments in 4 equal installments,

with an annual interest rate of 10% of the original withdrawn amount, the effective interest price is much higher than what is said because the declining principal will be exclusively for the term Of the contract, as four-month payments will contribute the principal, providing interest on the remaining balance. The exact amount of 15.7% can be easily calculated with a preprogrammed calculator using the current value approach.

We can use an averaging process as a quick method to determine the average cost effective. For the term of the contract, the principal amount will decrease from \$ 1000 to zero, with the average remaining amount of the balance being half the average of this range, or \$ 500. The contractual interest rate is 10% of \$ 1,000 or \$ 100, a quarter of which is added to each of the four payments. When we bind the total paid interest to the average amount of funds we used through the borrowing of a firm, during the contract, the average price doubles:

$$\frac{100 \$}{500 \$} 20\% \text{ (before taxes)} \quad (6)$$

The actual score of 15.7% is lower, as in our example, the effect of interest is also paid on a basic installment. If the contract lasts more than one year, the interest rate must be annual, which means that the interest rate should be set for a given period of time in order to obtain the real price per year, which is a normal benchmark. More complex financing agreements are usually processed with present value techniques. Banks and other credit institutions use computers to calculate exact payments and fees and are legally obliged to disclose the actual costs of stacking on an annual basis. The simple averaging technique shown earlier is useful as a quick review of many circumstances, including personal finances, for the approximate value of the effective cost of the credit to make the initial comparison.

The discussion so far has focused mainly on the specific value of the operating debt, which can range from zero to significant annual interest rates. This specific cost is not the only aspect of debt, however. The repayment of the principal must be made, which involves part of the future cash flows of the company. The obligation to repay the principal over given time ranges forces the manager to anticipate and plan the allocation of funds and proceeds carefully. The forecast may be that refinancing may be desirable when the principal becomes due.

Another element of debt burden, as we have

already mentioned, is the impact of different types of debt bonds on the creditworthiness of the company in terms of current and future financing needs. In other words, the balance between owners' capital and other people's cash may be uncertain, and any type of loan must be suspended until a company starts to work for its debt obligations. The "closure of the tip" as a heavy debit transaction is often described as expensive (1) default risk, until it becomes payable (2) requiring the collection of much more expensive credit or equity funds as additional needs.

### LONG-TERM DEBT EXPENDITURE

Most companies hire at least some kind of debt to long-term debt to support part of their ongoing funding needs stemming from large capital spending, growth in operations or the replacement of other types of capital. This type of debt becomes an integral part of the long-term capital structure of the company. Examples are single-company bonds and are traded on the financial markets, or long-term loans with banks and other financial institutions. When determining an appropriate level of debt in the capital structure, management should make good planned decisions by assessing the risks, costs and debt servicing in terms of potential uses of the funds. Long-term debt commitments by their very nature have a far more lasting impact on the company's situation than the impact of short-term working capital or medium-term loans. The specific value of the long-term debt is expressed in the indicated annual interest rate of the participating financial instrument. For example, a 12% bond liability, which is unprotected, the total debt of the company's bonds, have a specific post-tax price

$$12\% \times (1 - .34) = 7.92\% \quad (7)$$

Assuming that the company can take advantage of the fall in interest, an additional tax rate of 34% is used here.

In addition, we will assume that the bond is sold at a price that is zero - the nominal value. The bond has an annual interest rate that is based on the nominal value, ie 100% of the principal is due to a certain future date, regardless of the actual proceeds received from the issuer. These receipts are often different as traded debt securities are usually sold at the best possible price available on the market by some insurers who bear some or all of the risk of selling the issue in question against a small percentage of gross earnings. Legal and registration costs are also charged to the company. That is why, according to the issue

value (which is related to prevailing interest yields and the quality of the credit rating of the company), the company may actually receive a net revenue at a discount (below the face value) or you may get a small premium.

In both cases, the specific price should be adjusted to take the actual receipts into account. The effect is similar to a short-term loan where the interest was paid in advance and therefore a specific cost slightly higher than the percentage indicated. Assuming that instead of 100 percent of the nominal value, the company received 95 percent of its bonds, after all costs and commissions, the effective after tax expense was 12 percent:

$$0.12 (1 - .34) \times 95 = 8.34\% \quad (8)$$

Apart from the specific interest costs, long-term debt also includes repayment of the principal. There are many types of principal payments, usually structured to fit with the nature of the company and the type of risk that the debt visualizes. Periodic repayment requirements can be met through a depreciation fund set aside for exactly those purposes held in a trust account in a depository institution.

The main thing to remember is that debt instruments, even in the long run, need to be restored in some form and time. The cost of this repayment lies in the need for careful planning of future cash flows, as well as the ability of the company to achieve future re-financing if the fund needs continue or increase. Another implicit price of long-term debt includes the nature and degree of constraint normally embodied in the debt agreement (notarized document). Such provisions may limit the ability of the manager to use other forms of credit (e.g. leases), they can set the minimum levels of certain financial ratios (e.g. turnover ratios or burden cover), or they can limit the amount of dividends that can be paid to the shareholders. From time to time, specific assets may need to be pledged as collateral. Each set of such provisions has implicit costs in that they restrict the freedom of choice of management in decision.

### PRICE OF OWN SHARES

#### Privileged Shares

This form of capital ownership is conceptually in a mid-term balance between debt and ordinary share. Despite being subordinate to various corporation creditors, the privileged owner has the right to claim corporate profits, ranging from ordinary shareholders to the size of the preferred dividend. In liquidation, preferential shareholder claims are satisfied before the remaining shareholders with

ordinary shares.

The specific price of preferred shares is usually higher than that of debt with a similar quality rating. Due to the equity status of preferred shares, the privileged dividends are not deducted from corporate tax and therefore are outflow of post-tax charges. For example, 14 percent preferred shares issued at face value (after deducting costs) cost the corporation 14 percent after taxes. For each dollar of the dividends to be paid for these preferred shares, the corporation must earn, before tax,

$$\$ 1.00 \times 1 / (1 - 34) = \$ 1.52 \quad (9)$$

compared to \$ 1 for each dollar of interest paid on long-term debt obligations. We can easily compare the company's cost with long-term debt and preferred shares if we assume that they were issued at prices that would result in earnings exactly equal to their value. When receipts do not have an equal nominal value, as is often the case, because under these market conditions, the price has to be revenue-based in order to obtain cost efficiently.

The additional implicit price of preferred shares lies in the fact that they have a higher security than ordinary shares, and their owners are ranked higher in the overall dividend. Additionally, the essential nature of preferential dividends (they can only be omitted in serious circumstances) introduces a degree of financial advantage with different levels of revenue. Preferred shares are closer to the concept of equity than debt, however, it makes indirect costs of their burdens far less serious than debt-making. The higher the expected risk of indebtedness, the greater the limitations are likely to be imposed.

### **Basic equity**

The holder of ordinary shares is the remaining owner of the corporation, as the ordinary shareholder is entitled to all assets and revenues that are not subject to prior claims. Joint shareholders provide long-term funding with the expectation that they will be rewarded by increasing the economic value of their shares. This value consists of accumulating the blocking effect of rising earnings and rising dividends on the market value of the shares. At a standstill, market value is influenced by general economic conditions and industry-specific risks and by individual companies.

In other words, in the case of ordinary shares, we are dealing with more variables, and the contractual provisions on compensation (such as coupon interest or the preferred dividend rate) are missing. As a result, the specific cost of the underlying capital requires a more

comprehensive assessment than the debt and preference shares we already know.

The cost of ordinary equity must be considered an opportunity. The investor provides funds to the corporation and thus expects to receive the combined economic return of the announced dividends from the board of directors and the future appreciation of market value. The investment is probably made on a logical basis, as the type of risk embedded in the company and its business reasonably coincided with the preferred risk of investors. In addition, investor expectations of earnings, dividends and market valuation were considered satisfactory.

The investor made this choice by giving up other options. The commitment is made under conditions of uncertainty for future results, as the only reliable data provided to each investor is the latest performance statistics. The challenge of measuring the value of the attracted shareholder / shareholder capital for the corporation stems from the need to respond to investors' expectations of the risk / profitable compromise that is directly related to investing in this opportunity. In other words, the company has to compensate shareholders with economic returns set in their future prospects, which may be different from their previous value.

Several approaches to measuring the value of Common Equity are used in practice: all involve many assumptions and a large part of the decisions. The biggest difficulty is to find a specific relationship to value-for-money - decisions on the security markets that affect the market price of ordinary shares. We will discuss three main methods: (1) revenue approach (2) dividend approach (3) risk assessment approach based on the asset asset model and pricing. Both revenue and dividend approaches are relatively simple; They directly value future revenue streams or dividends. But they also use highly simplifying assumptions / assumptions and are thus very limited in efficiency.

The third method, in contrast, approaches shareholders' return expectations by adding a normalized rate of return on securities and, in principle, a numeric risk premium that is specific to each company. As we shall see, this is the only approach that achieves econ The winning approach to the cost of core capital. This relationship is the simplest way to equate the value of total capital. As we are interested in the measure of the opportunity cost of ordinary shares (k), we will use the expected earnings per share as the current market price of the shares.

$$\text{Cost of own Capital} = \frac{\text{Estimated earnings per share}}{\text{Current market price per share}} \quad (10)$$

$$Ke = \frac{eps}{P} \quad (11)$$

Or

$$\text{Cost of own Capital} = \frac{1}{\text{Cost / profit ratio}} \quad (12)$$

This result is based on the assumption that all company earnings will be paid by shareholders, which is not realistic. At the same time, the measure does not allow the funds to be reinvested, which creates additional value for the shareholders.

If the first assumption of a 100% net profit on the loan is an alternative way of calculating the cost of equity is to design, year after year, the expected winning model and find the discount rate that is equal to those earnings after current market fees Value corrected for terminal value during this analysis. It is clear that the number of assumptions we have to make for the analysis to be valid is rapidly multiplying under these conditions. This simple measure is therefore, at best, a fairly approximate.

**Dividend approach to equity costs.** A more direct way to deal with at least one of the small benefits received by a shareholder is to use it to calculate the cost of ordinary shares. But the approach is also severely simplified because companies are very different in their payment of dividends, and the effect of reinvestment of undistributed profits is again ignored. In the simplest form, the dividend approach is the same as the dividend yield.

Expenditures for ordinary shares = Planned dividend per share / Current market price per share

$$Ke = \frac{eps}{P} \quad (13)$$

The introduction of dividend growth in the formula is an improvement that partially accounts for reinvestment are part of the value received by shareholders. The assumption that the successful reinvestment of retained earnings will lead to increased profits, and thus the dividend grows. Mathematics in the formula allows us to simply add the expected dividend growth rate to the previous equation. Again, we will start with dividend yield and adding a steady dividend growth rate (g) to stimulate the economic expectations of shareholders.

$$Ke = \frac{eps}{P} + g \quad (14)$$

However, the difficulty lies in determining the rate of increase of the dividend, which should be based on the best assumptions for future results mitigated by past experience. Many computational processes can be used. If significant policy changes are forecasted, the analyst may want to change the approach by making a series of year-by-year calculations and assumptions, calculating a composite future dividend growth model, thanks to these annual forecasts.

A few words about taxes have to be said here. In both approaches - that of revenue and that of dividends - we work with post-tax rates from the company's point of view. Earnings per share are accounted for after tax, whereas the total dividends, such as the preferred dividends, are not deducted from taxes and are paid separately from post-tax income. Therefore, no adjustment is necessary in the results to compare them with the value of the after-tax debt and the preferred shares.

The investor also judges the opportunity to earn economic return in these conditions. However, interest and dividends are taxed on the recipient's income. Therefore, as personal tax conditions vary considerably, it is necessary to make an adjustment from an investor perspective to assess the investment opportunities objectively. However, a business analyst can not perform accurate calculations without knowing the tax status of the individual. Therefore, the working assumption that we can make in this context is that most investors are subject to some tax burdens; We can get financial results that are consistent with the point that the individual investor has to calculate the impact on the personal tax.

**The Basic Capital Risk Approach.** The risk assessment method does not rely on specific estimates of current and future earnings and dividends. Instead, normal market returns are derived from published financial statement and yield data, which is adjusted by a specific risk

premium or reduction for the company. The rationale is the assumption that the company's equity cost to the shareholders is related to the relative risk of its ordinary shares. The increase in relative risk increases the premium in the form of additional economic return that should be expected from an investor. This approach makes highly developed intuition and can be shown statistically.

At any given time, securities markets carry a rate of return ranging from zero-risk government securities to the bottom of the scale to significant revenues from highly speculative securities, including high yields but risky risk bonds. The risk / return auction is very inherent in many levels of securities. Risk is defined as the yield variability inherent in the type of securities, while return is defined as total economic return on securities, including interest or dividends, and changes in market value.

*Capital Asset Modeling and Pricing Model (CAPM)*. A number of specific methods have been developed over the years to express the concept of risk premium and return on equity that reflects the cost of ordinary shares for a corporation as a methodology that is theoretically acceptable and practically usable. While no individual method is fully satisfactory under these conditions, the most widely accepted model of asset pricing is the MCC. We will discuss some of its features and features here, but its broad conceptual and theoretical supports are far beyond the scope of this article.

Three elements are necessary when using the capital pricing of a capital asset, and everyone must be carefully evaluated.

The first element is an estimate of the return on risk-free securities. The aim is to find the lowest portion of the yield range currently in the securities market as the starting point from which to build a higher, risky calculated return specific to the specific ordinary shares.

The second element is an estimate of the return on a similar type of medium risk securities. This is necessary because the *CAPM* method develops a specific adjustment for the relative risk of a particular bet against a medium or baseline.

The third necessary element is an expression of

$$Ke = 9.0 + 1.4(13.5 - 9.0) = 15.3\% \quad (16)$$

composed of 9% without risk return plus the calculated 6.3% risk premium of the company

the relative risk, which is based on the variability in the return on the specific securities analyzed by the security analysts.

The risk, therefore, is a very relative concept in , and a specific definition can not be acceptable to all. We will ignore the arguments for and against this definition in our discussion and instead concentrate on how it is used in *CAPM* to arrive at company-specific returns. The measure of risk, in the form of the co-variance of individual returns, with that of the medium risk stock portfolio is called. This is determined by linear regression of the last monthly total return on a specific security against a baseline such as the S & P 500 index. Services like ValueLine provide the current beta for publicly traded securities as a natural thing.

How do these three elements combine to reach expected returns and equity costs for the company? The *CAPM* method determines the cost of ordinary equity as a combination of risk-free returns and a risk premium that has been adjusted for the company's specific risk.

The *CAPM* formula is:

$$K = R_f + \beta (R_m - R_f) \quad (15)$$

where

K is the value of the capital

R<sub>f</sub> is without risk income

β is a co-variance of the company's return against the portfolio

R<sub>m</sub> is the average return on total shares

β is expressed as a simple factor that is used to multiply the difference between the expected return on the average annual portfolio and the expected risk-free yield. This difference, of course, is equal to the risk premium inherent in the portfolio. B - the factor regulates this average risk premium to reflect the higher or lower relative risk of the individual share. B is above 1.0 because the relative risk of the share exceeds the average and drops below 1.0 when the relative risk is below the average.

The calculation itself is quite easy, while the extraction of the investments is not as we have already observed. To show this, let's arbitrarily choose a 9% rate without risky returns, approximately 13% of the S & P 500 return and a company with a rather risky 13 of 1.4. The net value in this hypothetical example would be

is equal to a total of 15.3%.

Much of the problem arises when using *CAPM* or related measurements to obtain the value of the securities. One of these, which we have already mentioned, is the quality of the risk-free return and the average return on the common stock portfolio. While the return on long-term US government securities is a good substitute for the former, the average return on the portfolio is filled with conceptual problems. If  $\beta$  is the only indicator of relative risk, then the nature of the portfolio against which co-variance is measured is important. Common values like the S & P 500 may or may not be appropriate under these circumstances. There is also a problem with the use of recent data, especially about yield variability, in assessing future relationships that demonstrate shareholder expectations.

Consequently, the results of *CAPM* calculations, as well as most types of financial analysis, should be used with caution and personal judgment.

**Inflation.** So far, we are talking about the cost of capital, without concrete reference to the impact of inflation. We can do this because there is a real need for adjustment. Without risky yield on government bonds, it implicitly allows the expected inflation rate and the expectations for future inflationary levels to affect the yield on such securities. When inflation subsides, yields decrease. When inflation expectations rise, bonds are also rising. The same applies to bonds from other financial instruments.

If there was no inflation, risk-free returns would be in the range of 3 to 4%. In fact, not only *CAPM*, but all the other capital cost measurements we have mentioned, include the expected inflationary effects in which future receipts are measured and taken into account. Ranging from risk-free bonds to those of speculative securities is also in line with the impact of inflation. To sum up, it should be obvious that the core capital cost separately from the specific calculation method generally brings higher interest rates on the securities or preferred shares. The residual statement represented by ordinary shares is associated with the highest loss / profit swap. Thus, the return expected from ordinary shares is higher, which means that there is more capital spending from the company's point of view.

#### **AVERAGE PRICE OF CAPITAL**

Once the specific prices of the different types of capital have been established separately, we have all the initial specific prices necessary to finance the solutions mentioned earlier.

Because most companies use more than one form of long-term capital, investment financing and management, and because of the fact that over time the sum of sources used for long-term funding may change, we need to explore the cost of the company's capital structure as a whole. The result we are looking for is the average amount of capital cost that reflects differences in the various sources used. It covers the costs of compensation paid to long-term creditors and shareholders in respect of special provisions, as well as the awarding of ordinary shares to shareholders in respect of risk-accompanied return.

Several problems need to be solved when determining the overall corporate cost of capital. The first is the pricing of the various types of long-term capital invested, which has already been prepared conceptually. The second thing that needs to be determined is the weight and proportions of each capital in the structure to be analyzed. The third question is whether to apply market values or balance-sheet items to the different categories of capital until weighing. Only then can we calculate the weighted average cost of capital that is appropriate to its purpose.

#### **Price**

The first issue that needs to be addressed is whether it is appropriate to look at the previous prices of existing securities in the company's capital structure or the alternatively increased costs involved in adding newly issued securities. Frequently, the debt and preferred shares of the balance carry with them a series of previous problems a large part, of which they have interest or dividend rates that differ greatly from the current ones. Liabilities that are 10, 15 or 20 years old are likely to bear outdated government spending. In addition, the different methods to reach the cost of core capital are based on future expectations that are not necessarily in line with past debts or preferred costs. To resolve this dilemma, we must recall the principle: The purpose of the analysis always determines the choice of data and methodology.

Typically, the key purpose of calculating the weighted cost of capital is to be used when deciding on new equity investments that are valued at a standard return, which in turn adequately compensates all capital insurers. Unless the company undergoes a significant change in structure, the funds for new capital commitments are expected to come from the current domestic cash flow, extended by new debts, new shares, or both. This is a constructive process in which elections are still being made for new investments. As we already know, the



latest investment and financing decisions are stranded costs. Therefore, the most appropriate measure of the cost of capital is based on the rising costs of the various forms of capital employed by the company.

### **Weighing**

As we have mentioned, we are guided by the weighted value that reflects the ratio of the different types of capital in the company's structure and again there are major problems. The current capital structure, as reflected in the balance sheet, is the result of past management decisions for both financing and investment and work. The question that needs to be asked is whether these types and proportions of capital in this capital structure can be retained in the future (regardless of whether they fit into strategic management plans). The planned capital budget supports the company's future strategies, especially in times of high costs, which can really lead to significant changes in the long-term financing of the company. Also, the management team can make gradual changes in their financial policies that, over time, can lead to significant changes in their capital structure.

In other circumstances, management may be satisfied with the current proportions of capital in the company's structure as a long-term goal. However, the increase in the required capital is carried out in parts. Therefore, in the short term, each type of capital could be described as more than what the long-term funding objectives provide. Capital should be raised in response to market conditions and appropriate choices to be made on the basis of considerations.

The analyst must resolve this dilemma, the cause of such differences. Given that the conditions in a company are never static in the long run, the choice of proportions must be a compromise between what it is and what it will be. The current proportions are a good starting point but should be adjusted according to assumptions about the future financing direction that the company will take in the long run as a type of sensitivity analysis.

### **The market value compared to the carrying amount**

The weights that will be assigned to the different types of capital will obviously differ if we choose to apply the current market values as opposed to the values on the right-hand side of the balance sheet. We need to look at the purpose of the analysis to determine which value is more accurate. If we derive from the criterion of the expected return, we must use

the current market value for the different types of capital of the company as it will reflect the expectations of both creditors and investors. The latter certainly does not enter the carrying amount of equity, which in turn can differ significantly from the current value of the shares traded on the market. In addition, it is the responsibility of the management to meet the expectations of the shareholders regarding future economic value in order to create new investments, which in turn compensate creditors for future revenues. As we have seen, government securities are static and do not fit the changing environment.

The choice of market value also complements the use of part-financing to the extent that both are reflected in current market conditions. The market value of equity automatically (and indirectly) includes retained earnings as reflected in the balance sheet. Though many people think the undistributed profit is worth nothing, they are lying. Indeed, retained earnings represent part of the residual claims of shareholders even if they were imperfectly valued in the balance sheet due to accounting conventions. In this aspect, there are also conceptual problems that can be raised against market values and their weight. One of these problems is that the company has financial requirements that are different from those that the capital structure knows. There, it can be argued that the book value may be more appropriate.

### **Calculation of the cost of capital**

We will now look at a simple example of calculating the capital of a hypothetical company. This will help us demonstrate the basic methods of understanding the process, which is a big part of decision-making.

The company has three types of long-term capital: debt, preferred and ordinary shares. It is assumed that it can issue new bonds at a real price of 12% and new privileged 13% on the basis of expected market pricing and post-subscription at an equal cost. Keep in mind that running costs are above the rates the company has paid on its long-term capital, as shown in the balance sheet. Ordinary shares of ABC are traded between \$ 63 and \$ 67, and the most recent stock earnings are \$ 4.72. Dividends from last year's shares are \$ 2.50, and b's analysts estimate 1.1, which is quite risky. It is assumed that the estimated risk-free yield is 8.5% and the best estimate for the overall return of the S & P 500 is 15%.

The overall prospects of the company are considered satisfactory and analysts predict

secure revenue growth if the result is around 6%. Given this information, we can calculate the weighted cost of capital. As a result of these decisions, future ones will become more and more complex.

The corresponding costs of the three types of capital can be obtained as will be shown later. Keep in mind that we are increasing each Long-term debt:

$$Kd = 12.0 \times (1 - 3.4) = 7.92\% \text{ after taxes} \tag{17}$$

Preference shares:  $Kp = 13.0\%$  after taxes

Ordinary shares:

$$Ke = 8.5 + 1.1 (15.0 - 8.5) = 15.65\% \text{ after taxes} \tag{18}$$

The debt price is based on the actual tax expense of 12%, and the effective costs of the preferred shares do not require tax adjustment. The asset pricing model is used to calculate the ordinary shares. The result should be compared with less satisfactory answers received through income or dividends.

If we use the revenue approach with a current market price of \$ 65 or a half (\$ 63 + \$ 67), you will receive an equity expense as follows: Equity:

$$Ke = \$ 7.31\% + 6.0\% = 13.31\% \text{ after taxes} \tag{20}$$

This dividend approach provides other alternative results, which is in fact a function of the rate at which the dividend changes and

$$Ke = \$ 2.50 / \$ 65 + 6.0\% = 9.85\% \text{ after taxes} \tag{21}$$

It is not unusual that three of the results for determining the cost of capital provide different results, as data and assumptions are not the same. The earlier discussion of each of the methods presented all the important questions. Factors for determining the corporate value of capital depend on the relative stability of the current capital structure and on the accuracy of market values. Let's assume that governance is pleased with the current capital structure and will raise capital with the same proportions over time. Also, let us assume that the company's existing bonds are traded at 83 3/8 (1000% bond with code 10% costs a reduced price of \$ 837.50 compared to bond growth). While existing preference shares have a \$ 12 dividend and are sold at 92 1/4 due to the increase in profit (each share has a face value of \$ 100 and currently costs about \$ 92.25).

#### CAPITAL EXPENDITURE AND RETURN STANDARD

All noted that the primary objective of

fund's spending on a case-by-case basis, not for the most recent costs reflected in the balance sheet where the outstanding bonds are 10 per 100 and the preferred shares are 12 per cent. Using the methods discussed earlier, the calculations for each type of capital are:

$$Ke = \frac{1}{\frac{\$ 65}{\$ 4.72}} = 7.31\% \text{ after taxes} \tag{19}$$

If we should modify the formula to include the expected revenue growth (g), then g should be equal to 6% and the result will be 15.65% of the costs achieved through the capital asset valuation model:

Equity:

its expected growth rate:

Equity:

extracting the weighted cost of capital should be to find reasonable criteria for measuring new investments. This amounts to establishing neither a return that is high enough to

compensate all financial providers according to their expectations. Using a weighted cost of capital for this purpose only allows for further discussion.

#### Price of capital as decreasing measure

In a one-off business with clearly defined risk characteristics, the weighted cost of capital may also serve as a declining one when assessing capital investment projects ranked in decreasing order of economic attractiveness. If sequential analytical methods are implemented and decisions are made to predict cash flows from the project, also if the risks are predicted and tested by sensitivity analysis, then acceptance or rejection of the project can be solved thanks to this minimum return standard. Suppose the company can fund all its projects at the same cost of capital and without significant changes in the capital structure.

The average weighted cost of capital works well in this idealized environment because the risk premium built into the measure, the proportions of the sources of new funds and the range of risks in the projects are compatible with each other as well as the business risk inherent in the company. However, when any of these conditions change, the Governing Board's judgment must carefully change the cost of capital and its application.

One common problem with one business is the real possibility that the amount of potential financial costs may exceed the already defined finances to a certain extent. If the list of projects contains those that meet the standards and even exceed them, the management team can change the capital structure of the company so that it finances them. In this case, the weighted cost of capital will most likely change. Increasing the link between these things can lead to additional risks that await pressure to raise the cost of debt issuance and equity.

The increase in a stock of capital may lead to consideration of the net profit in the short term, which reflects the market value of the share and, possibly, of the firm's and the ordinary shares of the company, which is estimated by security analysts. While change can be managed, the idea is that the business investment process and the choice of appropriate standards can not be static.

Another practical issue is the attitude of business risk management. Given that capital investment analyzes contain a lot of uncertainty, management may want to increase the declining cost compared to the weighted cost of capital in order to free up room for mistakes - and even for bias, which is not uncommon, as most organizations are struggling for finances.

### **Risk categories**

By definition, the weighted cost of capital must reflect the risk of the company and the capital structure, but this is staggered as the different capital-investment projects will carry a different risk. Companies typically face investments such as replacing equipment, expanding the existing market, bringing new products or services to new markets.

The risk of these investments will vary materially. Replacing tangible assets that will help serve a market that the company has proven to be significantly less risky, allowing a more accurate cash flow assessment than entering a new market would allow.

A common way to tackle this problem is to apply a high discount rate to projects with a higher risk. A hierarchical system of minimum returns can be composed to a certain extent and arbitrarily so as to vary with the weighted value of the capital downturn.

The high discount rate for risky projects would test them under such conditions as to whether they are genuinely acceptable. In such cases where there is a high risk or profit standard, it would be appropriate if the management team had a more modest expectation.

On the other hand, it is often discussed that it is precisely the weighted cost of capital that shows the spectrum of risks when developing the business. It is therefore appropriate for the discount rate range to cover the weighted cost of capital. This allows less risky projects to be discounted with a return on return below the weighted cost of capital, while the risky ones - at or above that level. When all projects are assembled they should generate an average return at or above the weighted cost of capital.

This approach requires that the proportions of projects with a different risk are carefully monitored to achieve the desired outcome over time. Otherwise, the company may face significant deviations from the expected results. Moreover, it should not be forgotten that shares can only grow if returns exceed the cost of capital in the long run.

One topic, however, continues to support raising the standards of return on capital projects. Each company faces a certain increase in capital costs without real financial benefits. This includes environmental protection, investment in the infrastructure of buildings, or costs for office space and equipment.

From this, it can be argued that these goals need to be economically involved in the expected financial benefits of all other investments. Therefore, the total amount of the invested capital must reach or exceed the weighted cost of capital. If part of the capital remains unprofitable or neutral, returns from other profitable projects must be higher to offset for non-productive investments. If the board of directors decides to adjust its return standards to these conditions, it must fairly assess the characteristics of the portfolio of this project.

### **Capital cost for businesses with multiple businesses**

The question of determining an appropriate return standard becomes more complex if the

company has several subsidiaries or affiliates dealing with different activities and markets, and risky. We can calculate the total cost of capital with the help of  $\beta$  that reflects the covariance of total return with market return. It is far more difficult to derive the equivalent cost of capital standards for individual activity. Most companies with several businesses have only one capital structure that delivers funds for each activity. Therefore, capital can not be divided into different risk categories based on an individual cost of capital. This would only be possible if these divisions were autonomous companies whose securities were traded on the stock exchange.

The approach most commonly used in such situations is to identify a series of cost-substitute capital, based on side-by-side comparisons of independent companies, if at all possible. In this way, a set of standards for multibusiness companies can be developed so that the risk category approaches monobusiness companies.

It is obvious that the distribution of capital in several businesses is much more complex than the management's practical task of comparing firms that have different standards. Corporate governance must be very careful to create large funding for each subdivision that matches the desired corporate strategic focus.

The foreseeable outcome of such an approach is the dilemma whether to abandon a high return (and higher risk) project in a sector that is generally weak, favoring another option with less return (and less risk) in Another category. This problem must be resolved by the management board, where the strategic direction of the company is being developed and monitored. The main purpose of the management is to adjust the company's overall capital portfolio to the expectations of the shareholders so that the amount will meet or exceed the corporate weighted cost of capital.

The cost of capital can be used to determine whether individual business divisions in a diversified company contribute or derive value from the shares. The objective is to examine past and future total cash flows in terms of a minimum standard of cash flow based on the cost of capital.

## KEY QUESTIONS

This is a summary of the main issues discussed in this article. We've tagged them to help you use the techniques discussed in financial theory and business practice techniques:

1. The company's specific costs of different types of indebtedness and preferred shares are

readily visible in tax for tax purposes but are difficult to measure in the second cost associated with debt implementation, servicing, credit rating, and market assessment.

2. Determining the value of equity relates to risk / reward expectations in the financial markets, as costs must be expressed in a way that corresponds to economic returns.

3. Revenue and dividend models suffer from variability of conditions (which may change their results) as well as from conceptual deficiencies.

4. The conceptual link created by modern financial theory between the general expectations of the financial markets and the value of the company's capital securities remains only an approximate amount based on simplistic assumptions.

5. The use of the company's specific risk factor (beta) for the attitude of the average return remains a valid theoretical concept, but the definition and measurement of this factor are open to discussion and continue to cause practical problems.

6. The development of a weighted cost of capital raises a number of questions, not only about the elements of the different prices but also about the weight used and the measurement of the additional funding.

7. The use of a weighted cost of capital to establish returns on capital investment is conceptually useful for projects within the normal range of risk, but these measures may need to be changed for business investments with different risk

8. The theory of finance continues to develop, but as the ideas generated are presented and changed in the course of the process, fragile links between data and sources have to be created to make both application more practical and understandable And feasible.

9. The purpose of analytical approaches to assessing capital investment is only a part of the important decisions that management should adopt. Individual and group attitudes, preferences and solutions expect a significant impact on interpretation and action in the areas of investment, management and financing.

10. The accuracy to be applied when calculating economic indicators such as cost of equity or net present value should be moderate and supported by knowledge, data and assumptions as they may be subject to a wide range of errors.

## SUMMARY

In this article, we highlighted the reasons for determining the cost of different forms of financing as a contribution to making different financial decisions. We have found that the

specific price of debt - short and long-term - should be determined relatively easily, given the nature of contracts to be signed. The same applies to preferred shares. We also found that the nature of debt obligations and preferential shares also have many other considerations regarding debt servicing. Determining the cost of equity is a relatively difficult challenge because of the additional word that shareholders have, and because of their expectations of risk or return, which in turn reflects on the market valuation of the shares.

After discussing the techniques for calculating the cost of the three main types of financing, we have identified the theoretical and practical weighted cost of capital as a contribution to the investment analysis. Here, too, we have found that applying the weighted cost of capital as the minimum standard for discounting investment cash flows is influenced by the way in which business risk is addressed. At the same time, we have found that the relative weighted cost of capital is an acceptable measure around which to build a series of return standards that meet the company's investments and risks.

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