The Influence of Company's Capital Cost on Investment Decision

Dorina Emilia TOMA *

Abstract

This paper is aimed at highlighting the importance of the cost of capital as a discount rate of investment in making an investment decision in the ROMNAV Brăila company. This study carefully puts forward the existence of four possible cases to which companies may belong: unlevered and investments to maintain the productive capacity will be made; indebted and investments to maintain the productive capacity will be made; unlevered and new investments will be undertaken and indebted and new investments will be undertaken. The results of the study show that the average cost of capital is higher when the company turns to debt; the market value of the company is higher when it is indebted and new investments will be made and the cost of capital can be used as a discount rate of the company assessment.

Keywords:
Opportunity cost of capital, Investment, Rate of return, Weighted average cost of capital, Discount rate of an investment

1. Introduction

The making new investments or even maintenance investments in various fields led to some beneficial developments and changes. For investors, it is of paramount importance to find out the answers to a series of questions including: "How much should I invest?" and "What material benefits can be obtained from such an investment?". The discount rate of an investment project with a risk that is equal to the risk of the enterprise and funded within the capital structure of the company (having the same leverage ratio) is equal to the cost of the capital in that very same risk class.

Sooner or later, every company want to have a resource that could create, over time, a financial comfort or that would confer it an advantage in front of its competitors. Thus, investments appear as a category of expenditure which will influence most the company’s future, i.e. by them depend the raising and improvement of the productive potential of the enterprise or the emergence of new production capacities in a certain branch in the economy.

Toma M. & Alexandru F. (2003) mentions that the investment decision is a part of the general decision system of the enterprise. It represents not only an immobilization of capital, but also the placement of some useful activity in a particular area of the market, the employment of a certain quantity of natural resources, both human and monetary, or the initiating and maintaining of relationships with companies acting in related industries, whose turnover is thus positively influenced.

The entire investment process is a complex economic process that involves, in most cases, a mix of financial, human and material resources. Capital budgeting in an investment project made without a prior analysis of the effectiveness of such a decision may result in partial or total loss of the invested capital. Therefore, calculating the cost of the capital becomes important in order to achieve great effects with minimal effort.

The cost of financing is one of the evaluation criteria of the discount rate required for the selection the investment project. For this reason, we should not invest in a project if the return on assets is less than the cost of the resources used to finance it. This cost is known as the cost of capital and it sets the weighted average cost of different funding sources available to the company.

The cost of the capital seen as a hope of remuneration of equity investors reflects, in fact, the market value of the company. The net cash flows arising from company are used for paying the „suppliers” of capital. Creditors have priority in terms of remuneration, since their fixed interest is paid first. Shareholders will be paid according to „the rest principle”, with what remain from the difference between net cash flows and the interest paid to creditors, i.e. the net profit (Stancu, 2003).
Stancu I. (2003) considers that the discount rate of an investment project \( (k_{\text{inv}}) \), which has a risk equal to the risk of the company and which is financed within the capital structure of the company (with the same leverage ratio), is equal to the weighted average cost of the capital from that class of risk \( (k) \).

The defining of concepts such as „investment” and „cost of capital”, the investment classification based on numerous criteria, the analysis of capital components or that of the financial elements of an investment as well as the optimization of capital structure have represented, for many years now, subjects of numerous scientific papers, articles and studies both in Romania and internationally: Toma & Alexandru (2003), Adochitei (2000), Bărbuță-Mișu (2009), Onofrei (2004), Românu & Vasilescu (1997), Jorgenson (1996), Tinbergen (1939), Helfert (2006) etc.

Many authors support the idea that cost is one of the best references in the choice of the discount rate for investment projects that have the same operational and financial risk that the enterprise has.

The discount rate of an investment project with a risk equal to the risk of the enterprise and funded within the capital structure of the company (having the same leverage ratio) is equal to the cost of the capital in the respective class of risk.

Under the given circumstances, the paper aim is finding out the opportunity cost (as a discount rate) of ROMNAV Brăila company in the following cases:

a) making of an investment in order to maintain the productive capacity, financed entirely by equity;

b) making of an investment to maintain the productive capacity, financed by equity and loans;

c) making of a new investment, fully financed by equity;

d) making of a new investment, financed by equity and loans.

2. Literature review

The concept of investment can be considered in both a broader and a narrower sense (Adochitei, 2000) as follows:

• More broadly speaking, the concept of investment includes all costs or allocations of funds from which incomes are expected to be obtained in future periods of time.

• In a narrower sense, the term of investment denotes expenses made in order to obtain fixed assets, i.e. the widening, upgrading, construction, reconstruction and purchase of physical assets such as machinery, equipment, buildings and other working tools (Bărbuță-Mișu, 2009).

The investment concept can be defined by taking into account several aspects, namely: accounting, economics, finance, legal and psychological (Onofrei, 2004).

In an accounting sense, investments appear as amounts of money spent for the purpose of producing lasting goods.

The economic dimension of the investment includes all consumption of resources that are currently made with the hope of obtaining future economic effects staggered over time and which are higher than the initial outlay of resources (Român & Vasilescu, 1997).

In a financial sense, investments appear as giving away present and positive sums of money in the hope of obtaining future higher but probable incomes, for instance: building a plant to increase production, acquiring a patent for the manufacture of new products, etc.

From a legal point of view, investments cover the purchasing or ownership of any item that can be the object of the property right, as elements of heritage, such as: urban and rural households, productive equipment, securities, vehicles etc.

From a psychological aspect, the investments show the intention of an individual or a company to invest, which leads to a delay of consumption over time.

The theory of investments in their own modern sense was founded at the beginning of the last century, since a framework regarding the outlining of factors impacting investment decisions in light of the investment model was needed.

The first theory regarding the investment decision was J.M. Clark’s (1917) accelerator theory. J.M. Clark found that only the future level of the turnover has impact on investment decisions. The flexible accelerator model - as a general form of the old model of „the rigid accelerator” \( I = a (Q_t - Q_{t-1}) \) - adopts the idea of a gradual adjustment of the level of investments: the more that the difference between the volume of existing assets and the desired one is higher, the more the rate of investment of the firm shall increase. This approach, initiated by H.B. Chenery (1952) and by L.M. Koyck (1954), aims to determine the desired level of long-term investments.

Subsequently, numerous theories that differ in terms of considered elements with an impact on investment decisions were developed. In subsequent studies conducted by Chenery and Koyck, the desired investment level was considered to be proportional to the obtainable output, hence showing similarities with the rigid accelerator model formulated by Clark (Jorgenson, 1996). Another theory, known as the capacity utilization rule, was thus outlined. In this context it was noted that, as a rule, higher levels of investment spending are associated with higher predictable values of the turnover compared to the current period.

The liquidity theory, as an alternative to Clark’s rigid accelerator, argues that the desired level of investment is based on either the current or foreseeable profit, or on levels of capital costs. In this framework,
J. Tinbergen (1938) argues his point of view by supporting the idea that *already accomplished profits can be a good measure of the hoped future ones* and that *affirming that an investment is driven by hoped profits is almost a tautology*. He would later conclude that *fluctuations in investment spending are primarily determined by variations in profits in recent months*, based on statistical observations made on the example of companies from different industrial groups in the United States.

In the last four decades, a new theory, known as the *conventional neoclassical theory of investment*, based on two equivalent approaches, has been developed. One such approach frames the view of D. Jorgenson (1963), in which the desired investment level of the company can be found by using the equality between its utilization cost and the marginal product. The second approach is that of J. Tobin (1969), which is focused on the ratio between the market value of a supplementary investment monetary unit and its replacement cost.

By means of the *options theory in investment decisions*, one might admit that making investments turns off the value of a call option to be deferred, option which has a positive value only when market prices are uncertain. In this context, the value of the lost option is a component of the opportunity costs of the investment. According to the \( q \) variant of theory, the investment threshold is situated where \( q \) is greater than \( I \), including the value that maintains opened the call option to invest (Diaconu, 2008).

The theoretical framework listed above outlines an environment where companies invest without necessarily surprising all the aspects that accompany the adoption of the investment decision. Equally difficult is the capturing, in only one theoretical model, of all factors impacting the financial investment decision specific to each company.

In the decision-making process involving investments, one can find financial components that are found as both elements of effort and effect of investments. These components, which are useful in the evaluation of investment projects, are as follows: investment expenditures, the lifespan of an investment, future financial-monetary flows of investments, the residual value and the discount rate.

*The future financial-monetary flows of investments* are expected to be achieved by exploiting the investment. Capital flows are of three types:

- **the initial investment** also known as the existing net cash flow at the beginning of the investment project. The initial investment includes also investment expenditures;
- **the operating cash flow** consists of net cash flow generated from operating activities and it includes both profit and amortization;
- **the terminal cash flow**, which is the net cash flow, either positive or negative, which can be found at the end of the project.

Discounting calculations, *by the discount rate*, enable the comparison between financial variables representing both investment costs and future cash flow values obtainable from operating activities. Thus, discount rate renders it possible for us to make appreciations on investment opportunities.

In this situation, it is necessary to generate a return on investment at least equal to the costs of committed funds. The cost of capital thus becomes the discount rate, more specifically the weighted average cost of the different sources of funding.

For a company with only one type of activity, whose risk characteristics are extremely well defined, the weighted average cost of the capital can be used as a discount rate in order to make a classification of investment projects in a descending order based on their attractiveness. The implicit assumption is that the company can finance all of the projects assumed at the same level of the additional cost, without the interference of any notable change in the capital structure of the company.

Under these conditions, the weighted average cost of the capital is an acceptable benchmarking standard of investment projects, because of the fact that the risk premium, the share of new capital raised and the extent of the risks involved in the investment project, are all comparable. But when some of the above mentioned variables do change, the weighted average cost of capital and its utilization must also be altered (Herfert, 2006).

Theoretically speaking, using a discount rate that is significantly higher than the cost of capital may indeed generate a loss of opportunity, since all potential projects generating value to shareholders may be rejected. In practice, it may still be prudent to include a margin of error by increasing by a few points the cost of capital before using it as a discount rate.

### 3. Methodology

The purpose of this paper is to demonstrate both that the cost of capital can be considered a discount rate of an investment, and the importance of the cost of capital in adopting a decision to invest in a certain enterprise.

ROMNAV S. A. Braila is a Romanian company specialized in river transportation, which operates on the Danube, including inner channels of the Danube and the Constanța harbour. If one were to analyze this company during the years 2008 - 2012, one could see that each financial year ended with obtaining a profit and that the company has both long term and short term debts.

In the following calculations, we have used not only the financial data of ROMNAV S.A. Brăila company during 2008 - 2012, but also the assumption that both debts and the economic growth at the rate \( g \)
are constant on an unlimited period of time (an hypothesis that is difficult to be accepted even on an efficient
financial market).

In the present study, we have made an estimate of the effect of economic growth and leverage on the
cost of capital in order to be then able to determine the discount rate of the analysed investment \( k_{inv} \) by
means of applying the following formula sets specific to each case (Stana, 2006):

**Case 1. The company is unlevered (U) and investments to maintain the productive capacity will be made \( g = 0 \)**

The lack of new investments implicitly assumes the existence of investments made in order to
maintain the production and sales capacity, investments that are funded entirely out of depreciation:
\[
g = 0 \Rightarrow FA_1 = FA_0 \Rightarrow \Delta FA_0 = D_1 \text{ and } \Delta CA_n = 0, \]
where:
- \( FA_0 \) = fixed assets at the beginning of the year;
- \( FA_1 \) = fixed assets at the end of the year;
- \( D_1 \) = annual depreciation of fixed assets;
- \( \Delta CA_n \) = net current assets.

The initial value of the unlevered company \( (V_0^U) \) shall be equal to the accounting value (total assets).
Considering the given circumstances, all net profits are distributed as dividends to shareholders. On
an indefinite period of time \( (n \to \infty) \) and with constant annual dividends \( (g = 0) \), the cost of equity \( (k_c) \), by
means of using the Gordon & Shapiro model, is estimated using the following relationship:
\[
k_c = \frac{Dv_1}{P_0} + g = \frac{NP_1}{P_0}, \]
where:
- \( Dv_1 = NP_1 = \) the dividend is equal to the net profit of the current year;
- \( P_0 = \) the purchase price (on the stock exchange market) of company shares (income stocks).

**Case 2. The company is indebted (L) and investments to maintain the productive capacity will be made \( g = 0 \)**

In this case, the cost of equity is determined based on the net profit after tax. So, the cost of debt must
also be influenced by the tax savings \( (1 - \tau) \). The company’s cost of capital \( (k_L) \) is calculated as weighted
arithmetic average of the specific costs of the two sources: equity and borrowed capital. In the case of
indebted company the cost of capital \( (k_L) \) will be:
\[
k_L = k_c \times \frac{E}{E + D} + k_d \times (1 - \tau) \times \frac{D}{E + D}, \]
where:
- \( E \) = equity;
- \( D \) = total debts;
- \( \tau \) = tax rate;
- \( k_d \) = cost of debt.

Also, the cost of capital can be written as:
\[
k_L = k_U \left( 1 - \frac{D}{V_0^L} \times \tau \right),
\]
If we talk of businesses with a growth equal to 0 \( (i.e. g = 0) \), maintenance investments to be carried
out will have net present value \( NPV = 0 \) and internal rate of return \( IRR = k_{inv} \). Then, to the enterprise value,
one has also to add the present value of tax savings (savings due to the deductibility of interest from taxable
income):
\[
V_0^L = V_0^U + V_0^T_s, \quad \text{where: } V_0^T_s = \frac{D \times i_r \times \tau}{k_d}, \quad \text{with } i_r = k_d
\]
\( i_r \) = interest rate.

**Case 3. The company is unlevered (U) and new investments will be undertaken \( g > 0 \)**

Because we are talking about new investments, the company records a growth rate \( (g) \) which is self-
financed and thus the company is able to pay its shareholders both dividends and growth-stocks.
Consequently, the composition of the equity costs will also include, according to the Gordon &
Shapiro model, two more elements: the dividend yield and the annual growth rate:
\[
k_c = \frac{Dv_1}{P_0} + g, \quad \text{where: }
Dv_1 = Dv_0 (1 + g);
\]
\[ g = \text{ROE} \times b = \text{constant}; \ n \to \infty; \]

ROE = rate of return on equity;

b = retention ratio of net profit for the self-financing of new investments.

The value of the unlevered company is determined as follows:

\[
V_0 = \frac{NP^U_{g=0}}{k_{Ug=0}^U} + \frac{NP^U_{g=0} \times b \times \left( \frac{\text{ROE}^U_{g=0}}{k_{Ug=0}^U} - 1 \right)}{k_{Ug=0}^U - g} = V_{0g=0}^U + V_0^{GO}.
\]

**Case 4. The company is indebted (L) and new investments will be undertaken (g > 0)**

The growth rate \( g \) is a sustainable rate for Growth Stocks type businesses, with a debt ratio (L) (Higgins, 1981):

\[
k_T^{L: g=0} = k_c^{L: g=0} \times \frac{E}{E+D} + k_d \times (1-\tau) \times \frac{D}{E+D} = k_c^{L: g=0} \times \frac{E}{TA} + k_d \times (1-\tau) \times \frac{D}{TA},
\]

where:

\[
k_c^{L: g=0} = \frac{NB^L_{g=0}}{E^L_{g=0}}.
\]

TA = total assets or total capital requirement.

The following components shall increase with the \( g \) rate: total capital requirement - TA = TA_0(1+g); E = E_0(1+g) - the increase self-financed through the reinvested net income, D = D_0(1+g) - the growth funded through new loans at the same cost, \( k_d = \text{constant} \).

As such, we have the cost of capital \( k_T = k_c + (k_c - k_d) \times \frac{D}{E} \times (1-\tau) \) and the value of leveraged company \( V_0^L = V_0^U + V_0^{Ts} + V_0^{GO} \).

4. Comparative analysis of the influence of the cost of the capital on the investment decision

In this section we will analyse the influence of the cost of the capital on the investment decision, using those four cases presented in methodology.

**Case 1. The company is unlevered (U) and investments to maintain the productive capacity will be made (g = 0)**

In this situation, ROMNAV Brăila company has an initial value \( V_0 = 5,458,114 \) euro, equal to the book value (TA_0), and consistently distributes all the net profit throughout the year by means of \( Dv_1 = 882,671 \) euro. This should have a cost of owners' equity \( k_c = 16,17\% \):

\[
k_c = \frac{882,671}{5,458,114} + 0 = 0.1617; \ PER = \frac{5,458,114}{882,671} = 6.18.
\]

In Table 1 is presented the calculation of the cost of equity in the case of unlevered company that maintain the productive capacity.

<table>
<thead>
<tr>
<th>Table 1. Income Stocks (U; g = 0)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assets</strong></td>
</tr>
<tr>
<td>Fixed assets</td>
</tr>
<tr>
<td>Net current assets</td>
</tr>
<tr>
<td><strong>Total assets (TA)</strong></td>
</tr>
</tbody>
</table>

* values was expressed in euro using an exchange rate available at 31st December 2012, 1 EUR = 4.4287 lei.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>Euro</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>6,161,711</td>
<td>( k^U = 16,17% )</td>
<td>g = 0</td>
</tr>
<tr>
<td>Variable costs (75%)</td>
<td>2,547,929</td>
<td>( V_0^U = 5,458,114 )</td>
<td>( V_0^U\text{PER} = 5,458,114 )</td>
</tr>
<tr>
<td>Fixed costs</td>
<td>2,158,439</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depreciation</td>
<td>388,183</td>
<td>k = 16,17%</td>
<td></td>
</tr>
<tr>
<td>Interests (8.6%)</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profits tax (16%)</td>
<td>184,489</td>
<td>ROA = 16,17%</td>
<td>ROE = 16,17%</td>
</tr>
<tr>
<td>Net profit</td>
<td>882,671</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Investments made with the purpose of sustaining capital capacity determine a risk equal to the risk of the company's equity: \( k_{\text{inv}} = k_c = 16.17\% \). If we consider the fact that \( g = 0 \), the internal rate of return on the maintenance investment (IRR\text{inv}) is equal to their discount rate of investments (\( k_{\text{inv}} \)) and therefore net present value (NPV) is zero: \( \text{IRR}_{\text{inv}} = k_{\text{inv}} \Rightarrow \text{NPV}_{\text{inv}} = 0 \).

**Case 2. The company is indebted (L) and investments to maintain the productive capacity will be made \( (g = 0) \)**

In this case, ROMNAV Brăila company is indebted with 139,766 euro, which will change slightly the problem in the first case. If the case when the company is borrowed and with a book value of 5,458,114 euro, there is a high market value because of the present value of the savings on corporation tax, as a result of the deductible interest \( (D \times \tau) \), and respectively \( V_0^{\ell} = 5,458,114 + 139,766 \times 0.16 = 5,480,477 \) euro. If we consider that the amount of debt will remain constant \( (D = 139,766 \text{ euro}) \), the tax savings will determine the increase in equity at: \( V_0^{\ell,c} = 5,318,348 + 139,766 \times 0.16 = 5,340,711 \) euro.

As a result, the share of equity will now be 97.45% and 2.55% of loans. Risk-free interest rate of 8.6%, cost of equity will be 16.34%, with 0.17% premium to leverage of 0.0262. The calculation of cost of equity for leveraged company will be:

\[
k_L = 16.17\% + (16.17\% - 8.6\%) \times (1 - 0.16) \times 0.0262 = 16.17\% + 0.17\% = 16.34\%.
\]

Table 2 presents the calculation of the cost of equity in the case of levered company that maintain the productive capacity.

**Table 2. Income Stocks \((L; g = 0)\)**

<table>
<thead>
<tr>
<th>Assets</th>
<th>2012*</th>
<th>Liabilities</th>
<th>2012*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed assets</td>
<td>4,682,954</td>
<td>Owners’ equity</td>
<td>5,318,348</td>
</tr>
<tr>
<td>Net current assets</td>
<td>775,160</td>
<td>Liabilities, amounts payable in a period above 1 year (long term)</td>
<td>139,766</td>
</tr>
<tr>
<td>Total assets (TA)</td>
<td>5,458,114</td>
<td><strong>Total liabilities</strong></td>
<td>5,458,114</td>
</tr>
<tr>
<td>Sales</td>
<td>6,161,711</td>
<td>( k_U^{\ell} = 16.17% ) ( g = 0 )</td>
<td></td>
</tr>
<tr>
<td>Variable costs (75%)</td>
<td>2,547,929</td>
<td>( V_0^{\ell,U} = 5,458,114 )</td>
<td></td>
</tr>
<tr>
<td>Fixed costs</td>
<td>2,158,439</td>
<td>( V_0^{\ell,c} = 5,318,348 )</td>
<td></td>
</tr>
<tr>
<td>Depreciation</td>
<td>388,183</td>
<td>( V_0^{\ell} = 5,480,477 )</td>
<td>( V_0^{\ell,c} = 5,340,711 )</td>
</tr>
<tr>
<td>Interests (8.6%)</td>
<td>10,089</td>
<td>( k_U^{\ell} = 16.11% )</td>
<td>( k_c = 16.34% )</td>
</tr>
<tr>
<td>Profits tax (16%)</td>
<td>184,489</td>
<td>( k_U^{\ell} = 16.11% )</td>
<td>( k_c = 16.34% )</td>
</tr>
<tr>
<td>Net profit</td>
<td>872,582</td>
<td>( \text{ROA} = 16.17% )</td>
<td>( \text{ROE} = 16.34% )</td>
</tr>
</tbody>
</table>

At the level of these specific costs of purchasing, the weighted average cost of the capital is \( k_T = 16.11\% \), determined as:

\[
k_T = 16.34\% \times \frac{5,318,348}{5,458,114} + 0.086\% \times (1 - 0.16) \times \frac{139,766}{5,458,114} = 16.11\%.
\]

The cost of depreciation for the financing of the maintenance investments is therefore \( k_{\text{inv}} = 16.11\% \). Depreciation, regarded as a source of funding, has the same origin structure of the capital (97.45% equity and 2.55% debts), because it concerns the fixed assets acquired from both sources of capital. Hence its cost is the weighted average cost. For the debts of 139,766 euro, which remain constant each year, the company consistently pays interest amounting to 10.089 euro annually. The net profit in the amount of 872,582 euro is fully and consistently distributed as dividends annually.

**Case 3. The company is unlevered \((U)\) and new investments will be undertaken \((g > 0)\)**

Under these conditions, the company has an initial value \( V_0 = 5,458,114 \) euro and 100% owner's equity. It distributes dividends annually and constantly at a rate of 2/3 of the net profit, and one third of the profit is retained to capitalize on growth opportunities: \( \text{ROE} = 17.12\% > 16.17\% = k \). Following the effective investment of retained profit, the value of the enterprise will increase with the present value of growth opportunities (table 3):
Table 3. Income Stocks (U; g φ 0)

<table>
<thead>
<tr>
<th>Assets</th>
<th>2012*</th>
<th>Liabilities</th>
<th>2012*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non- current assets</td>
<td>4,682,954</td>
<td>Owners' equity</td>
<td>5,458,114</td>
</tr>
<tr>
<td>Net current assets</td>
<td>775,160</td>
<td>Liabilities, amounts payable in a period above 1 year (long term)</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total assets (TA)</strong></td>
<td>5,458,114</td>
<td><strong>Total liabilities</strong></td>
<td>5,458,114</td>
</tr>
</tbody>
</table>

| Sales                      | 6,867,803 | **k^u = 16.17%**                                | g = 5% |
| Variable costs (75%)       | 3,209,829 | V_0^u = 5,458,114                               | V_0^u_L = 5,458,114 |
| Fixed costs                | 2,158,439 |                                               |       |
| Depreciation               | 388,183   | V_0^u_L = 5,632,375                             | V_0^u_Lc = 5,632,375 |
| Interests (8.6%)           | -        |                                               |       |
| Profits tax (16%)          | 177,054   | **k^u_L = 16.17%**                              | k^u_Lc = 16.17% |
| Net profit                 | 934,298   | **k = 16.17%**                                  | ROA = 17.12% |
| Dividends                  | -        |                                               |       |
| d = 0.67                   |          |                                               |       |
| Reinvested profit          | -        |                                               |       |
| b = 0.33                   |          |                                               |       |

Return on equity is determined: \( ROE = \frac{934,298}{5,458,114} = 17.12\% \) and the value of the company unlevered is:

\[
V_0 = 5,458,114 + 174,261 = 5,632,375 \text{ euro.}
\]

As a result of growth opportunities, the return on equity (\( ROE = 17.12\% \)) is higher than the cost of equity (\( k_c = 16.17\% \)). Reinvested earnings in the first year \( (934,298 \times 1/3 = 311,433) \) to \( ROE = 17.12\% \) reported to \( k_{inv} = 16.17\% \) will lead to \( NPV_{inv} = 934,298 \times 1/3 \times (0.17/0.16 - 1) = 19,465 \) with a constant growth rate, \( g = 0.05 \). The present value of this capital growth is \( 19,465 / (0.1617 - 0.05) = 174,261 \text{ euro.} \)

This realized capital gain is added to the current value of the company, in the case of a previous growth equal to zero (in the form of \( 5,458,114 \text{ euro} \)) and which would obtain the same net profit.

\[
V_0 = 5,458,114 + 174,261 = 5,632,375 \text{ euro.}
\]

The cost of the unlevered company's equity with a growth rate \( g > 0 \) (Growth Stocks) is thus equal to the cost of an type Income Stocks enterprise plus the growth rate \( g = 5\%: \)

\[
k_c = \frac{609,765}{5,458,114} + 0.05 = 0.117 + 0.05 = 16.17\% .
\]

**Case 4. The company is indebted (L) and new investments will be undertaken (g > 0)**

This time ROMNAV Brăila company is indebted with the same value as in case 2, but it also has growth opportunities \( (ROE > k) \) that it constantly capitalizes on with a growth rate \( g = 5.58\% \).

Hence, \( k^L_{g \neq 0} = \frac{877,611}{5,369,163} \times \frac{5,369,163}{5,508,929} + 12\% \times (1 - 0.16) \times \frac{139,766}{5,508,929} = 16.18\% \) (table 4).

Table 4. Growth Stocks (L; g φ 0)

<table>
<thead>
<tr>
<th>Assets</th>
<th>2012*</th>
<th>Liabilities</th>
<th>2012*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non- current assets</td>
<td>4,682,954</td>
<td>Owners' equity</td>
<td>5,318,348</td>
</tr>
<tr>
<td>Net current assets</td>
<td>775,160</td>
<td>Liabilities, amounts payable in a period above 1 year (TL)</td>
<td>139,766</td>
</tr>
<tr>
<td><strong>Total assets (TA)</strong></td>
<td>5,458,114</td>
<td><strong>Total liabilities</strong></td>
<td>5,458,114</td>
</tr>
</tbody>
</table>

| Sales                      | 6,322,397 | **k^u = 16.17%**                                | g = 5.58% |
| Variable costs (75%)       | 2,720,911 | V_0^u = 5,458,114                               | V_0^u_L = 5,318,348 |
| Fixed costs                | 2,158,439 |                                               |       |
Depreciation 388,183 \( V_0^L = 5,480,477 \) \( V_0^{Lc} = 5,340,711 \)  
Interests (8.6\%) 10,089 \( k^L = 16.11\% \) \( k^{Lc} = 16.34\% \)  
Profits tax (16\%) 167,164  
Net profit 877,611 \( V_0^L = 5,487,156 \) \( V_0^{Lc} = 5,347,390 \)  
Dividends  
\( d = 0.66667 \) 585,074 \( V_0^{Lg} = 5,509,519 \) \( V_0^{Lgc} = 5,369,753 \)  
Reinvested profit  
\( b = 0.33333 \) 292,537 \( k^L = 16.18\% \) \( k^{Lg} = 16.35\% \)  

The value of the leveraged company that makes new investments and benefit of growth opportunities will be:

\[
V_{0g0}^L = 5,458,114 + 22,363 + 29,042 = 5,509,519 \text{ euro.}
\]

By taking into account the reinvested net profit amounting to 292,537 euro, the company ROMNAV will have a market value of equity of:

\[
V_{0c} = 5,369,753 = 5,318,348 + 22,363 + 29,042 = 5,369,753 \text{ (the value of equity for } g = 0, \text{ to which one adds the present value of tax savings from interest and the present value of growth opportunities).}
\]

Hence, the value of the company’s equity in this case has a favourable influence from debt and another one from the capitalization of growth opportunities.

5. Conclusions

For evaluating the effectiveness of an investment, not only the estimating of future cash flows from the operation of that capital investment is essential, but also the issue of estimating the cost of capital. By analyzing the results obtained in the four cases where the ROMNAV S.A. Brăila company can find it self in, it has been proved that:

- the average cost of capital is higher when the company turns to debt (the firm is indebted in cases 2 and 4);
- the market value of the ROMNAV Brăila company is higher when it is indebted and new investments will be made (to its present value, we add the present worth of savings from tax interest plus the present value of growth opportunities);
- the cost of capital can be used as a discount rate of the value the company.

The cost of capital is the minimum required return rate because of capital bearers, regardless of whether they are creditors or shareholders. In other words, the cost of the capital is the financial burden that the company has to take in order to supply its capital. For the bearers of capital, this effort is equal to the return required in order to place their capital.

If this cost is very clear, then it can lead to an investment decision that may prove effective or, on the contrary, to the cancellation of some investment decisions if the investment will prove ineffective.

References