ANALYSIS ON THE CAUSALITY RELATIONSHIP BETWEEN INVESTMENTS AND THE CAPITAL'S MARGINAL COST

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Abstract
Capital's cost is the result of two kinds of behaviours, namely the entrepreneur's behaviour, on the one hand, and the investor's behaviour. These two types of behaviours have a common background, namely maximizing the value of the business entity. The business entity itself can be considered as the very expression of the financing costs which are part of the optimization process of its financial strategy.The diversity of the investment options requires the assignment of those financial resources which are based on estimating the entity's value which refers to the conversion of the future incomes into the present turnover of the business as such. Thus, there is an occasional cost from the point of view of the investors, whereas for the users, there is an average cost involved due to the fact that one needs to take into account the existence of the financial structure itself which is responsible for the existence of both the equity and the loan capital.

Key words: *capital's cost, investments, marginal cost; profitability, investors, financial structure, loan capital, financing decision*

JEL Classification: *B21, D24, D46, G31, G33, G41*

I. INTRODUCTION

The present study focusses on the following objectives: the relationship between investments and the capital's marginal cost; the influence of the capital's marginal cost on the business entity's value, the issue of the capital's cost. In reaching the above mentioned objectives, we have made use of certain set of methodological tools which comprises the descriptive research, the critical comparative analysis, the synthesis, the deduction and the projection.

Generally speaking, the capital, including the business entity's capital, is made up of several components which are valued at a certain price. In other words, the investments' financing resources are, in fact, the investor's ongoing capital, whereas the cost estimation represents one of the components of the investment and financing decision.

The capital's cost represents a key factor in establishing the optimal structure of the ongoing capitals. Moreover, it stands for the key factor in the stockholders' giving up part of their share for current consumption and cost savings which are destined for being invested in hopes for a future higher consumption (Cocriş & Işan, 1995: 150). There are no actual free resources as such for which the capital cost estimation represents a necessity in itself. Consequently, an estimation of the cost of the equity, of the loan capital, of the weighted average and marginal cost as well as of the public capital's cost needs to be done in order to highlight their impact on the social and economic development both on the micro and macroeconomic level.

The cost issue has become of an utmost importance for the business world due to three main reasons such as:

a) the maximization of the business entity's market value depends on the fact that managers need to cut all the inputs, thus the capital cost, too, whereas in order to lower the capital cost, managers need to be first and foremost able to estimate this kind of cost;

b) the managers of the finance departments need to do an estimate of the capital cost which will enable them to make accurate investment decisions;

c) several other decisons made by the finance departments, including those referring to the leasing, the buyout of the bonds, the revolving fund policy etc. are based on the estimation of the capital cost.

From both a technical and economic point of view, the assigned investments have led to the refinement of the business entities' technical basiș by allowing the increase of the product range in order to satisfy the internal and export demands. From a social point of view, investments ensure a better quality of the standard of living, the ease of the workload as well as the growth of the social performance. All these are possible as a result of the fact that through investments the mechanization, automation, robotization of the manufacturing processes, the upgrade of the existing machinery, much more sophisticated instruments of labour, the design of modern technologies, the

design and use of new, cheaper and lighter materials are possible. In terms of the national economy, investments play a key role in ensuring the modernization of the entire economic activity. It is a fundamental requirement in adjusting the technical and economic systems to the market economy. Investments provide the support for equipping the workplaces with high-performance machinery, for improving the technical processes, for ensuring the use of the society's material and labour resources by playing an important part in a country's economic and social development. The demand for investments depends on the capital's marginal efficiency and the level of the interest rate.

II.   CAPITAL'S MARGINAL COST

In a market-economy system, the decisions of both the manufacturers and the consumers are based on their predictions and expectations in terms of the other manufacturers and consumers, namely those predictions which refer to the reactions of those manufacturers and consumers in regards to the change of the manifestation of the economic phenomenon.

The reactions of both the manufacturer and the consumer are influenced by their own interest. Their behaviours are based on certain principles such as:
   a) *the rationality principle* which refers to the fact that both the manufacturer and the consumer do not come against their own interest;
   b) *the efficiency principle* according to which the target of each and every manufacturer or producer refers to the fact that the level of satisfaction as a result of taking on a risk needs to be higher than the sacrifice itself, in other words the final result needs to be higher than the effort which was needed by this action;
   c) *the optimality principle* refers to the fact that both the manufacturer and the consumer are able to maximize their advantages as the result of their efforts or are able to minimize their efforts in order to get a specific result.

The fringe approach is an economic concept which is a reaction to the classical economic liberalism according to which the modern market-economy represents the most efficient form of organization and operation of a civilized society's economy. The Englishman W. St. Jevons, the Austrian C. Manger and the Frenchman L. Walras were among the promotors of this concept. In spite of the fact that they worked independently, the three neoclassical liberal economists have reached similar theories and conclusions due to the fact that they have faced the same issue such as a better understanding of the market consumer's way of thinking and behaviour so that the business entities make the right decisions. In spite of the fact that there are different points of view regarding the number of factors (i.e. the technical progress natural resources etc.), most economists have analyzed two factors such as: the labour and the capital. On a short-term basis, there is one variable production factor – namely *the labour,* whereas all the other factors are variable ones on a long-term basis.

The higher the productivity of those two factors, the lower the production cost. Consequently, on a short-term basis when *the labour* represents a variable factor, its productivity is influenced by the law of the decreasing efficiency namely: "given the limited supply of the fixed factor as well as the lack of a techonolgical development, both the marginal and the average productivity of the variable factor are finally bound to decrease (thus the marginal and average costs rise) when the production itself increases" (Gavrilaş, 2007: 138).

A reasonable manufacturer will continue to use the variable factor for at least until he reaches the stage of the decreasing efficiency. He will then decide on the quantity of the factor to be used by balancing the marginal productivity and the factor's price. On a short-term basis, where both the labour and the capital are variable, the manufacturer is able to relax the decreasing efficiency by enhancing both the labour and the capital. First and foremost, he will have to optimize the capital/labour combination by balancing their weighted marginal efficiency with their costs. Secondly, he will focus on getting the minimum efficient production for which the average cost is the lowest on a long-term basis by equally increasing those two factors (i.e. the upward efficiency or economies of scale) (Stancu, 2008: 355). Apart from the efficient minimum production, the upward efficiency will remain the same thus the production methods corresponding to the minimum efficient production can be duplicated. Otherwise, since certain factors remain the same in terms of the quantity or quality, the business entity will save on the economies of scale as its return level will decrease while its average cost will increase on a long-term basis. By making certain adjustments to the factors and, thus, by substituting one factor to the other, it can lower the curb of the average cost on a long-term basis (i.e. the increasing efficiency substitutions) (Halpern, Weston & Brigham, 1998: 598-599).

Having in view the relationship between the capital's marginal cost and a business entity's current investment opportunities, we have identified certain basic concepts such as:
-    *on a short-term basis:*
      - total costs (i.e. the sum of the total fixed costs and of the total variable costs);

- fixed costs (i.e. the costs which do not vary according to the production level);
- variable costs (i.e. the costs which vary according to the production level);
- average fixed cost (i.e. the variable cost per product unit);
- total average cost (i.e. the total cost per product unit);
- marginal cost (i.e. the variation of the total cost as a result of the variation of the production level by one unit).

- *on a long-term basis:*
  - economies of scale (i.e. descending average costs corresponding to the growth of the production);
  - economies of scale (i.e. ascending costs based on the growth of the production);
  - profit's maximization (i.e. the manufacturer makes the highest possible profit when in terms of the production level the marginal cost and the marginal cashing are equal);
  - the marginal cashing (i.e. the variation of the total cashing as a result of the change of the sales volume by one unit).

Business entities will focus on initiating the most profitable investment projects and will start using that capital involving the lowest cost. The entity which is involved in several other less profitable investment projects is required (constrained by specific conditions) to make use of higher value capitals. As long as the efficiency ratio is higher than the bank interest, the business entity is constrained to make investments in order to face the competition and to secure its place on the market (Frischmann & Brett, 2012: 206). While the investments are being made and several other loans are granted, the efficiency ratio tends to decrease whereas the bank rate increases. This is a particular case when we witness an increase of the capital's marginal cost.

One needs to note the fact that a business entity can get a limited number of new funds with a constant cost ratio due to the fact that since that entity intends to get higher sums of money within a certain amount of time, the costs corresponding to several sources start rising and, consequently, the capital's weighted average cost for each new monetary unit will rise (Gordon & Shapiro, 1956). Thus, the capital cannot be gathered as a result of manufacturing unlimited quantities for a costant price.

The figure given below shows a comparative analysis of the capital's marginal cost and of the inverstment opportunities.
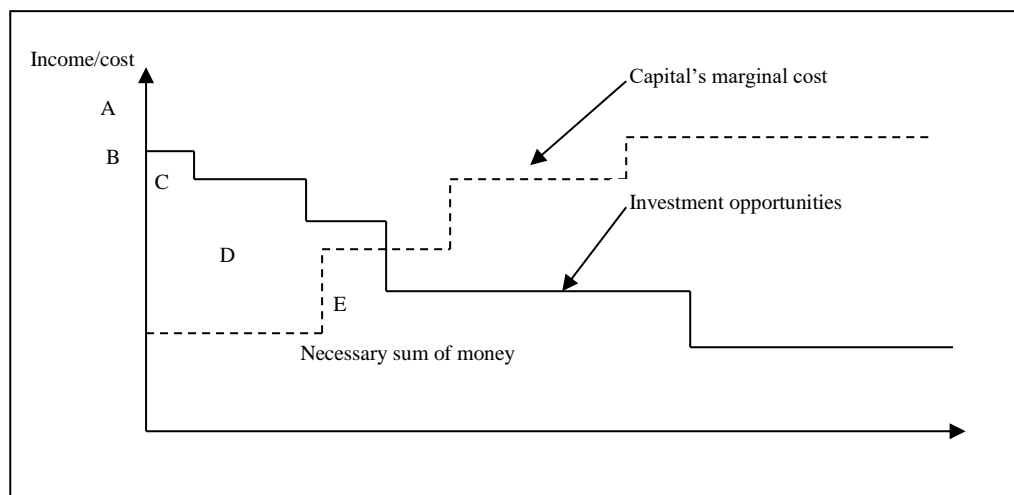

Figure 1 – Analysis of the capital's marginal cost and of the inverstment opportunities
Source: Eakins, 1999: 301

The capital's marginal cost (Berceanu, 2001: 302) indicates the capital's additional sum, while the investment opportunity indicates the available revenue for different investments. The business entity decides the on one of the opportunities. The shareholders'stake will increase only when the capital's cost is lower than the expected investment profit. The A,B,C projects are valid due to the fact that their revenue is higher than the capital's cost. The D and E projects are unacceptable due to the fact that the capital's cost exceeds the expected revenue. In the event the A and B projects are the only onest o be taken into account, we will make use of the capital's weighted average cost. In the event the business entity can take advantage of ceratin investment opportunities which require additional funds, an analysis of the marginal cost needs to be done. One needs to take into consideration the fact that the D project can be taken into account rather based on the capital's weighted average cost than from the point of view of the capital's marginal cost (Hogendorn, 2012: 407).

The investment's theory comprises certainn aspects (Todea, 2003: 125) pertaining to a dynamic behaviour

namely that type of behaviour which depends on the economic values manifesting in the future. There are two sources in terms of the dynamic behaviour. The first one refers to expectations. The expected equity stock depends on the estimated future production. Thus, the business entity projects its estimations on its ongoing production by taking into account the present production level. In their turn, the investments are adjusted to the changes which have occurred during the production stage. The second source refers to the adjustment delays. The delays in the production adjustment also refers to delayed investments in terms of changes in those variables affecting the expected equity stock.

This relationship is considered to be similar to the one manifesting between the expected equity stock and the cost for the capital use, yet having in view the existence of a delayed structure in terms of the addition of capital. The adjustment of the expected equity stock is not completely done during a single period of time, yet, as a rule, it is done gradually. The time distribution of the additional capital is caused by the capacity constraints from the capital goods industry, the business entities' hesitation in regards the growth of the expected revenue, the rise of the financial constraints and the expectations in terms of the fiscal and monetary policies.

The capital's marginal cost (Nistor, 2002: 282) reaches a critical point when the business entity's value rises. After this point, the purchase of capital is not recommended to be made. This threshold is set by the disparity which exists between the rate of return and the interest rate. When the rate of return is higher than the interest rate, the equity purchase for the public financing is beneficial, while the change of the relationship between those two rates fails to require the purchase of equity in the given circumstances.

The valid and practical aspects when taking into consideration the capital's marginal cost may refer to the following:

a) the instaces when business entities may face a capital deficit or surplus;

b) the awareness of the capital's cost in both instances in order to identify the lower limit of the investment's profitability for which the number of the stakeholders' shares can be increased.

III.   CONCLUSION

The present study focusses on the uniqueness of the economic goods, the consumer's way of thinking and behaviour on the market and the explanation of the way the market economy functions as such, as well as the mixture of the psychological analysis of the economic phenomena and the use of certain mathematical procedures (i.e. the incremental or external calculation, graphical representations etc.). The fringe definition derives from one of these procedures (i.e. the incremental or external calculation) and from considering the incremental usability as the key factor of the value theory.

The starting point in defining the marginal cost is the manufacturing function, namely the relationship which associates the quantity, the manufactured value with the one of those elements or factors which are needed in order to get this kind of production.

Due to the fact that both the capital and the labour cannot be fully substituted in order to maintain a constant level of the revenue, the constant addition of capital lowers the cost-profit relationship. As long as the entity combines more capital with less labour in order to get a certain amount of goods, the capital's marginal productivity decreases. In the present market economies, based on the right fiscal and monetary measures taken by communities, one can reduce the fluctuations and ensure the economy with a more stable role.These types of measures cannot neither fully eliminate the conjectural fluctuations. However, their objective is not to alleviate the magnitude of changes impacting on the prices. In terms of the development of a country's economy, investments play a key role in ensuring the modernization of the entire economy as a prerequisite of adjusting the economic and technical systems to the market economy.

Investments ensure the workplaces with high-tech machinery, the improvement of the technological processes, the development of the use of a society's source materials and labour which play an important part for a country's social and economic development.

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