Malkhaz Bakradze
Grigol Robakidze University

METHODOLOGY OF INVESTMENT ENVIRONMENT ASSESSMENT AND THE ROLE OF MODELLING OF COMPANY INVESTMENT IN ITS MANAGEMENT

Introduction

On January 27-31, 2010 in Davos (Switzerland) was held the World Economic Forum's 40th anniversary meeting, with the motto: "Improve the State of the World: Rethink, Redesign, and Rebuild."

On the opening day of the Forum Nikola Sarkozy stated: "Globalization has created such a world where everything has appeared in hands of financiers. Everything! And almost nothing - to working people. Entrepreneurs have found themselves in captivity of speculators who have created the system where gambling with other's money became a norm… Without interference of the state everything would have been destroyed and the system would have collapsed totally. After we said that "the market is always right", the globalization has been beyond the control. The market economy has no alternative but the capitalism and market economy can survive only if we reorganize it."

These words of the President of France, who is known for his right-wing tend, are the apparent evidence of the fact that the liberal doctrine of Adam Smith about the "invisible hand of the market" that provides the balancing and sustainability of economic development has been seriously questioned. In fact, on the order of day now is raised the issue on the role, importance of quality of interference of the state in the regulation and control of economic processes. The current political and financial elites have the opinion that the crisis will not be overcome in the nearest future and so far it may be coped only through colossal financial investments in the bank system and implementation of a number of state programs, or with participation of the state funds in various segments of economy that factually means the partial nationalization of those segments!!! This implies the bank and production business sectors, investment mechanism.

The Government of Georgia and "big business" have not yet understood a new reality that implies modernization of its investment policy and realistic perception of the situation in the capital market. Our article is devoted to consideration of these problems and we will try to outline the mainstreams in the sphere of analysis and development of investment environment, stimulation and attraction of domestic and foreign investments.

In general, based on the market principles, a private investor first of all makes capital investments for gaining profit. Hence, since the politico-economical situation in the country is unbalanced, it is hardly to expect long-term strategic investments in the Georgian economy. And without such investments rehabilitation of production, technological revival, creation of new working places or change of the social background, etc. is impossible.

There are two main indicators and premises to overcome the economical and financial crisis: stabilization of the rate of exchange of Georgian lari (not expansive but through improvement of the foreign trade balance) and reduction of the rate of interest. However, this will not provide the automated effect in kind of the increase of investments in production. In the first place this depends on the following factors:

1. Lack of qualification of enterprises, the potential investment beneficiaries, and their unreadiness to use the funds effectively because of poor management;
2. Unreadiness of investors to invest in the idle, non-refitted and non-reorganized enterprises. This, in its turn, is related to high risks (vulnerability of ownership right, poor payback because of poor management, etc.) The most problematic is the adequate assessment of such risks because of lack of transparency of financial standing of enterprises, problems with liquidity and investment activity.

The Role of Investment Policy in Overcoming of Crisis and Attainment of Economic Stability

In the current practice, the saving and investing are mainly implemented by different persons. However, once the situation was quite different. At present if a farmer spends a part of his time for drainage and melioration operations instead of cultivation of plants and cropping, he simultaneously saves and invests in his farm. He saves as he desists from consumption today in order to provide more consumption tomorrow. The amount of this saving is determined by the difference between his actual income and the funds spent for consumption. Simultaneously, he invests as improvement of the capital assets means net capital investment. On the example of a common farmer we can see not only the saving and investing but the matching of those objectives for what the farmer has implemented those processes in general. The farmer desists from the current consumption (saves) only for that reason that he wants to perform the drainage operations, i.e. to invest. If he was not able to invest, he would not even think to make savings.

In the modern economy the net investment is performed by industrial or trade organizations and, first of all, by corporations. However, if a corporation or a small enterprise has large-scale investment opportunities, its owners have objectively a wish to invest a great part of their income back. Therefore, the production savings rather depend on the production investments.

At the same time, various groups of population, individuals and households, make savings. A person can have various motives to make savings: to ensure a worthy old age or to save some money for future expenses (the annual leave or purchase of a car). He also can feel the instability of own status and save money for a rainy day. He can be driven with a desire to leave legacy to own children and grandchildren, etc. Whatever the motive which drives a person who makes saving will be, it is not often directly related to the possibility of direct investing. This takes place for a reason that in our everyday life the term "investment" always has not the definition it has in the economic concept. We refer the term "net investment", or capital formation to a thing which represents the net increment of the actual capital of the society (buildings, equipment, stock and supplies etc.). An average man refers to the investment when he buys a plot of land, circulating securities or another title. For an economist those are pure transfer operations. One man can invest in a thing where another man de-invests. The net investment takes place when a new real capital is created.

As it has been mentioned above, the actual investments are made mainly in the industrial and trade spheres. Their amount periodically varies and almost always is of cyclic nature. Such instable dynamics is explained by the fact that the investment opportunities depend on new products, new territories and borders, new resources, new population and increasing production level and revenues. Investments depend on the dynamics and hardly formalized elements of the extended public system: the levels of machinery and technologies, politics, optimistic and pessimistic forecasts of development, state expenses and taxes, legal environment, etc. Investments are financed from internal and external sources. The internal sources include: equity of enterprises and public savings; budget appropriations (from the central and local budgets) and long-term credits and loans (governmental and commercial). The external sources are: foreign private direct and portfolio investments, foreign credits and loans (including those secured by the state).

The analysis of investment process in a new economic system is not possible without the determination of the main point of the investment. Despite many researches, no universal approach has been developed in this matter.

While defining investments, Keynes highlights their qualitative properties and dual nature. In his opinion, the investment, on the one side expresses the amount of income accumulated for the purpose of savings or determines the potential investment demand, and on the other side, it represents the expenditure which determines a significant growth of the capital assets as a result of realization of the investment proposal. Specifically, in the author's opinion, the investments represent the growth of value of the capital assets as a result of the economic activity in the reporting period as well as the part of the income which was not used for consumption. According to a more adequate opinion, the reason of joint production and income fluctuation in Keynes system is the change in the amount of desirable investment expenses. At that the author suggests the definition according to which the investment means the acquisition of a certain good for those revenues which we can expect to receive in future.
The most generalized definition of investment is that it is the act of exchange of satisfaction of the current demand to the future satisfaction of demand by means of invested funds, i.e. the investment means the following: invest more today and get more in future.

In general, in the contemporary economic literature investments are considered as the long-term capital expenditures in any form (cash, specific deposits, interest, shares and their securities, intellectual values and so on) in enterprises, production projects, social-economic programs, innovation projects inside the country and abroad with the purpose of gaining profit in a certain term after the investment.

Under the Georgian law, "the investment is any material and intellectual value or right the placing and use which for receiving anticipated profit is totally and unconditionally protected in the territory of Georgia." That is the investments imply the growth of amount of the capital operating in the economic system. Therefore, it can be said that the investment is the integrity of certain expenses implemented by various instruments today and anticipated extended demand in the future. Hence, we can conclude that the investment may be defined in dual way: the first one is the economic or essential definition according to which the investment is the act of satisfaction of future demands in the increased amount, and the second one is the technical definition according to which the investment is the total of expenses. Both those aspects are closely interrelated and interdeterminated.

For a long period of time no financial investments were available in Georgia whereupon investments and capital expenditures were equated to each other. According to the analysis of definitions of capital expenditures, there are several conceptual approaches: the first one is the spending concept of capital expenditures (capital expenditure is the integrity of expenses of specific directions); the second one - the borrowing concept of capital expenditures (capital expenditure is the resource of development of the society or any of its spheres); the third one - the purposeful concept of capital expenditures where are separated not only the cash expenses but the purposes of the given expenditures (creation of material and technical base, accumulation and update of capital assets); the fourth one is the synthetic (mixed) concept of capital expenditures (the spending character of capital expenditures is connected with the purposes of the given expenses).

In connection with emergence of the stock market and beginning of market transformation in the society, the concept of capital expenditures has transmitted to the series of technical definitions. The spending concept has survived as well: the capital expenditures are investments in the capital stock (capital assets), including the expenses in new construction, extension, reconstruction and retrofit of operating enterprises, acquisition of machines, equipment, instruments, stock and supplies, R&D and other activity. In our opinion, such definition comprehensively determines this category.

Under the modern conditions, the capital expenditures factor does not express the profoundness of the investment concept to the full extent. For this reason, their consideration as the capital forming investments is justified. Such definition has already been adopted in our country for the full-scale assessment of those investment flows which are reflected in the operation of the real sector of economy. This category includes: overhaul expenses, investments for acquisition of plots of land, investments for acquisition of patents, licenses, software, investments for development of R&D plans, for filling of reserves of operating material assets.

The financial market or the security market is the mechanism of exchange of financial assets after gathering of security sellers and buyers in one place. Such approach may be called the functional-technical approach which does not reflect the entire essence of the financial market. Unification of the financial market and security market sets aside other cash flows thus preventing the comprehensive objective analysis of economical processes. The subject-matter of the financial market is rather well determined by the following idea: financial markets are the mechanism which connects money seekers and money owners for making contracts. For the full determination of the essence of financial market we shall touch on the financial market structure which contains two components: the security market (or stock exchange) and debt capital (credit money resources) market. The essence of securities may be reflected better by mutual coordination of its investment and fund-raising parts. The investment and fund-raising are two sides of one process. At that the investment component is brought to the forefront because the demand determines the supply. The demand for investment determines the offer of idle cash funds. In addition it is known that the source of investment activity may be not only the borrowed funds but own and state funds. When discussing the fund-raising, we first of all imply the use of idle funds that is only a part of the cash resources of the investment process. It may be stated that the process of movement of cash funds begins with the fund-raising and ends with investing though, it may be also said that this process begins with the investing and ends with fund-raising.

This process may be considered as exemplified in security market players. A bank which invests the funds in equity instruments makes investments while the issuer of the given liabilities makes the fund-raising. It may be stated that the fund-raising and investing process run concurrently though, from the standpoints of various financial market players those processes look differently. In the process of movement between two polar points of the financial market, the cash funds undergo certain changes. The cash funds in the borrower’s hands after the fund-raising pass the stage of distribution (allocation) through the cash movement where they lose their connection with the own "source" as well as they lose their personal properties. At the same time, the funds raised through financial institutions transform into the cash flows and passing the investment market are channelled to those industries and regions where the investment will be the most effective.

As it is known, the goal of cash flow in the stock market is the investments. One of the objectives of the investment process is the placement of cash in the real spheres. The investors pay great attention to the short-term profitable projects, or speculations.

Under the market economy conditions, both financial and direct investments are implemented on the fundamental principles.

Herewith, implementation of investments is allowed when the capital value C_0 of investments under the conditions of the estimated rate of interest at the initial stage of its realization is not negative:

$$C_0=\Sigma (b_t - a_t) / (1+ i) \geq 0$$

where **t** is the time of effect, **b** – accruals, **a** – taxes.

This principle evidences that under the conditions of the estimated rate of interest the investments are admissible when the annual average revenues exceed the relevant expenses.

Consequently, in case of availability of alternative variants of implementation of investments the priority shall be given to that variant when by the certain moment under the conditions of the given estimated rate of interest the capital value is minimal. In this case it is acceptable that the investor under the given conditions of estimated rate of interest can invest and return any funds as the expenses and revenues can be compared by the capital value assessment method or annuity.

The application of these principles is reasonable for selection of the best variant among the investment alternatives. When speaking about the investment decisions, the issue of analysis of risk factors becomes urgent. Within the assessment of anticipated outcomes of investments are used:

- The method of net present value (NPV) which determines the present value of revenues expected in future;
- The interest rate of return when the expenses spent for the project are established according to the effect to be received after project implementation;
- The method of return on investments when the return of expenses spent on investment is determined.

The main risk factors the investor faces before implementation of investments may be determined as follows:

- Economic risk – which may result from the significant changes expected in the national economic structure and the probability of how those changes will effect on the expected return of the investment;
- Transfer risk – the possibility of taking capital abroad;
- Inflation risk – the current and forecast inflation rates determine the availability of effective demand and operation of target markets;
- Location risk - the integrity of those negative outcomes which may occur in the region;

- Sovereign risk – is mainly connected with the service of foreign debts and the threat that the government will not be able to pay the national debts;
- Political risk – is connected with the civil instability expected inside the country.

After description of the economic essence of investments it is very important to determine the stages which are passed by the investors after making decision on placing of their funds: the first stage is aimed at the rapid growth of the capital, that is connected with the fact that at the initial stage of implementation of investments the investors, as a rule, have limited amounts of funds, so they are seeking to return the funds as soon as possible ; the second stage where the quality of growth of capital and receipt of the revenue from the investment becomes important; the third stage implies sustainability of capital and receipt of stable and high revenue.
Under the market economy conditions classification of main stages of investments enables to determine the trends of state regulation of this process. Noteworthy is that at the current and estimated stages the planning of macroeconomic parameters is based on two main factors where one is the growth of foreign direct investment (FDI). This process shall be reinforced with the relevant changes of the fiscal policy, structural and institutional reforms in order to ensure on the basis of temporary revival of the economy the long-term growth with participation of the financial and banking system.

Savings and Investment Stimuli
Local or national resources of investment activity represent the basis for implementation of investment projects. To those resources may be attributed two significant sources of financing of the investment activity: internal and attracted sources.

The internal sources of investment project imply the profit and depreciation charges. The amount of two sources of financing is totally regulated by the state through the tax and accounting policy.

Promotion of investment processes in Georgia shall begin from the change of the policy of depreciation charges in the local entrepreneurial activity.

Deprecation is amortization of capital assets expressed in terms of money as a result of their use in production. The depreciation method simultaneously enables to reflect the cost of obsolete means of production in the commodity produced by them. The instrument of restoration of amortization of capital assets is the depreciation charges in terms of cash. This monetary mass is intended for repair, construction or purchase of new means of production. The amount of depreciation charges in included in the cost of a product, hence it represents a determining factor of the final price of the product.

Depreciation rates are one of the key sources of financing of reproduction and capital assets. Under the conditions of transition of the national economy to the market economy the rates of depreciation charges which are approved by the state are of great importance because by this method enterprises can provide themselves with the means of production at the expense of own investments without governmental allowances as it used to be under the conditions of centralized management of economy and credit institutions.

The depreciation rates established by the state determine the intensity of changing of operating capital assets. However, it should be noted that under the inflation conditions the rates of depreciation charges become pointless because the cost of capital assets expressed in a monetary unit devalues much during the inflation period. Therefore, the capital assets shall be revaluated in order to avoid the devaluation of actual depreciation under the inflation conditions.

Such form of revaluation (adjustment of value) is the accelerated depreciation though, under the conditions of the transitional economy one shall be very cautious when taking such steps because within the period of the commodity deficit and rigidity of production of means of production the accelerated depreciation charges can promote serious inflation processes as the depreciation charges represent the monetary aggregates which suppress as the superfluous load the effective demand in the commodity market. In order to prevent such processes, there shall be implemented the protective program of accelerated development of national production to be coordinated by the national government. Without such measures the surplus funds available in hands of enterprises will promote the increase in inflation. The state shall play a significant role to transform the profit to investments. Only the reasonable state policy can promote the investment activity and distribution of profit for financing of investment projects. In case of duly promotion of investing from the side of the state the cash assets which have been exported from the territory of Georgia and now are maintained on various bank accounts abroad or are involved in the economy of other counties can be returned back to Georgia.

The profit and depreciation are the traditional sources of financing of investment programs aimed at extension of the basic production assets.

Role of Economic and Mathematical Modelling of Company Investment Activity in Its Management

In the modern economy the main basis of the successful operation and development of industrial companies is their effective investment and innovation activity. At the same time, due to the limitation of investment resources, the full realization of the investment-innovation potential is very complicated or impossible. Therefore, many companies face problems of due development and implementation of their investment strategy. An effective direction of the investment activity is fund-raising both inside the company and in the environment and lines of its operation: customers, suppliers, stock and supplies, production, sales system and management in general. In this case very urgent is the optimization of internal investment activity of the company, right strategic choice of investment projects or formation of the maximum effective investment portfolio and making optimal schedule of its implementation that is directly connected with the investment flow management. In connection with this, we will review the problems of enhancement of economic development of the company and ways of their solution, based on the strategy of selection of priority directions of investment and the system of tactic formation models. The top attention shall be paid to such components of the investment activity management mechanism as the objectives, criteria, factors and resources (material and financial) of management; organizational potential, etc.

Investment Activity Management Model of Company. Methodological Guidelines

The development management of a company is reflected in the integrity of those arrangements, methods and funds (material and immaterial) which are placed for attainment of concrete objectives. The general development level of a company is based on the following components: economic development level, corporate development level, technical and technological development, management development level. The economic development level is determined by the growth of following indicators: the proprietor's financial performance, earnings, profit, breakeven, personnel income, financial stability factor. At the same time also important are the reduction of the excessive accounts payable and cost per unit. Of course, the ideal variant will be to attain all the above mentioned goals, maximization of all parameters. However, it is clear that it is simply impossible to achieve this ideal: risk minimization, market extension, etc. The growth of current consumption results in the increase of the development fund and rise of the economic level of the company. Such aim is multicriteria and any decision in a concrete period is compromising, or only one criterion or several criteria may be maximize. For majority of Georgian companies the growth of financial performance is related to the growth of circulating assets, production and sales. Finally, majority of decisions (e.g. increase in the business cost or current profit) are made using different variants of distribution of profit. Therefore, the necessary and satisfactory condition of improvement of one of the above-mentioned criteria without deterioration of other ones is the growth of profit. Implementation of any project connected with any direction of the capital investments (material and technical supply, production, trade or management) will effect on the main factors – economic parameters of the product: price, cost, manufactured amount and finally, the profit (Fig. 1). Profit **P_T** is formed from the company earnings (revenue) and expenses and the factors effecting on it are the price, cost and amount of product:

$$P_T = \sum_{i=1}^{n} (P_{i,T} - C_{i,T}) N_{i,T} - \sum_{l=1}^{L} K_l \rightarrow \max, \qquad (1)$$

where $P_{i,T}$, $C_{i,T}$ – are the average values of i-product price and specific cost within the T-time period, (i=1, n), n – quantity of manufactured product, $N_{i,T}$ the amount of manufactured product, K_l – the investment level in the company l activity direction (l=1, L). The main goal of the investment is to select projects in the portfolio and determine the required amount of funds. Introduction of objective function and procedures of determination of basic model parameters enable to solve the following problem – for security of maximum growth of the objective function the investments shall be implemented at a concrete stage of decision-making.

In this case the best solution will be the two-stage technology of problem of distribution of investment resources. At the first, initial stage will be used the procedure of strategic planning of priority selection of investing. Thereafter, the methods of financial flow management are used, in the dynamics of further specification of projects, by calculation of investment flows, specification of expenses and results by the repeated iteration on a company scale. At the strategic planning stage are performed: strategic analysis (determination of aims and criteria of a company in consideration of analysis of the internal and external investment environment); specification of main guidelines of the activity; selection of priority lines of the capital investment; planning of strategy implementation, drafting of the company budget and budgets of its units and structural distribution of investments.

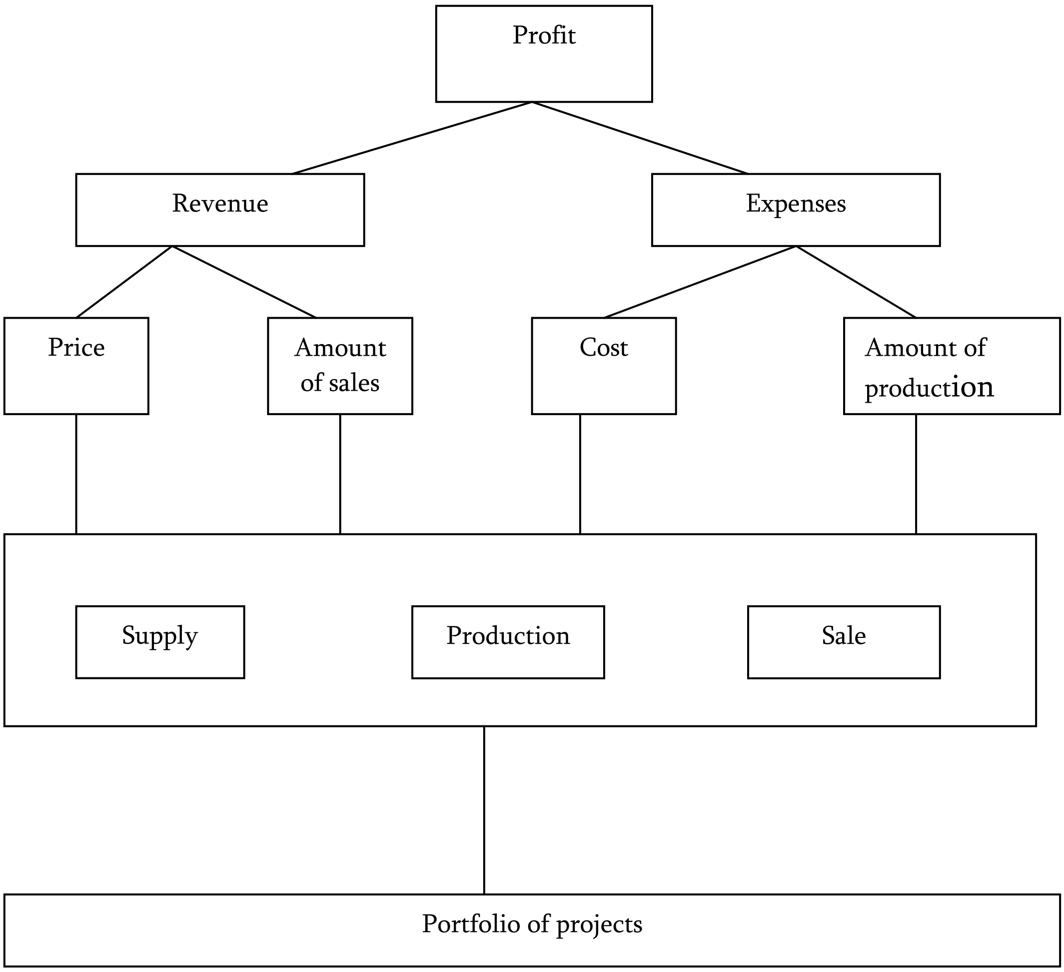

Fig. 1. Structure – "Goals and Resources"
Level 1 – ultimate goal; Level II – subgoals; Level III – objectives and problems; Level IV – ways of solution (guidelines); Level V – projects

Conclusions

In our opinion, the present state investment policy shall be radically changed subject to the following premises:

1. To determine the conditions and mechanism for market evaluation of assets of enterprises that will enable them to use those assets more effectively;
2. To change the depreciation policy in line of its liberalization, providing the growth of quality of freedom for reorganized enterprises;
3. Consecutive decentralization of the investment process and enhancement of the role of own internal sources of fund-raising of enterprise for financing of their investment projects;
4. The government support to the companies at the expense of centralized investments;
5. Placement of centralized capital assets of limited amount and state financing of investment projects under the strictly targeted programs and competition.
6. Significant extension of the joint state and commercial financing practice for investment projects.

References

1. Keynes John M. 1936. *The General Theory of Employment, Interest, and Money*. London, Palgrave Macmillan.
2. Campbell C. D., Campbell R. G. and Dolan E. G. 1988. *Money, Banking, and Monetary Policy*. The Dryden Press.
3. Friedman D. 1989. *Money & Banking*. American Bankers Association.
4. Miller, R. L. and VanHoose D. 2001. *Money, Banking & Financial Markets*. Cincinnati.
5. Brealey R.A., Mayers S. C. 1988. *Principles of Corporate Finance.* New York: McGrow Hill.
6. Dzneladze G. 2003. Financial Flow Modelling Mechanism in Georgia. *Magazine "Bank",* N 16, (in Georgian language).
7. Dzneladze G. 2007. Analysis of Effect of Macroeconomic Indicators on Living Standard of Population – Basis for Social Policy Implementation. *Bulletin of the Centre of Strategic Researches and Development of Georgia, N102*, (in Georgian language).
8. Garakanidze Z., Murgulia Sh. 2008. Some Problems of Investment Security in Georgia. *Bulletin of the Centre of Strategic Researches and Development of Georgia, N107*, (in Georgian language).
9. Dzneladze G. 2009. Socioeconomic Outcomes of Global Crisis in Georgia and Ways of Their Compensation. *Bulletin of the Centre of Strategic Researches and Development of Georgia, N114*, (in Georgian language).