

# Estimating the Cash Flows to the Economic Entities in Romania

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## Abstract

*This article tries to demonstrate that the most important stage in drafting a draft budget for an investment is the estimation of cash flows. If the cash flow estimate does not have a reasonable degree of accuracy, any analytical technique, irrespective of its complexity, can lead to mistaken decisions and hence to operating losses and market price cuts. This does not mean that economic entities are not allowed to make estimation errors, but only that the estimation of cash flows must be the best possible when evaluating a project. Therefore, describing the importance of accurately estimating cash flows is rather difficult, but observing some basic principles will help minimize forecast errors. The article ends with the author's conclusions on estimating cash flows for an investment budget.*

**Key words:** analysis, budget, estimation, cash flow, project

**J.E.L. classification:** M21

## 1. Introduction

The expression “cash flows” means the set of inflows and cash outflows and cash equivalents. In recent years, there has been a need to include in the financial statements a document showing the extent to which the various activities of an economic entity generate cash flows, respectively, surpluses or cash deficits. European Union IV Directive does not provide for reporting such a document, but more and more European multinational economic entities are drafting and reporting this situation in their financial statements.

For the first time, the “Cash Flow Statement” appeared in international capital markets (stock exchanges) as a mandatory reporting document and was subsequently taken over by International Accounting Standards. With the start of the accounting harmonization program, the cash flow statement becomes a mandatory reporting document. Regulation OMF 94/2001 has brought a number of classifications, setting out the modalities of presentation. Thus, the construction of cash flows is made by reconstituting the currency movements of the period, based on the balance sheet, the profit and loss account and the balance sheet annexes.

The analysis of cash flows includes the analysis of the results, the use of resources and the change in the treasury, thus obtaining information on the solvency of the economic entity as the regular link between receipts and payments. This document provides information that allows users to evaluate changes in an entity's net assets, its financial structure, including information about its liquidity and solvency, and the entity's ability to influence the value and timing of cash flows.

Thus, the cash flow statement provides useful information on both the ability of entities to generate cash and cash equivalents, and on the appropriate use of cash flows. The Cash Flow Statement, in accordance with IAS7, includes spot deposits and cash, while cash equivalents are short-term investments - highly liquid, which can be easily converted into cash in known amounts and for which the risk of change in value is negligible. These cash equivalents are held to deal with short-term treasury bills. A placement will generally not be considered as a cash equivalent unless it has a maturity of less than or equal to three months from the date of acquisition. Treasury flows

exclude movements between items that are cash or cash equivalents because these components are part of the cash management of an entity rather than operating, investing or financing.

## 2. Theoretical Foundations and Literature Review

Globally, investors are increasingly concerned about the financial statements of economic entities, with the cash-flow available becoming a key indicator in assessing entity performance.

From the theoretical point of view, there are two currents that try to explain the cash-flow: one Anglo-Saxon and one French. In analyzing the issue of cash flow estimation, a feature of the current state of research is the supremacy of Anglo-Saxon literature.

Thus, foreign specialists, such as Belverd E. Needles Jr., Henry R. Anderson and James C. Callwell - place the sign of equality between cash flow and cash flow, which in a global vision can be accepted but punctual, the cash flow approach to the flow of funds can not be accepted as the movement of funds does not capture the viability of exploitation, investment and financing activities. They explain the variation in the net cash flow treasury due to the cash changeover because of the management (operational) operations, including the change in the need for working capital ( $\Delta NFR$ ) due to investment operations (fixed assets only, fixed assets) and due to operations financing (through equity and borrowed capital). Inclusion of the variation in the need for working capital in the cash-flow and not in the investment fund is little controversial.

If we consider that capital investment for growth refers equally to the acquisition of fixed assets (assets) and current assets (increase in stocks and receivables), then it seems legitimate to include  $\Delta NFR$  in the investment cash-flow ( $CF_{inv}$ ). If we consider that there is a close correlation between sales (business) and volume of stocks and receivables and that the turnover variation largely explains  $\Delta NFR$ , then it seems legitimate to include  $\Delta NFR$  in the cash-flow management ( $CF_{gest}$ ).

The French current explains the same cash changeover ( $\Delta TN$ ) due to the interaction between the long-term equilibrium and the short-term equilibrium, namely on the basis of the fluctuation of the bearing fund ( $\Delta FR$ ) and the change in the need for working capital ( $\Delta NFR$ ).

The Romanian specialists, such as C-tin Stănescu, A. Ișfănescu, A. Băicuși, are of the opinion that "an important component of the analysis of the financial and patrimonial situation is the research of the flow of resources as in economic practice it is considered that any activity must pay money", to result in a surplus of capital compared to the one invested in business.

According to Ion Stancu, „the increase of the net treasury for the financial year represents the cash flow of the period (CF) - the net cash flow of the exercise, respectively the cash-flow can represent the change in the net treasury from the beginning to the end of the financial year. Like the cash (net treasury), the cash-flow synthesizes the variations resulting from all the management and capital operations of an economic entity.

By grouping these opinions of Romanian specialists, it is clear that „cash-flow” means:

- a method used in the analysis and strategy of the economic entity;
- a method for updating future earnings;
- a net cash flow (cash), calculated cash inflows / outflows;
- a cash flow (treasury, cash, liquidity) that „releases” a capital surplus (treasury excedent) from the initial one invested in the business.

At our country level, the concept of cash-flow is found in the financial legislation, respectively in Annex II / 3 to the Norms of application of the GD 13/1995, approved by HG172 / 1995, where it is represented by the structure of the cash flow).

International Accounting Standards, in particular “IAS 7 Cash Flow Statements”, recommend the construction of the treasury cash flow statement in completing the synthetic accounting documents: balance sheet, profit and loss account, and balance sheet appendix. To survive in an increasingly competitive market means the ability to generate cash for the timely payment of obligations to business partners.

## 3. Research Metodology

The research issue is built around the main question: “How much is it necessary to develop an investment project for establishing the capital budget by providing information on cash flows?”

The research undertaken focuses on the necessity, usefulness, importance and level of use of the cash flow situation in the realization of an investment-expansion project.

Thus, the following questions arise:

1) How do the economic entities perceive the costs and benefits of drawing up the cash flow statement?

2) Is the size of economic entities influencing management's perception of the cash flow situation?

In carrying out this study, the following research techniques and procedures were considered: review of the literature, observation, interview, data collection and processing, synthesis of theoretical aspects and research results.

An important element in estimating cash flows is the identification of the relevant cash flows that are the group of those cash flows to be taken into account in that decision. In this regard, there are two rules for financial analysts to avoid mistakes:

(1) decisions based on which investment budgets are established must start from cash flows rather than from accounting income, and

(2) only incremental cash flows - those that are generated by the acceptance of the project - are those relevant in the acceptance or rejection decision.

#### 4. Evaluation of investment projects for the establishment of the capital budget

We define the expansion project as the project that causes an economic entity to invest in new facilities to increase sales volume. We assume that an Alpha economic entity anticipates an increase in demand for one of its products.

To meet this demand, it is necessary to purchase a new cutter and finisher that costs 10,000 euros. This equipment will be purchased and installed at the end of 2018 and paid on December 31, 2018. Therefore, the project will require an initial investment of €2,000 in net working capital. Initial investment for working capital will also be made on December 31, 2018. The machinery has a service life of 5 years and will be sold at the beginning of the sixth year; based on estimated sales levels, the machinery is expected to generate an increase in net operating income of EUR 3,500 annually over a five years period starting in the end of 2019.

It is anticipated that when the machinery is sold for scrapping, the CCA group ("capital cost allowance") to which it belongs will still contain assets. The rate of capital cost applicable to the calculation of the CCA is 20%. The tax rate is 40%; the residual value is estimated to be equal to the cost of non-amortized capital for the sixth year, ie EUR 3,686, and the cost of the capital after tax for this investment project of the entity, a project considered to have an average degree of risk, is 10%. The question is: should the Alpha economic entity acquire this new machinery?

It identifies the investment expenses required for the project as a first step in the cash flow analysis.

In an investment project, estimating these cash outlays is very simple because it is not about replacing an existing machinery and therefore there will not be any complications related to taxes, as in the case of the sale of old equipment. Initial expenditure is shown in Table 1, in the column 2018.

Table no. 1. Enlargement project to Alpha economic entity, net cash flows (in euro) on period 2018 - 2023

year	2018	2019	2020	2021	2022	2023
0	1	2	3	4	5	6
Machinery	10,000	-	-	-	-	-
Increase in net working capital	-2,000	-	-	-	-	-
Fiscal value	-	10,000	10,000	10,000	10,000	10,000
Minus: Cost of sold goods	-	6,500	6,500	6,500	6,500	6,500
Income before tax	-	3,500	3,500	3,500	3,500	3,500
Minus: CCA to pay	-	1,000	1,800	1,440	1,152	922
Net operating income before taxes	-	2,500	1,700	2,060	2,348	2,578
Minus: Taxes (40%)	-	1,000	680	824	939	1,031

year	2018	2019	2020	2021	2022	2023
Net operating income after tax	-	1,500	1,020	1,236	1,409	1,547
Plus: CCA	-	1,000	1,800	1,440	1,152	922
Cash flows from operation	-	2,500	2,820	2,676	2,561	2,469
Recovering net working capital	-	-	-	-	-	2,000
Terminal value	-	-	-	-	-	3,686
Loss of savings from sales tax	-	-	-	-	-	-983
Savings from Tax remaining	-	-	-	-	-	983
Net cash flows	-	-	-	-	-	-
	<b>12,000</b>	<b>2,500</b>	<b>2,820</b>	<b>2,676</b>	<b>2,561</b>	<b>8,155</b>
Updated Net value NAV (at 10%)	<b>1,426</b>	-	-	-	-	-

Source: own projection

They are worth 12,000 euros, representing the cost of the machinery, including the installation costs and the necessary investment in the net working capital.

After we estimate the initial capital requirement, we see the annual increases in cash flows that will occur after the start of production, presented in columns 2, 3, 4, 5 and 6. Net cash flow after tax is equal to operating income after tax, ie 3,500 euros annually over 5 years plus the deduction for CCA. CCA for the project must be based on the difference it brings to the respective group of assets, the purchase of the machinery. The influence that this acquisition has on the group is worth 10,000 euros. In the first year, the CCA deduction is worth 1,000 euros (or half of the usual amount as a result of applying the half-year rule), leaving a net operating income after tax of 1,500 euros. The net cash flow from year-to-year operation is €2,500, that is net operating income after tax, plus CCA. Table 2 shows the calculation of CCA values for each year together with UCC (undepreciated capital cost) before and after deduction of CCA. Note that, investment in net work capital will be recovered in 2023.

Table no. 2. Expansion project of Alpha economic entity (CCA and UCC for each year)  
- in Euro -

year	UCC: the calculation basis of CCA	CCA	UCC: after deduction of CCA
1	10,000	1,000	9,000
2	9,000	1,800	7,200
3	7,200	1,440	5,760
4	5,760	1,152	4,608
5	4,608	922	3,686
6	3,686		

Source: own projection

Analiza fluxurilor de numerar nu este completă, întrucât sistemul canadian de impozitare are anumite prevederi speciale în legătură cu CCA. Mai întâi, beneficiile care apar din deducerea CCA din motive fiscale continuă neîntrerupt. Economia realizată în urma acestei continuări a deducerii CCA este valoroasă pentru entitate, deoarece reduce impozitele viitoare, astfel încât consecințele acestuia asupra fluxurilor de numerar trebuie să fie luate în considerare. La sfârșitul anului 2023, UCC al grupei respective de active va fi de 3,686 euro. Valoarea actualizată la sfârșitul anului 2023 a economiilor realizate în viitor începând cu anul 2024 datorită acestui sistem, poate fi descrisă astfel:

Cash flow analysis is incomplete because the Canadian tax system has some special provisions in relation to the CCA. First, the benefits accruing from the CCA deduction for tax purposes continue uninterrupted. The economy generated by this continuation of CCA deduction is valuable to the entity because it reduces future taxes so that its consequences on cash flows need to be taken into account. At the end of 2023, the CCA of the respective group of assets will be 3,686 euros. The value updated at the end of 2023 of savings made in the future since 2024 due to this system can be described as follows:

$$\text{Updated Value} = T \cdot C_0 \cdot d / (k + d), \text{ where:} \quad \text{rel.1}$$

- $C_0$  is the value UCC of the respective group of actives, and  
- $d$  is the CCA applied maxim rate of the respective group of actives.

This updated value is:

$$\text{Updated Value} = (0.40 \cdot 3,686 \cdot 0.2) / (0.1 + 0.2) = 983 \text{ euro}$$

And is presented in table no.1 on remaining savings from taxes.

Until now, considerations of tax savings are based on the assumption that the asset is not sold. There are two consequences when the sale is made: the first one is the cash entry corresponding to the residual value; in this example, this value is EUR 3,683 and the second is that the sale of an asset reduces the value of that asset group to the amount that was made on sale; the result is the loss of tax savings. The current (present) value of these tax losses at the time of sale can be expressed as follows:

$$VP_{\text{loss}} = T \cdot S \cdot d / (k + d), \text{ where:} \quad \text{rel.2}$$

-  $S$  is the value of the sale.

In this example, the loss of tax savings is equal to 983 euro, which is equal to the remaining tax benefits (this is a special case where the residual value was assumed to be equal to the UCC value). The value of loss of tax savings is represented as a negative cash flow, in Table 1.

*Expansion project from the Alpha economic entity, the time axis of cash flows, 2018 - 2023*  
in euro -

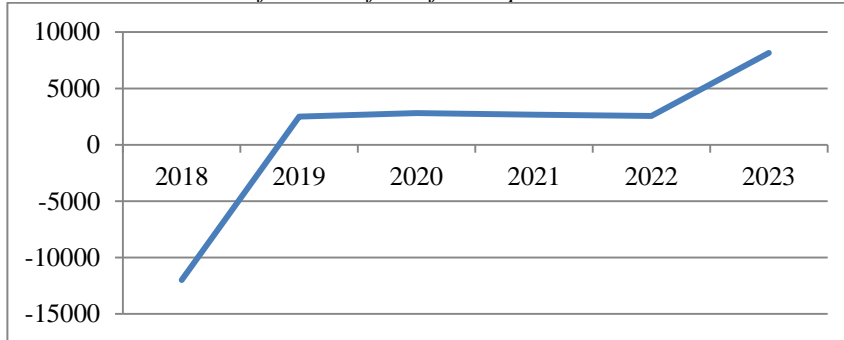
2018	2019	2020	2021	2022	2023
-12,000	2,500	2,820	2,676	2,561	8,155

The ultimate cash flow is to recover net working capital, i.e. 2,000 euros, which is supposed to take place at the end of the life of the project.

With the estimated net cash flows for each year, the net present value of the project can now be calculated for the decision.

In order to summarize the information and to prepare for the evaluation - it is useful to represent all the net cash flows on the time axis, figure no.1.

Figure no. 1. The variation of net cash flows for the period 2018 - 2023



Source: own projection

Figure 1 contains the investment return period, the IRP, the internal rate of return on investment IRR, and the net present value of the VAN. At a 10% capital cost, the project appears to be acceptable, according to the VAN, IRP or IRR methods; it is also acceptable if the Alpha entity wants the return on investment to be 4.2 years or less.

Investment recovery period:	4.2 year
Internal ROI of IRP investment	13.9% 40/5000 compared to 10% of the capital cost
Internal IRRI Rated Return Ratio	12.5% compared to 10% of the capital cost
Net updated VAN value:	1,426 euro

## 5. Conclusions

The cash flow statement provides useful information about both the ability of entities to generate cash and cash equivalents and the appropriate use of cash flows. The information provided by the cash flow statement can be used to increase the quality and level of earnings, liquidity and financial flexibility, and helps to predict cash flows.

The analysis was based on the assumption that the project has the same degree of risk as most other projects of the economic entity. If the project is considered to have a higher risk than the average, it is necessary to increase the capital cost ratio, which may result in a negative VAN and IRP lower than the cost of capital.

For the investment decision, the net cash flows for each year were estimated and, depending on the results obtained, relevant indicators for the acceptance or rejection of the project were identified: the investment recovery period, the internal rate of return and the net present value.

Thus, at a cost of capital of 10% and a recovery period of up to 4.2 years - the investment project is acceptable.

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