# APROACHING THE ECONOMIC DIMENSION OF SUSTAINABLE DEVELOPMENT FROM A FINANCIAL PERSPECTIVE: A CASE STUDY REGARDING CASH-FLOW ANALYSIS AND THE RELATIONSIPS BETWEEN CASH-FLOW AND NET INCOME

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**Abstract**

Europe 2020, a strategy for smart, sustainable and inclusive growth stresses the necessity of smart, sustainable and inclusive growth. The objectives of a sustainable economic development include sustaining economic growth, maximizing private profits and expanding markets. Considering this, economic development must based on facts, not on papers. Therefore, considering the economic dimension of sustainable development, it is important to establish if Romanian companies listed and traded on Bucharest Stock Exchange are able to obtain profit while cash is withdrawn. Even if reported in the income statement, net profit is not simultaneously charged due to accrual accounting that makes the balance sheet provide a static picture of the financial position, while the cash flow statement provides a dynamic picture of it. Therefore, the financial performance analysis based on classical indicators of performance must be accompanied by the analysis of treasury, namely of the cash flow, which provides a comprehensive assessment possibility of the financial performance, flexibility and adaptability of the economic entity, in the context of a highly competitive and often unstable environment. A positive net flows is a confirmation of the economic success of the company representing the concrete expression of the net profit and other pecuniary accumulations, interpreted as the real self-financing investment capacity, which would lead to the real asset growth and thus to the increase of the owners' wealth.

**Key words:** cash-flow, net treasury, working capital, needed working capital
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## 1. Introduction

The recent economic crisis has put Europe in the face of great challenges: to deliver smart, sustainable and inclusive growth. Financial markets suffered powerful strikes during the crisis, and therefore, players acting in the area have encountered major difficulties. Therefore, listed companies must face a double challenge: ensuring profits and increasing it, as requested by shareholders, while providing a sustainable growth, on real basis. This challenge is even greater for young capital markets, such as Romania, since they cannot rely on a wide past experience.

Even if reported in the income statement, net profit is not simultaneously charged due to accrual accounting. Meanwhile, a positive net flows recorded over several successive exercises is a confirmation of the

economic success of the company representing the concrete expression of the net profit and other pecuniary accumulations, interpreted as the real self-financing investment capacity, which would lead to the real asset growth and thus to the increase of the owners' wealth.

Given these issues, and considering the economic dimension of sustainable development approached from a financial perspective, this paper analyze the way Romanian companies listed and traded on Bucharest Stock Exchange are able to obtain profit while cash is withdrawn.

Financial accounting practice in Romania (Stancu I., 2007) uses more circumscribed notions of cash: net cash, idle money, cash liquid assets or cash. However, the concept of cash and cash flow increasingly replaces more frequently the referenced terms, being adopted and enshrined in the specialized literature and in practice.

In this context, the need to distinguish between the actual cash must be made, which refers to the liquid assets in the cash and current bank accounts and the cash equivalent, referring to the quasi-liquid assets, cash equivalents represented by short-term financial investments.

Understanding the formation of the cash, the manner the factors of influence acts, increasing or decreasing the level of the net treasury, provides for companies an important basis for decision and action, in order to obtain and improve the cash-flow, providing resources for a sustainable growth.

Approaching the issue of cash-flow, IAS 7 Statement of Cash Flows requires all entities that prepare financial statements in conformity with IFRSs to present a statement of cash flows as an integral part of their primary financial statements. The statement of cash flows analyses changes in cash and cash equivalents during a period, providing information about the historical changes in cash and cash equivalents of an entity. Cash flows are classified, presented and analyzed into operating, investing activities or financing activities, using the direct or indirect method (IAS 7).

**2. A brief literature review**

Cash flow (CF) represents net cash variation from the beginning till the end of the financial year, summarizing the variations resulting from all management and capital operations of the company (Stancu I., 2007). Explaining the cash flow formation varies according to the current theory used: Anglo-Saxon or French.

The Anglo-Saxon current explains the formation and variation of cash flow due to changes in the management operations, including the variation in the need for working capital, investment operations and the financing operations.

$$CF=\Delta TN=CF_{from\ the\ operational\ activity}+CF_{from\ the\ investment\ activity}+CF_{from\ the\ financing\ activity}$$

$CF_{from\ the\ operational\ activity}$ is determined by the direct method, as the difference between the income received and expenditure payable incurred by the management

activity. Through the indirect method (Vâlceanu et al., 2005) operational cash flow is determined by adjusting the net income, net depreciation and provisions with the variation of the working capital

$CF_{\textit{from the operational activity}}$=Net profit +Net depreciation and provisions-Financial income-ΔNFR

$CF_{\textit{from the investment activity}}$ is determined by the direct method, as the difference between payments for the acquisition of assets and revenue from the sale or repayment of assets, and from the remuneration of financial assets in the form of received dividends and interest. The indirect method proposes the calculation of financing cash flow by comparing assets at the end of the financial year to the original ones (Vâlceanu et al., 2005).

$CF_{\textit{from the investment activity}}$ = Fixed assets $_1$- (Fixed assets$_0$ - Net depreciation and provisions) - Financial income

$CF_{\textit{from the financing activity}}$ entries are generated by increases in capital and/or increases of financial liabilities through new borrowings. $CF_{\textit{from the financing activity}}$ outflows is due to the repayment of long term loans or the repurchase of its own shares on the stock market. Directly, the financing cash flow is determined as the difference between the proceeds of foreign capital increases and payments for repayments or redemption of bonds or treasury shares and dividends. According to the indirect method, the financing cash flow is determined by comparing the final balances with the initial ones of the equity, except the net profit of the current financial year and the long-term debts (Stancu I., 2007).

$CF_{\textit{from the financing activity}}$ =(Equity Capital $_1$-Net income$_1$-Equity Capital $_0$)+( Long-Term Debt$_1$- Long-Term Debt $_0$)

The French current explains cash flow fluctuation by variation in working capital (WC) and the need of working capital (NWC), namely the interaction between short and long-term equilibrium.

CF= ΔTN=ΔWC-ΔNWC

This method of calculation shows that the treasury depends on the working capital, namely its influence factors, i.e. the permanent capital and the net fixed assets and the needed working capital which is influenced mainly by factors acting on operating activities, respective on operating assets and liabilities.
Calculated as such, treasury allows at a certain time, the determination of the financial balance between the working capital and the needed working capital (Balteş et al., 2003).

The change in treasury appears as the difference between the change in working capital and changes in the needed working capital. (Petrescu S., 2008). The treasury crisis may be expressed as the fact that, at one point, the company is not in a position to identify additional resources to satisfy all creditors. Treasury crisis may reflect a crisis of profitability, a lack of resources or a lack of flexibility in spending. (Balteş N., 2010). Net cash is the most relevant synthetic expression of a balanced and effective activity, showing the quality of general financial equilibrium of the company, both on the short and long term. (Stancu I., 2007).

A positive net flows recorded over several successive exercises is a confirmation of the economic success of the company representing the concrete expression of the net profit and other pecuniary accumulations, interpreted as the real self-financing investment capacity, which would lead to the real asset growth and thus to the increase of the owners' wealth. (Marin D., 2006). Although in general a positive cash flow indicates a profitable and balanced funding and investment policy, there may be cases in which it may indicate improper cash recovery.

According to Professor Stancu (2007) "*the net income represents an accounting possibility of present and future receipts, the cash-flow expresses in cash the balance between receipts and payments from the beginning to the end of the year. Only under conditions of the zero growth of the company and reinvestment of annual depreciation, the net profit is equal to cash flow. Under conditions of growth different from zero, cash flow takes the influence of this economic growth on the net profit*." Management operations are reflected in the flows of income and expenditure from the results' account, summarized in net profit and depreciation which has not been reinvested as potential sources of cash flow. The corrections of previous potential receipts with influence of capital transactions that are not reflected in the income statement show the actual measure of cash flow (Stancu I., 2007).

Cash is identical to the net profit only in particular cases (Pablo F., 2006): zero growth, the acquisition of fixed assets for depreciation, permanent maintenance of debts, selling only fully depreciated assets, the lack of inventory, namely the needed working capital 0, sales and purchases with cash payment.

Although reported in the income statement, net profit is not simultaneously charged due to accrual accounting that makes the balance sheet provide a static picture of the financial position, while the cash flow statement provides a dynamic picture of it. (Bătrâncea I., 2008)

## 3. Research on cash-flow analysis and the relationships between cash-flow and net income, during 2007-2012, for the companies having the business line in industry and construction, listed and traded on the Bucharest Stock Exchange

The financial performance analysis based on classical indicators of performance, calculated based on the income statement must be accompanied by the analysis of treasury, namely of the cash flow, which provides a comprehensive assessment possibility of the financial performance, flexibility and adaptability of the economic entity, in the context of a highly competitive and often unstable

environment, taking in considerations the objectives and requirements of a sustainable economic growth.
Customizing the aforementioned theoretical concepts for this paper was done through a case study of companies listed and traded on the Bucharest Stock Exchange, operating in industry and construction.
In this context, the analysis of how the companies listed and traded on the Bucharest Stock Exchange ability to get profit was accompanied by the ability to generate cash flows, i.e. to record a positive change in treasury (ΔTN).

**3.1 Research methodology:**
The analysis of cash flow and net profit - cash flow relationship is part of a larger paper, the PhD thesis on the analysis of the financial performance of companies listed and traded on the Bucharest Stock Exchange during the period 2006-2012.
In November 2013 there was 51 companies listed and traded on the Bucharest Stock Exchange, BSE section, categories I; II; III during 2006-2012, having the business line in industry and construction, according to NACE revision 2. Under this classification, Industry includes Mining and Quarrying, Manufacturing, Electricity, Gas, Steam and Air-conditioning Supply (sections: B, C, D and E).
The Cash-flow analysis, during 2007-2012 was based on financial statements published on Bucharest Stock Exchange website, and available on each listed company website. Financial statements have been prepared under the legal regulations in force at the date of their publication. Financial statements for year 2012 are in accordance with the Order of the Minister of Public Finance no.1286/2012, mandatory for companies whose securities are admitted to trading on a regulated market, which are required to apply IFRS individual annual financial statements. All results and graphs are the authors' own calculations and representations, performed on the specified data.
This paper represents a part of al larger work, the doctoral thesis on financial performance.

**3.2 Hypotheses and research objectives**
This case study is based on the assumption that in many cases, companies obtained net income without doubling this performance by a constant generation of cash flow. However, listed and traded companies give increased importance to liquidity, generating cash-flow representing a condition and a confirmation of financial performance, under the circumstance of a sustainable growth.
The research objectives are: determining the structure of companies according to their ability to obtain net income and cash-flow; identifying the factors and situations that lead to obtaining or not obtaining the cash-flow, in order to provide recommendations and courses of action to obtain a better cash-flow.

### 3.3 Case study

To analyze the profit-cash flow relationship, we determined, for each year $t_i$ in the period 2007-2012, the cash flow, defined as variation of net cash (ΔTN) from the beginning until the end of the year, according to the relationship:

$$\Delta TN=TN_1-TN_0$$

and for each period we looked at the result at the end of the period $t_i$, i.e. its realization in profit or loss.

The factor analysis of the cash flow was realized from the French current for determining cash flow, namely from the relations below:

$$TN=WC-NWC$$

$$\Delta TN=\Delta WC-\Delta NWC,$$

there was analyzed how the change in working capital, namely in the needed working capital, which caused the cash-flow variation.

Depending on the results obtained four types of behavior were identified, by which we grouped the 51 companies analyzed: Profit is obtained and cash is withdrawn; Cash is withdrawn, but loss is registered; Profit is withdrawn but cash is not withdrawn; Loss is recorded without registering cash

#### 3.3.1 The profit-cash-flow relationship

In figure 1 is presented as a graph the structure of the companies according to the profit-cash relationship.

Except for the year 2008, between 39% and 49% of the companies manage to achieve a positive net result in terms of positive changes of treasury, thus confirming the fulfillment of performance standards. In 2008, only 31% of the companies have managed this, the start of the financial crisis affecting, from this perspective, 17% of companies. For the entire period, the share of companies that have met both performance standards, declined by an average annual rate of 3.41%.

In the period 2007-2012, between 8% and 14% of companies manage, despite financial losses, to withdraw cash flow, a situation confirmed by the values of the indicators of solvency and liquidity (Vasiu et al., 2014). Most companies, between 13% and 16% were in this situation in 2010 and 2011. During the analyzed period, the share of companies that have registered a positive variation of the treasury, in the context of net financial loss increased by an average annual rate of 3,73 %, very close to the average annual percentage with which the percentage of the companies that have achieved net profit and a positive net cash variation has decreased.

However, for a large proportion of companies, between 25% and 49%, the profit motive occurs in the context of a negative cash flow, current and future earnings becoming "an accounting possibility." For these companies, the impact of the

financial crisis is the strongest during 2007 and 2008, when 40% and 49% of companies listed on BSE were in this situation, these percentages falling steadily, up to 25% in 2012, with the overcoming of the crisis. The average annual percentage with which companies in this category decreased was 9%.

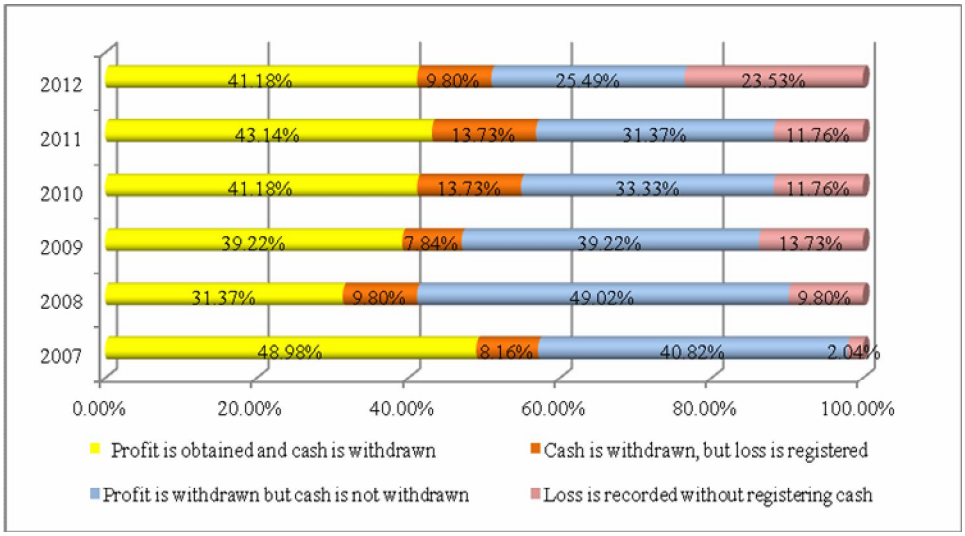


**Figure 1: The structure of the listed and traded companies at Bucharest Stock Exchange, acting in Industry and Constructions, according to the profit-cash relationship**

Source: author's self-processing, based on the annual financial statements of the companies listed and traded on the BSE, during 2007-2012, available on www.bvb.ro

A special situation occurs when companies incurred net losses without registering cash. If in 2007, only 2 % of the companies were in this situation, in 2012, 23,5% of the companies registered both net loss and net cash negative variation.
In this profit - cash flow approach, the impact of the financial crisis and post-crisis period implications have generated in reducing financial performance for 20% of the companies listed and traded on the BSE. The number of companies that have suffered from this lack of performance, when incurred net losses without registering cash, increased by an impressive average annual rate of 63%.
Analyzing the links between profit and cash flow, it can be noted that in general, over 40% of companies had a net profit in terms of a positive net cash variation.

### 3.3.2 The factor analysis of the cash flow, bases on French current approach

The factor analysis of the cash flow was realized from the French current approach, for determining cash flow as difference between working capital and necessary working capital, based on the relation:

$\Delta TN=\Delta WC-\Delta NWC$.

Analyzing how the change in working capital, namely in the needed working capital, caused the cash-flow variation, six situations, presented in table 1, have been recorded.

**Table 1: The share of the companies, during 2007-2012, according to the relationship between cash-flow (ΔTN), the variation of working capital (ΔWC) and the variations of necessary working capital (ΔNWC)**

| The share of the companies, according to the registered circumstances | | | | | | Circumstances |
|---|---|---|---|---|---|---|
| 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | |
| *9,80%* | *11,76%* | *9,80%* | *19,61%* | *23,53%* | *25,49%* | ΔWC<0, ΔN WC <0, ΔWC <NWC, ΔTN>0 |
| *39,22%* | *17,65%* | *21,57%* | *27,45%* | *27,45%* | *23,53%* | Δ WC>0, ΔNWC>0, ΔWC>ΔNWC, ΔTN>0 |
| *9,80%* | *11,76%* | *15,69%* | *7,84%* | *3,92%* | *1,96%* | ΔWC>0, ΔNWC<0, ΔTN>0 |
| *7,84%* | *21,57%* | *21,57%* | *15,69%* | *13,73%* | *27,45%* | ΔWC<0, ΔNWC<0, ΔWC>ΔNWC,ΔTN<0 |
| *19,61%* | *27,45%* | *31,37%* | *19,61%* | *25,49%* | *21,57%* | ΔWC>0, ΔNWC>0, ΔWC<ΔNWC, ΔTN<0 |
| *13,73%* | *9,80%* | *0,00%* | *9,80%* | *5,88%* | *0,00%* | ΔWC<0,ΔNWC>0, ΔTN<0 |
| 58,82% | 41,18% | 47,06% | 54,90% | 54,90% | 50,98% | ΔTN>0 |
| 41,18% | 58,82% | 52,94% | 45,10% | 45,10% | 49,02% | ΔTN<0 |
| 68,63% | 56,86% | 68,63% | 54,90% | 56,86% | 47,06% | ΔWC>0 |
| 31,37% | 43,14% | 31,37% | 45,10% | 43,14% | 52,94% | ΔWC<0 |
| 72,55% | 54,90% | 52,94% | 56,86% | 58,82% | 45,10% | ΔNWC>0 |
| 27,45% | 45,10% | 47,06% | 43,14% | 41,18% | 54,90% | ΔNWC<0 |

Source: author's self processing

In the years 2007, 2010, 2011 and 2012, most companies (more than 50%) achieved cash flow; the situation was reversed in 2008 and 2009, when over 52% of companies have experienced negative net treasury (ΔTN<0). Differences between the percentage of companies that obtained cash flow and those that did not register are higher in 2007-2008, being of about 17%, and fell below 1% in 2012. The structure and evolution of the companies, according to obtaining or not cash flow is illustrated in figure 2.

Except 2012, over 50% of companies recorded an increase in both working capital and needed working capital. The higher increase of the permanent capital, as compared to the net fixed assets, reveals a long-term balance, being considered as a reserve fund to finance the deficit existing between funding allocations and short term financing resources. With the increase in working capital, the safety margin of the company also increases, which shows that the most significant part of current assets is financed by permanent equity. However, we believe that the excess of net current assets, unfunded from temporary liabilities represents a surplus, which may be a margin of safety regarding the creditworthiness of the company. The situation is reversed in 2012, when the share of companies which had a decrease in the working capital and in the needed working capital is higher than 50%.

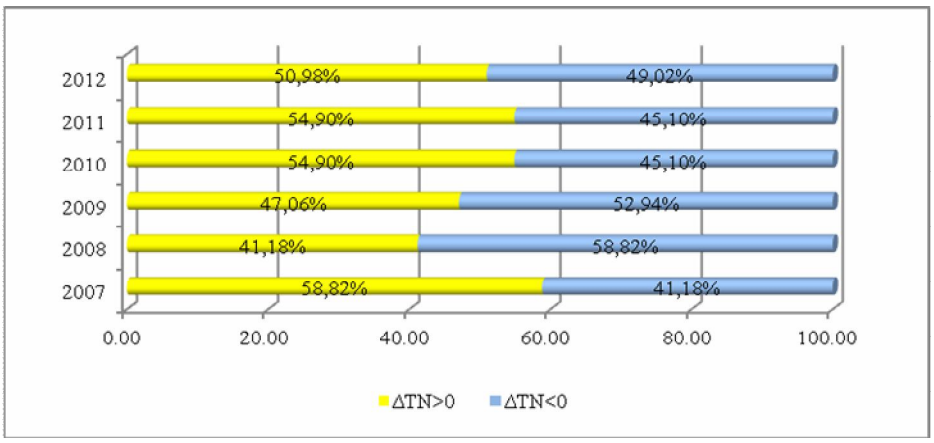


**Figure 2: The structure and evolution of the listed and traded companies at Bucharest Stock Exchange, acting in Industry and Constructions, according to according to obtaining or not cash flow**

Source: author's self processing, based on the annual financial statements of the companies listed and traded on the BSE, during 2007-2012, available on www.bvb.ro

The structure and evolution of the companies, depending on the evolution (increase or decrease) in working capital and the necessary working capital is shown in figure 3 and 4.

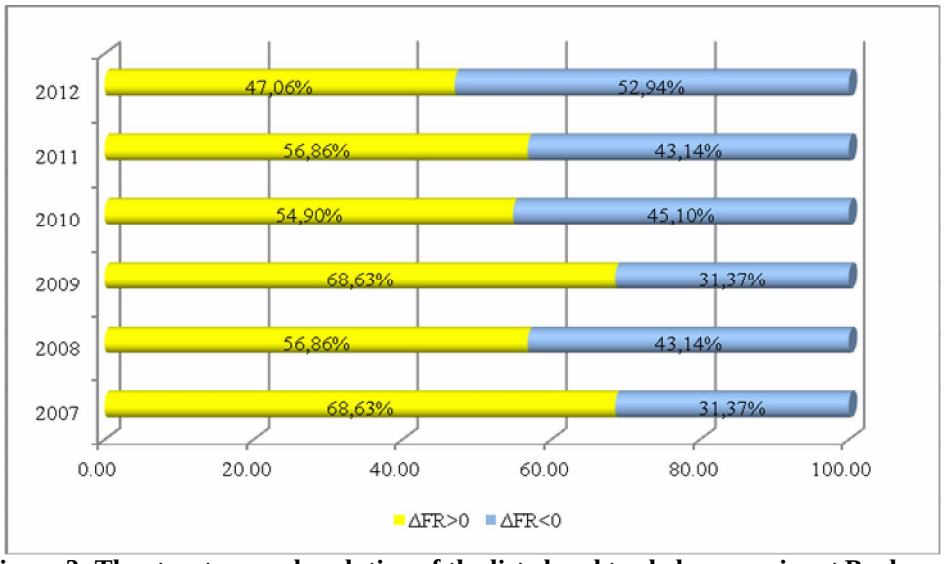


**Figure 3: The structure and evolution of the listed and traded companies at Bucharest Stock Exchange, acting in Industry and Constructions, depending on the increase or decrease in working capital**

Source: author's self processing, based on the annual financial statements of the companies listed and traded on the BSE, during 2007-2012, available on www.bvb.ro

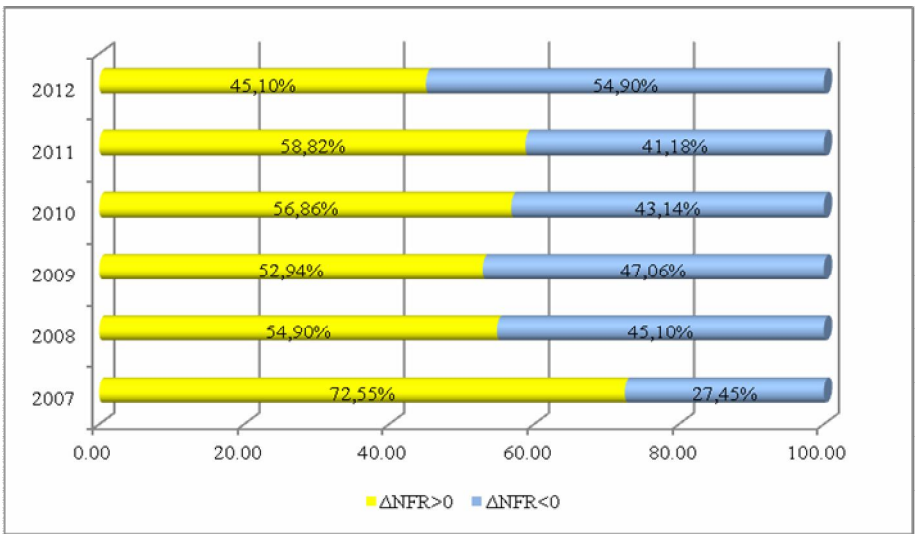


**Figure 4: The structure and evolution of the listed and traded companies at Bucharest Stock Exchange, acting in Industry and Constructions, depending on the increase or decrease in needed working capital**

Source: author's self processing, based on the annual financial statements of the companies listed and traded on the BSE, during 2007-2012, available on www.bvb.ro

The cause that influenced the variation in net cash in most companies was different from year to year: in 2007, 2010 and 2011, when cash flow was obtained, this was under conditions of positive changes in working capital and of a negative variation of the needed working capital, the working capital variation being higher than the variation of needed working capital. In 2008 and 2009, most companies which have not obtained cash flow experienced this situation in the context of both positive changes in working capital and the needed working capital, but the change of necessary working capital was higher than the working capital variation. In 2012, most companies which did not obtain cash flow faced negative values in the working capital variation and needed working capital, the needed working capital variation being lower than the working capital variation.

Working capital variations and of the needed working capital as causes that led to the achievement or not of the cash flow have had the following dynamics: reducing by an average annual rate of 28% of the cases where achieving positive changes of the net cash was due to the influence of factors "$\Delta WC > 0$, $\Delta NWC < 0$" and an average annual increase of 21% in the number of cases in which cash flow has been achieved due to the joint influence of the pair" $\Delta WC < 0$, $\Delta NWC < 0$ $\Delta WC <$ NWC". The triple conditioning "$\Delta WC < 0$, $\Delta NWC < 0$, $\Delta WC > \Delta NWC$" caused that the number of companies that have not achieved cash flow the increase at an average annual rate of 28%.

In less of the cases, companies have experienced decline in working capital, in the context of increasing the needed working capital ($\Delta WC < 0$, $\Delta NWC > 0$), which resulted in the lack of cash flow; in 2009 and 2012, this situation did not occur.

## 5. Conclusion

Analyzing the links between profit and cash flow, it can be noted that over 40% of companies registered net profit in terms of a positive net cash variation. This fact confirms the hypothesis that most of listed and traded companies give increased importance on generating cash-flow that represents a condition and a confirmation of the clasic financial performance, approached through net profit. This way, these companies ensure a solid and sustainable growth, the net income going beyond the "*accounting possibility"*

Before, and after financial crisis, (the years 2007, 2010, 2011 and 2012), most companies (more than 50%) achieved cash flow; the situation was reversed in 2008 and 2009, when over 52% of companies have experienced negative net treasury. Except 2012, over 50% of companies recorded an increase in both working capital and needed working capital. The cause that influenced the variation in net cash in most companies was different from year to year: in 2007, 2010 and 2011, cash flow was obtained under conditions of positive changes in working capital and of a negative variation of the needed working capital, the working capital variation being higher than the variation of needed working capital. In less of the cases, companies have experienced decline in working capital, in the context of increasing the needed working capital, which resulted in the lack of cash flow.

## 6. Acknowledgment

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