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*Method of enterprises cash flow analysis:  
the Ukrainian experience*

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Metoda analizy przepływu gotówki w przedsiębiorstwach: doświadczenie ukraińskie

**Key words:** cash, incoming cash flow, outgoing cash flow, liquidity, cash flow synchronization, analytical evaluation, cash flow optimization

**Słowa kluczowe:** środki pieniężne, wpływy środków pieniężnych, wypływy środków pieniężnych, płynność finansowa, synchronizacja środków pieniężnych, szacunki analityczne, optymalizacja przepływów pieniężnych

## **Introduction**

Amount of earned revenue and a general financial result of an enterprise are an important criterion of a business entity activity, still they are not the pledge of paying capacity sufficient level. Amount of revenue and profit in some way plays the role of a derivative factor, as their full size depends greatly on a character of cash flows dynamics.

Flow of money is very important for paying capacity in business. It is a well-known fact that finances are used not only to provide an enterprise operating business, but also to meet existing obligations of the enterprise. That is why the existence in an enterprise of enough amount of finances actually guarantees the expediency of settlements with all categories of creditors providing better safety of an enterprise.

Flow of funds vividly reflects a character and activity specifics of a business entity. Disregard of estimation and optimization of cash flows may cause activity

randomness, strategic development insufficiency and aggravating of the problem of promptitude in payment.

Existing great revenue of an enterprise with small cash flows and their update rate lead to worsening of a business entity financial soundness, while efficient use of finances in business causes increasing of finances earnings. In other words, well-formed cash flows provide an enterprise finances addition. Taking into account the above-mentioned, cash flows analysis is an important area of an enterprise analytical work.

The importance of cash flows for the estimating of both current and future enterprise value is widely stressed in researches of native and foreign scientists.

The first considerable research the connection of business values and future on cash flows comes from John Williams in his work "The Theory of Investment Value" [J. Williams, 1938], though in 1671 Johan de Witt expressed the idea "that the value of something is related to its future cash flows" in the work "The Worth of Life Annuities Compared to Redemption Bonds" [H. Platt, S. Demirkan, M. Platt, 2010].

Current studies of cash flows essence together with their influence on an enterprise earnings and value are in process. In particular, Mark L. DeFond and Mingyi Hung studied the role of cash flows in assessing of enterprise earnings [M. L. DeFond, M. Hung, 2001]. Victoria Dickinson, connecting cash flow patterns with lifecycle stages of an enterprise, stresses the importance of their study for the analysis and forecasting enterprises activities [V. Dickinson, 2010].

American scientists Harlan Platt, Sebahattin Demirkan and Marjorie Platt, studying macroeconomic tendencies, mentioned that an enterprise market value depends greatly on its future cash flows, saying that "the value of the firm is related to but unequal to the present discounted value of future cash flows" [H. Platt, S. Demirkan, M. Platt, 2010]. Instead Stephen H. Penman and Theodore Sougiannis studied the influence of different factors (cash flows as well) on stock capital value [S. H. Penman, T. Sougiannis, 1995].

Diverse studies of cash flows allow to claim that they are an important modern instrument in an enterprise activity assessment, so further investigations in this field are currently important. The main subject of this article is studying of information sources concerning cash flows in Ukrainian enterprises and finding such a method that could help to fundamentally assess enterprise activity results and to refer management efforts to an immediate achievement of current and strategic goals of an enterprise.

## **1. Tasks and sources of cash flows analysis**

Processes of a modern economic activity prove the dependence of an enterprise stability on its capability to form cash flows. That is why the aim of cash flows analysis is estimation of an enterprise capability to generate finances in the amount and terms important to make planned payments, promote effective management of an enterprise cash flows allowing to provide financial enterprise of an enterprise,

increase operating business balance, provide acceleration of ratio of capital turnover, reduce need to borrow money and financial insolvency risk.

The main tasks of cash flows analysis are as follows:

1. Study amount and sources of finances entering an enterprise.
2. Study main directions of finances spendings.
3. Analysis of cash flows according to types of an enterprise activity.
4. Analysis of net worth sufficiency for performing other usual activities.
5. Analysis of correlation between revenue and change in cash.
6. Achieve financial optimization.

To achieve set goals analysts must find actual information about entering and spending of finances from different accounting sources.

The main source of information according to enterprise cash flows is the Cash flow report. It shows entering and disposal of finances during an accounting period as a result of operational, investing and financial activity and is itself the form showing information in the fullest way about cash flows having served for the whole enterprise activity. According to National Accounting Regulation 1 [Regulation no. 73, February 07<sup>th</sup>, 2013], starting in 2013 enterprises are able to choose the method of drawing up a Cash flows report in one of the following forms: form no. 3 «Cash flows report according to the direct method» or form no. 3-Н «Cash flows report (according to the indirect method)». But as the following form is purely annual, it cannot be used for operative goals.

In a contracted form the information as to the finances is shown in form no. 1 «Balance (Financial state report)», where the line 'Money and its equivalents' is devoted to it. Such information must be entered as to a certain date and shows only demand balance and its equivalents, without demonstrating full information about its dynamics.

In the sixth section «Comments to Annual Accounting Statements» (form no. 5 of an annual accounting statement) there is information about an enterprise finances at the end of a financial period, still, the given information is momental, being, however, divided into five parts, just like in the Balance.

In making managerial decisions, cash flows analysis only on the basis of report forms is often insufficient to define the essence of enterprise principles of cash receipts and spendings. In such cases information sources amount needs to be expanded to the level of a current accounting information. Though such an analysis requires a greater amount of labor expenditures and prolongs the duration of analytical investigations, it often helps to discover true reasons for existing fluctuations. So one should use the current accounting information given by business accounting registers and supporting documents during a fundamental analysis of cash flows of an enterprise (Fig. 1).

The analysis of main accounting sources shows that object of an enterprise cash flows analysis is demand balance and its analysis on a fixed date and amount of receipt and payment finances.

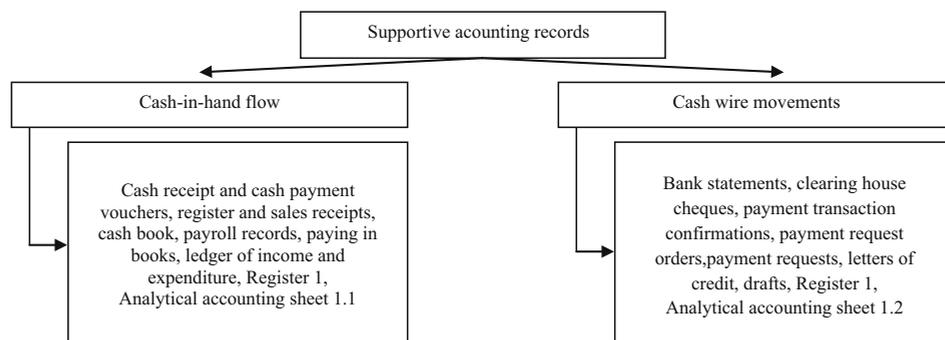


Fig.1. Documentation of currency and non-currency assets of an enterprise

Source: It was processed independently

## 2. Subject-matter and sequence of cash flows analysis

Cash flows analysis is usually made to meet needs of owners and shareholders, managers of an enterprise functional and structural operations, as well as external users of information (within information available). Direct internal cash flows analysis performers can be enterprise analysts or other employees of commercial entities gathering necessary information according to the set tasks, and make an assessment of an enterprise cash flows using analysis methods.

The main stages of the analysis methods are as follows:

1. Comparative analysis of dynamics of an enterprise cash flows total value with accession rate of an enterprise assets, volume of output, or realization of products. This analysis allows to combine principles of forming and use of an enterprise's finances with peculiarities of financial and economical activity. In the process of analysis Table 1 is formed.
2. Analysis of cash flows dynamics. Two variants are possible at this stage of estimation: using a direct method or an indirect one.

While estimating cash flows using a direct method the total amount of finances overall surplus during the whole investigation period is studied, and also which income receivables and retirements helped in forming the following surplus. Thanks to this estimation method, total amounts of finances income receivables and retirements are either reflected in accordance with their appearance in an enterprise or are grouped according to income receivables and retirements categories. Such an approach allows to define, among total amount of receivables the most important as to their weight and periodicity, and among retirements – the most extravagant.

Table 1. Analysis of dynamics of an enterprise cash flows total value

| Indications   | Previous period | Current period | Fluctuations |                    |
|---|-----------------|----------------|--------------|--------------------|
|   |                 |                | amount (+,-) | rate of change (%) |
| 1. Net cash flow during an accounting period                            |                 |                |              |                    |
| including:  |                 |                |              |                    |
| 1.1. Cash flow as a result of operational activity                      |                 |                |              |                    |
| 1.2. Cash flow as a result of investment activity                       |                 |                |              |                    |
| 1.3. Cash flow as a result of financial activity                        |                 |                |              |                    |
| 2. Mid-year value of an enterprise is assets                            |                 |                |              |                    |
| 3. Profit (earnings) from commercialization during an accounting period |                 |                |              |                    |

Source: It was processed independently

In Table 2 the method of analysis of cash flows as a result of operational activity according to the direct method is shown, although analysis of cash flows as results of other types of activity of an enterprise can be similarly analysed.

Table 2. Analysis of an enterprise is cash flows as a result of operational activity according to the direct method

| Indications                                     | Previous period | Current period | Fluctuations |                    |
|---|-----------------|----------------|--------------|--------------------|
|   |                 |                | amount (+,-) | rate of change (%) |
| 1. Receivables, total                           |                 |                |              |                    |
| 1.1. Receivables of finances from demanders     |                 |                |              |                    |
| • in % to total amount of receivables           |                 |                |              |                    |
| 1.2. Obtaining of money advances from demanders |                 |                |              |                    |
| • in % to total amount of receivables           |                 |                |              |                    |
| ...   |                 |                |              |                    |
| 2. Finances spent, total                        |                 |                |              |                    |
| 2.1. Paying of bills of suppliers               |                 |                |              |                    |
| • in % to total amount of receivables           |                 |                |              |                    |
| 2.2. Paying wages                               |                 |                |              |                    |
| • in % to total amount of receivables           |                 |                |              |                    |
| ...   |                 |                |              |                    |

Source: It was processed independently

Using a detailed analysis one should divide the following stage into 4 main steps, in the course of which [I.A. Blank, 1999, pp. 405–406]:

- a) dynamics of amount of a positive cash flow forming in terms of several sources is studied, frequency and balance of receivables is determined; rates of change of assets, production output and commercialization are compared with rates of change of a positive cash flow; correlation between finances borrowed from internal and external sources is estimated; dependence of an enterprise development on external financial sources is studied;
- b) dynamics of a negative cash flow forming, its periodicity, as well as cash flow structure according to directions cash flow spending is studied; directions of spending of finances, borrowed from external sources, is estimated, promptitude of satisfying a debt after obtaining of credits;
- c) balance between total positive and negative cash flow is studied; cash flow according to level of amount sufficiency (redundant or deficient) is estimated; dynamics of net cash flow rate as an important rate of an enterprise activity and indicator of balance level of cash flows in general is studied, net cash flow quality is estimated;
- d) simultaneity of positive and negative cash flow forming in terms of separate intervals of an accounting period is studied; dynamics of surplus of an enterprise finances showing level of such a simultaneity and providing full paying capacity is studied. In the process of investigation of synchrony of different cash flows forming dynamics of liquidity ratio of an enterprise cash flow in terms of separate intervals of a studying period is studied. Such a rate allows for correlation of the amount of a positive cash flow in general with a negative one.

The above-mentioned method of estimation of cash flows dynamics has, however, some defects, which is because the following method doesn't allow to study the correlation between a received financial result and finances changes of the account of an enterprise.

To avoid such a defect the indirect method of cash flows estimation is used. The latter is necessary, because analysts must learn reasons for the mismatch of receivables amount and enterprise finances, as practically not all business entities receiving profit have a satisfactory paying capacity level.

At the indirect analysis method a financial result turns into finances amount due to a current activity during a certain period using adjusting procedures<sup>1</sup>.

While analyzing cash flows with an indirect method one uses analytical Table 3.

According to the data from the above-mentioned Table one may study the correlation between a regular activity financial result before tax and finances surplus due to an operational activity of an enterprise.

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<sup>1</sup> More detailed information as to adjusting procedures is shown in O.V.Pavlovs'ka and others, 2002, pp. 167–168.

Table 3. Analysis of enterprise cash flows due to operational activity using the indirect method

| Indications   | Previous period |             | Current period |             | Cash flow fluctuation according to the amount (+,-) |
|---|-----------------|-------------|----------------|-------------|---|
|   | receivables     | expenditure | receivables    | expenditure |   |
| 1. Profit (negative profit) due to regular activity before tax                              |                 |             |                |             |   |
| 2. Adjustments to:  |                 |             |                |             |   |
| • amortization of capital assets  |                 | X           |                | X           |   |
| • increase (decrease) of cover funds  |                 |             |                |             |   |
| • negative profit (profit) from unrealized exchange differences                             |                 |             |                |             |   |
| • negative profit (profit) from nonoperational activity and other non-monetary transactions |                 |             |                |             |   |
| 3. Decrease (increase) of floating assets   |                 |             |                |             |   |
| 4. Increase (decrease) of current engagements   |                 |             |                |             |   |
| 5. Finances from operational activity   |                 |             |                |             |   |
| 6. Paid income tax  | X               |             | X              |             |   |
| Net cash flow from operational activity, total  |                 |             |                |             |   |

Source: It was processed independently

The above-mentioned approaches thus allow to state that to estimate cash flows of an enterprise, cash flows should be analyzed using both direct and indirect methods. The difference between these methods is a different sequence of procedures of determination of cash flows amount as a result of a current activity, although these data are very important for analytical procedures.

3. The rating system of cash flows efficiency is studied. The following stage of analysis allows to determine cash flows management quality giving the opportunity to make certain adjustments into cash flows optimization quality.

The main estimating indications are: cash flow analysis ratio, indications of cash flow cost efficiency (ratio of cost efficiency of a positive cash flow, cost efficiency of cash flows average balance and net cash flow cost efficiency), ratio of net cash flow sufficiency and ratio of net cash flow plowing back<sup>2</sup>.

<sup>2</sup> Method of estimation and derivations mechanism is shown in R. V. Fedorovych and others, 2001, pp. 92–93.

4. Forecasting of cash flows for a next period. Cash flows forecasting is a highlight of analysis providing approximation of managerial decisions for current and long-run exigencies. Cash flows forecasting is the first stage in cash flows planning for a next period. This analysis stage gives us the opportunity to provide efficiency of cash flow use through their ideal distribution over time and distance, to keep level of liquidity and paying capacity, to provide promptitude and completeness of covering of exigencies of an enterprise in finances etc.
5. Conclusions and suggestions to study alternatives of managerial decisions. On the basis of a retrospective and forecasting analysis of cash flows regularity and character of an enterprise cash flows can be examined, closed and guiding links are studied. Working on the latter ones helps to form alternatives for activity in order to optimize cash flows.

### 3. Methods of cash flows optimization

In order to raise efficiency of formation and use of an enterprise is cash flows in the next period one should regularly optimize them.

The main aims of cash flows optimization are:

- providing of equation of cash flows amounts;
- providing of synchrony of cash flows formation in time;
- providing of net cash flow growth;
- providing of commercially viable use of cash flows clear balance.

Both disbalance of cash flows and misconduct of synchrony of cash flows formation in time are dangerous for an enterprise. Such fluctuations lead to either excessive or scarce cash flows. An excessive cash flow causes redundant finances, while a scarce one – their deficiency.

To avoid negative consequences of such a disbalance influence one should optimize cash flows of an enterprise; that can be done differently depending on a period, during which optimization is planned.

During optimization of a scarce cash flow in a short term one must: look through a current amount of orderings, establish direct economic contacts with suppliers; decrease the amount of transport and procurement expenses via use of own transport and cooperation with suppliers being closer to a producer; sell unsalable commodity stocks and supplies; start carrying out actions; change a pricing policy as to sold products; change conditions of granting a commodity loan; change forms of selling products on credit; increase a payment transaction fraction during settlement with a buyer; accelerate encashment of expired debit debts.

In a long-run period the main ways to optimize scarce cash flow are as follows: to entice strategic investors in order to increase capital; additional issuance of shares; to obtain long-term financial credits; to sell parts of (or the whole) amount of financial investing instruments; to sell (or rent) the main installments not in use; to implement

new less material-, energy- and work-intensive technologies; to implement conveying processing methods; to increase the ratio of final products being in great demand; to enter into contracts for long-term catering etc.

Negative consequences of an excessive cash flow influence should be also divided according to optimization periods.

In a short-run period the main ways to optimize excessive cash flow are as follows: purchasing of capital assets that need a renewal (those that use modern technologies and provide decrease of materials-output ratio, energy consumption and labor-output ratio of a production as well); reasonable increase of current spendings in order to meet needs of an operational activity; advanced repayment of credit etc.

While optimizing an excessive cash flow in a long-term period one should: conduct diversification of production; increase portfolio; expand products distribution areas; accelerate periods of development and beginning of realization of real capital investment projects; expand objects and investment schemes via increase of amount and scheme of operating and fixed assets, expand an investment portfolio that allows in the end to increase financial results not only after an operational activity, but also an investment one.

The above-mentioned approaches to cash flows optimization not only influence dynamics of a positive and negative cash flow forming, but also help to rationally use finances surplus and increase of cash flow as a result of a successfully conducted optimization of a positive cash flow and a negative one. Still, while making managerial decisions concerning optimization of both deficient and excessive cash flows one should study, how exactly the used mechanisms may influence an enterprise value and how high may be risks of unexpected and undesirable outcomes.

## Conclusions

Cash flow is an important independent object of the enterprise financial management. Its precise and 360-degree evaluation encourages an enterprise to achieve set current and strategic goals and helps in forming the positive financial results. The given method of cash flow analysis provides the opportunity to evaluate the enterprise capability to repay existing debts and pay dividends, as well as determine the importance of the additional financial resources application, in advance or rationally distribute temporarily monetary assets surplus in order to optimize activities.

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### **Method of enterprises cash flow analysis: the Ukrainian experience**

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### **Metoda analizy przepływu gotówki w przedsiębiorstwach doświadczenie urkaińskie**

Przepływy pieniężne są ważnym samodzielnym elementem zarządzania finansami przedsiębiorstwa. Ich systematyczna i wszechstronna ocena pomaga firmie osiągnąć cele bieżące i strategiczne oraz przyczynia się do wypracowania korzystnych wyników finansowych. Proponowana metoda analizy przepływów pieniężnych pozwala ocenić zdolność przedsiębiorstwa do bieżącej spłaty zadłużenia oraz do wypłaty dywidendy, a także określić potrzebę zaangażowania dodatkowych środków finansowych lub racjonalnego lokowania czasowo wolnych środków pieniężnych w celu zwiększenia efektywności finansowej przedsiębiorstwa.