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INTRINSIC LIQUIDITY VALUE FOR NON-PROFIT ORGANIZATIONS[1]

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ABSTRACT**:** Cash maintained in nonprofit organizations is not a source of any interests and although the close to cash assesses together with credit lines available for enterprise are connected with resigning from realization of the part of incomes or costs, firms decide to maintain some liquidity reserves. And not only has this resulted from transactional needs, but also from precaution and speculative reasons. Investment in liquid reserves resulting from speculative demand for money may be assessed by usage of capital budgeting methods like: NPV or IRR or as a call option. In the article, each of these aspects of liquidity was taken into consideration and presented from nonprofit perspective. Nonprofit liquidity value determination may often significantly contribute to the solution of working capital management problems in these organizations.

Introduction

What is the value we may attribute to liquidity for non-profit organization? Managers in non-profit organizations have a lot of important reasons for which their enterprises should possess some money resources reserves even if current interest rate is positive [Kim 1998]. The reasons may be classified into three main groups:
- the necessity of current expenses financing (transactional reason);
- fear of future cash flows uncertainty (precaution reason);
- future interest rate level uncertainty (speculative reason).

Liquidity, especially cash, understood as money resources in organization safe is not a source of any or small interests. Maintaining

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liquidity reserve in the non-profit organization is a result of belief that the value of lost income on account of interest will be re-compensed by the benefits for incumbents of non-profit organization [Kim 1998, Lee 1990]. The hypothetical benefits are from higher profitability that organization mission will be completed, thanks adequate liquidity level. Then organizations maintaining such reserves assume that in equilibrium conditions, marginal liquidity value is equal to the interest rate of the Treasury Bonds investments (or interest rate being a cost of short-term credit we took out to obtain liquidity. Without doubt, the statement that liquidity does not bring any benefits may be rejected at once. From such a perspective, liquidity would be treated as a "necessary evil" linked only to the costs resulting from interests lost. Another incorrect conclusion would be an assumption that present net value always equals zero. It would be a result of the statement that due to the fact that marginal liquidity value is always equal to interests lost, cash reserves size has no significance at all [Henderson 1989, p. 95; Kim 1998, Lee 1990: 540].

For organization being in possession of liquid reserves the marginal utility of liquidity changes. Along with the growth in amount of cash possessed, the marginal cash value decreases. So it may be noticed that for the market Treasury Bond rate or short-term credit rate, it pays to keep some money reserve only to the specific level. There is a point corresponding with the optimal (critical) liquidity level, up to which the amount of liquid assesses in the non-profit organization may be increased at a profit [Washam 1989, p.28; Henderson 1989, Lee 1990]. The term: liquidity degree (or level) is connected with the known from economic literature conception of "liquidity container". The more liquid assesses (which may be easily convertible into known amount of money resources and sensible only to a slight value change risk), the higher is enterprise liquidity level.

After crossing this *critical liquidity level*, the Treasury Bonds sale or taking out a short-term debt is unprofitable for the non-profit organization. The marginal benefit from higher cash reserve is lower than the cost of interests lost [Rast 2000, Washam 1989; Henderson 1989].

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Liquidity definition

Liquidity is defined in economic literature in many various ways. It is understood as an *enterprise solvency* i.e. ability to regulate its obligations that result from usual transactions, unexpected events or situations enabling ”bargain” purchase of goods [Henderson 1989, Lee 1990]. On the other hand, liquidity is considered as a *transaction space* on the financial market. It occurs when there is a ”liberty” of carrying out ”huge” sale or purchase transactions on the market, with no fear that you will not find appropriate demand or supply. Another popular definition of liquidity its description as an *assesses convertibility* into other assesses. In other words, liquidity is an easiness of carrying out the exchange transactions with low transaction costs.

There are important connections among these three looks on liquidity. If there appears the necessity of regulating an obligation exceeding cash reserves in enterprise possession, the possibility of repayment depends on whether it is possible to exchange assesses possessed for cash or not. If so, it will be paid off on time. At the same time, the possibility of such an exchange depends on the capacity of the non-profit organization assesses market. It means that the ability to regulate non-profit organization obligations (short-term solvency) is dependent on the capacity of the market of assesses constituting non-profit organization reserves (or more generally: its property). Financial liquidity is therefore an internal category of the non-profit organization, influenced both by the managing team and other factors occurring inside the non-profit organization and in its surroundings. The long-term liquidity is totally disregarded here [Washam 1989, Henderson 1989, Lee 1990].

We will understand non-profit organization financial liquidity as *liquid assesses reserve, which may be used in order to carry out transaction without any time or financial loss* resulting from normal operational activity (transactional liquidity) or because of unexpected needs (precautional liquidity) or because of attractive profit opportunities expectations (speculative liquidity) [Washam 1989, Beck 1993, Lee 1990].

The non-profit organization transactional and precautional liquidities on sufficient level enable prompt fulfillment of internal (salary payments etc.) and external creditors (suppliers payment etc.). The non-profit organization financial liquidity (operational and precautional) usually concerns operational activity and is not linked to in-

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vestment activity. If it comes to enfeeblement or loss of operational and precautional liquidity in the non-profit organization, it menaces with [Scherr 1989, Washam 1989, Beck 1993]:

- lowering decision making elasticity
- deteriorating non-profit organization ability to set the organization mission
- higher foreign capital raising cost
- demobilization of donors
- worsening non-profit organization position.

In order to avoid such dangers, constant monitoring of non-profit organization financial liquidity is necessary, and then taking actions guaranteeing its economic-financial equilibrium.

Option liquidity value

Liquid resources resulting from the "speculative" liquidity demand may bring some benefits, but do not have to. As we can see, liquidity exceeding the daily transactions demand, provides the non-profit organization with an option to take up unexpected projects worth realization to better realization of the mission [Washam 1989, Beck 1993]. Keeping an access to liquidity that exceeds transactional needs, the non-profit organization is in possession of call option.

For example, if in the period when the non-profit organization possesses speculative liquidity sources, there appears purchase possibility of assesses which normal long-term value amounts to 5 million Euro and at the given moment, they can be purchased for 2 million Euro, the NPV of such a "project" will come to 3 million Euro. If non-profit organization possesses the required money reserves, it will have benefit of 3 million Euro. If the non-profit organization has not the access to additional liquidity – it will lose the possibility of investment project realization together with 3 million Euro. Typical options have a value equal to the assesses value reduced by the price of realization and option price. If purchased assesses value exceeds the sum of those two quantities, speculative liquidity reserves generates profits equal to NPV of the project taken. It is about the situation while the speculative reserves are being used, i.e. when operational net cash flows is not sufficient to cover costs resulting from taking up the investment [Scherr 1989, Washam 1989, Beck 1993]. In other case, there is no profit from additional liquidity resources doming from speculative demand.

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Option liquidity value is dependent on 6 factors [Beck 1993]. First of them is the present net value project value. If the potential project profitability increases, the value of project taking option will increase as well. Another factor determining liquidity value is the non-profit organization cash flow. If other factors are constant, option value will increase along with the decrease of operational cash flows level, and will fall together with those flows level increase.

It is because, along with increased operational cash flow level, the probability that the unexpected investment project cost will be covered with those flows increases too. Therefore, the probability of using additional liquidity linked to speculative demand is decreased. The third and the forth factor determining option liquidity value is the cash flows and project cost changeability.

If operational cash flows changeability increases, we are faced with lower probability of using additional speculative liquidity – and therefore the option liquidity value decreases. The probability of using additional liquidity decreases along with increase in project cost changeability. Such increase in changeability is also accompanied with the diminishing project profitability.

The other factors influencing the option liquidity value are: interest rate and the correlation between operational cash flows and costs. If interest rate increases, present project value will decrease, and then – option liquidity value will decrease as well. But correlation between operational cash flows and costs is quite different. If this correlation increases, option liquidity value will increase too. It results from the fact that the probability of using to take up the investment some operational cash flows omitting liquid speculative reserves will be decreased then [Hill 1995, Puxty 1992].

Setting the optimal liquidity level on the basis of its value

It is profitable to increase liquidity level but only to a specific optimal quantity. It results from the current market liquidity value (short-term deposit interest rate or short-term credit interest rate available for a non-profit organization). The point, to which non-profit organization liquidity level may be increased at benefits for incumbents of the non-profit organization, results from. From equalizing of market liquidity value and internal non-profit organization liquidity value (i.e. for $v_m = v_i$):

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$$V_i(pp_{opt}) = v_m \qquad (1)$$

where: $V_i(pp_{opt})$ – internal liquidity value corresponding to the optimal non-profit organization financial liquidity value.

After crossing his optimal liquidity level (pp_{opt}) increased liquidity (e.g. by abandoning to deposit the resources and/or liquidation of existing deposits, or taking short-term debt) is uneconomic for the non-profit organization. That unprofitability among other things results from the fact that marginal utility of higher financial liquidity level is lower than the cost of lost interests benefits. This cost arises as a result of the loss of open deposit interest linked profits in case of resignation from depositing the sources or unnecessarily incurred financial costs if the enterprise uses "unnecessary" outside financing. Optimal financial liquidity level (pp_{opt}) being a result of comparing the market liquidity level v_m, available for a non-profit organization and the internal liquidity value $v_i(pp_{opt})$.

The following conditions are implied by these facts: carrying out investment 2., taking up the credit 3., and equilibrium 4.

carrying out investment condition: $v_i < v_m$ (2)

taking up the credit condition: $v_i > v_m$ (3)

equilibrium condition (optimal liquidity level):

$v_i = v_m$ (4)

where: v_i – internal financial liquidity value in the non-profit organization,

v_m – market financial liquidity value (available for the non-profit organization).

Example: X non-profit organization has a short-term credit of bank A at its disposal. v_m is the cost of this credit. If the non-profit organization management estimates that the internal liquidity value amounts to: v_i, it will delay taking the credit until the internal liquidity value v_i will be higher than market value v_m. When these two values become equal, enterprise financial liquidity value will

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reach the optimal value. But whereas v_i exceeds the v_m level, the firm will demand external financing.

Current finance management begins with determining the optimal liquidity level because it guarantees the best effects [McMenamin 1999]. In order to determine his level information abort internal liquidity value is needed (abort the course of the curve representing it) and non-profit organization market liquidity value must be known too.

Conclusions

Although, cash maintained in the non-profit organization is not a source of any interests and although the close to cash assesses together with credit lines available for non-profit organization are connected with resigning from realization of the part of incomes or costs, non-profit organizations could decide to maintain some liquidity reserves. Not only this results from transactional needs, but also from precautional and speculative reasons. Precautional liquidity results from a will to protect oneself against higher costs connected with impossible to predict negative economic events. It should be assessed from safeguard's point of view. However, investment in liquid reserves resulting from speculative demand for money may be assessed by usage a call option approach. In his paper, each of the above-mentioned aspects of liquidity was taken into consideration and presented. Pondering option liquidity value six factors most influencing it were pointed out. Further analysis of the liquidity value problem would aim at finding the credible methods of its determination. The non-profit organization liquidity value determination may often significantly contribute to the solution of working capital management problems.

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