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STEPPED COUPON BONDS AND RESTRUCTURING FACTORING IN RELATION TO NET CIRCULATING CAPITAL IN COMPANIES IN FINANCIAL DIFFICULTY

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Abstract: The instrument to be applied in order to raise net circulating capital is stepped coupon bonds, a novel solution non-existent on the Polish market. Restructuring factoring applied sporadically in Poland and Germany is an instrument reducing the demand for the corporate net circulating capital. The article presents the idea of these instruments and the possibility of using them by a company in financial difficulty.

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Introduction

Companies in financial difficulty, despite the "healthy business", have a limited access to the sources of financing and, consequently, problems related to the maintenance of financial liquidity. One of the indications of financial liquidity problems is an ill-adjusted net circulating capital level to the demand for net circulating capital. The problem may be tackled in two ways: either through raising the value of net circulating capital or through the reduction of demand for this capital.

The instrument which may be used to raise this level is the stepped coupon bonds, a novel solution non-existent on the Polish market. Restructuring factoring applied sporadically in Poland and Germany is an instrument reducing the demand for the corporate net circulating capital. Although it is not a new instrument, it is very seldom applied. These two instruments may be used by companies in a poor financial situation, the co-operation with which is burdened with high risk and the ones which cannot finance their activities applying standard financial services.

The idea of high risk bonds (stepped coupon bonds).

The question of bond issue cost

The standard approach to bond cash flow modeling is the so-called straight bullet bond. It is a fixed interest bond with no option clauses, with interest paid periodically, repurchased through a one-time payment of the nominal bond value made on the maturity date. This model of security repurchase, standard

on financial markets, is relatively advantageous for debtors as it allows for the delay of the repayment of debt (principal) in comparison with a bank loan[1].

Naturally, it refers to the standard repayment models, i.e. generally applied with regard to all financial instruments.

The aim of the modification of the payback construction of a "classical" bond is raising its credit function, i.e. the longest possible postponement the repayment of principal and interest. One of the solutions is zero-coupon bonds, however with reference to corporate debt, which is burdened with credit risk; the average payback period is too distant for a number of investors so they prefer to be paid periodically before the whole security is repurchased.

In search of an in-between solution the so-called stepped coupon bonds were constructed.

This article presents the straight bullet bond modification called stepped coupon bond. The modification is aimed at transferring the burden of interest bond payback till later with the simultaneous maintenance of interest payment and debt issue cost control.

The bond issue debt costs may be divided into two groups:

- "transactional": cost connected with consultancy, prospectus, issue servicing and also possibly issue guarantee;
- the yield to maturity of bonds (YTM) generated for investors results from two sources: the coupon paid to the bond holders by the issuer and the difference between the bond sale price and the nominal value.

YTM is the most frequently quoted measure of the bond profitability. It is an internal rate of return on investment in this instrument. YTM is an interest rate to comply with the following equation:

$$P = \sum_{i=1}^{n} \frac{CFi}{(1+YTM/M)^{\frac{B}{E}+i-1}} + \frac{100}{(1+YTM/M)^{\frac{B}{E}+n-1}}, \qquad (1)$$

Where, P - the bond price, M - the number of coupon payments in annual terms, A - duration (in days) of the current coupon period; B - the number of days to the beginning of the next interest period from the settlement day; E - duration (in days) of the interest period in which the settlement is made; CFi - i cash flow generated by the bond on account of interest, n - the number of remaining monetary flows from the moment of bond estimation till its repurchase.

The price of bond contains two elements: rate (K) and accrued interest in the current coupon period (for A days from the last coupon). It is assumed that the accrued interest between coupon periods is calculated with the application of simple interest, thus the rate is the difference between the dirty price and accrued interest:

$$K = P - \frac{A}{E} * CF_i \qquad (2)$$

[1] The standard model of the repayment (amortisation) of a bank loan is its payback in periodical principal/interest instalments.

If one deducts from the dirty bond price some additional costs, connected with the organisation and implementation of the issue, incurred on the day of the issue and deducted from the issue income, the YTM calculated on the basis of the reduced security price will include the total debt cost.

Stepped coupon bonds. Structure

The stepped-coupon is a fixed interest bond characterised by a predetermined scheme of interest payment.

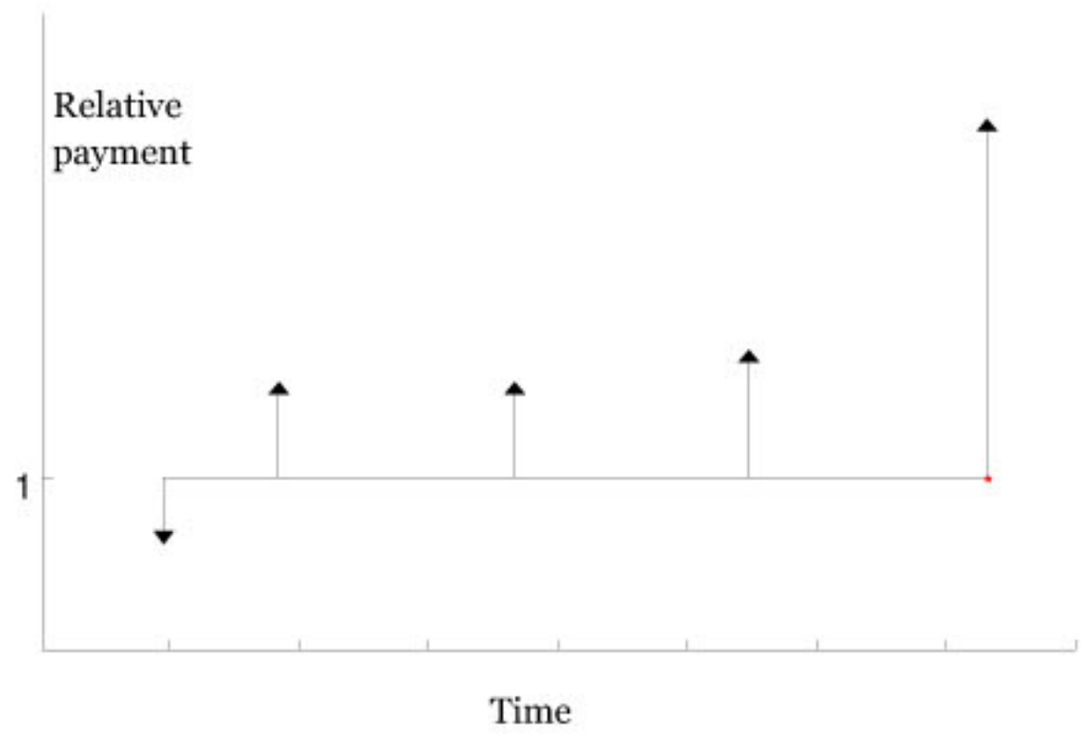
TABLE 1. PARAMETERS OF BONDS ISSUED BY COMPANY A

Bond A dates	Bond A interest rate	Bond B dates	Bond B interest rate	Bond C dates	Bond C interest rate
5 May 2012 (settlement)	0.045	5 May 2012 (settlement)	0.045	5 May 2012 (settlement)	0.025
2 February 2013 (coupon change)	0.07875	2 February 2013 (coupon change)	0.07875	2 February 2013 (coupon change)	0.05
2 August 2013 (coupon change)	0.1025	2 February 2014 (coupon change)	0.1025	2 February 2014 (coupon change)	0.0750
2 February 2014	payback	2 February 2015 (coupon change)	0.14	2 February 2016 (coupon change)	0.14
		2 February 2016	Payback	2 February 2017	payback

Source: Own material

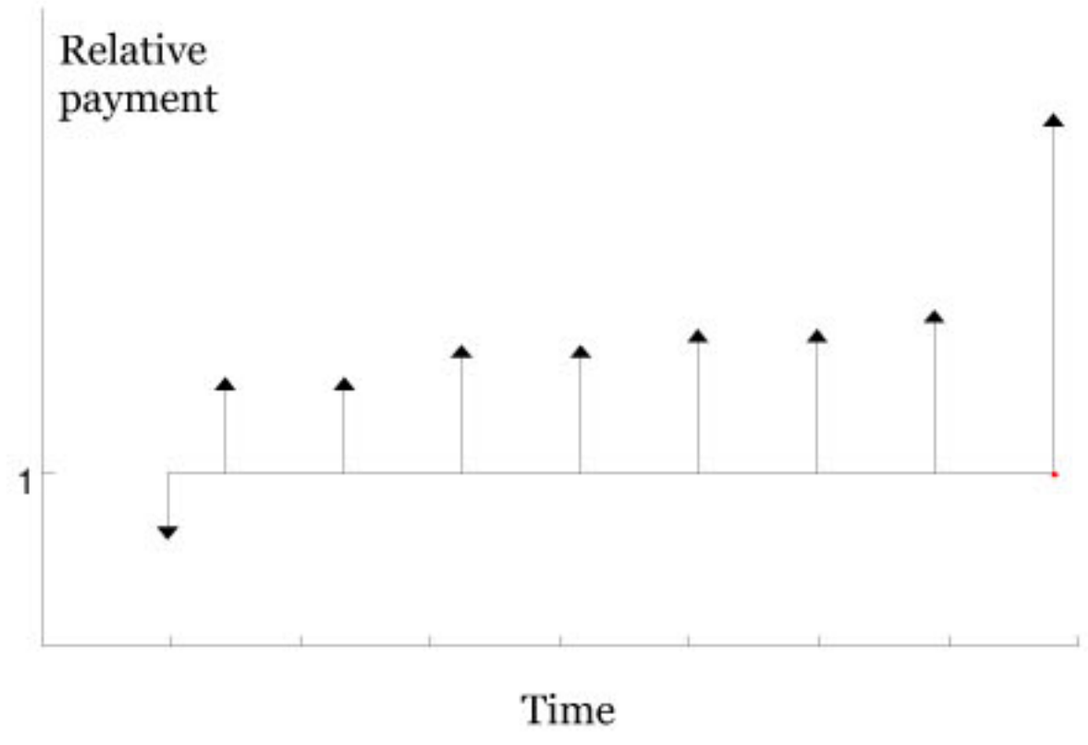
Let us consider the following example: on 5 May 2012 a company issues bonds in series A, B and C. They pay interest half-yearly. The remaining parameters of the discussed securities are included in Table 1. Bonds in different series have different maturities and interest values. These bonds are characterised by the coupon accruing by a definite value for each series. The scheme of cash flow generated by every security is illustrated in Figures 1, 2 and 3.

FIGURE 1. SCHEME OF CASH FLOW GENERATED BY STEPPED COUPON BONDS SERIES A



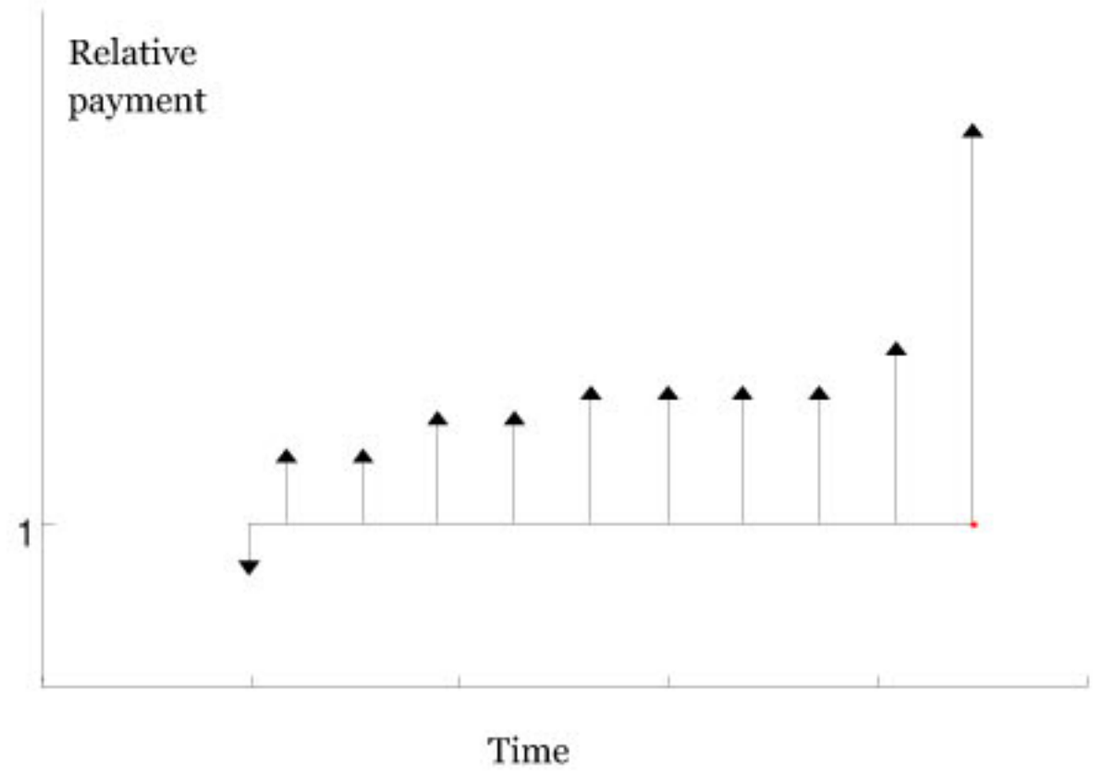
Source: Own material

FIGURE 2. SCHEME OF CASH FLOW GENERATED BY STEPPED COUPON BONDS SERIES B



Source: Own material

FIGURE 3. SCHEME OF CASH FLOW GENERATED BY STEPPED COUPON BONDS SERIES C



Source: Own material

The increase in the level of coupons in relation to earlier payments must be accompanied by a simultaneous debt cost control. The YTM measure will be applied in this connection. Table 2 shows bond issue prices reduced by issue costs per one security as well as YTM rates resulting from the calculations and interpreted as debt cost.

TABLE 2. BOND ISSUE PRICES INCLUDING THE DEBT COST

	Bond A	Bond B	Bond C
Price including issue cost	101.23	102.45	103.05
Debt cost	0.06276	0.08403	0.06498

Source: Own material

From the perspective of the payment schedule stepped-coupon bonds facilitate raising long-term capital by the issuer. Their structure reflects the desire to postpone the burden of interest payment till later. Thus, from the point of view of bond repayment schedule, it is a compromise between a classical fixed interest bond and zero-coupon bond. Considering the value of money over time, the characteristics of variable coupons may be selected in such a way that the debt cost perceived as its internal rate of return would remain unchanged in relation to classical repayment methods.

The idea of restructuring factoring

Factoring is a complex heterogeneous service. It means a long-term cooperation:

- between a factoree, who is goods or services provider or buyer of goods, products and services making use of trade credit granted by its suppliers and a specialized factoring institution called factorer, which results in:
- transfer of liabilities by the factoree to factor and a number of services provided by the factorer in favour of factoree connected with the transfer of liabilities as well as additional services not connected with the transfer itself;
- or repayment by the factor of the current factoree's liabilities and extension of the period of repayment of these liabilities as well as rendering services connected or not with the repaid liabilities.

On the market there are many kinds of factoring. We may classify restructuring factoring according to the criterion of factoring object as complex factoring which is composed of different objects or it may be classified within special forms of factoring. It is a kind of factoring that consists in the cooperation of the company in financial difficulty with the factor with regard to the restructuring of the company. The object of the restructuring factoring is the cession of existing liabilities, cession of future liabilities, subrogation in which the factor pays the factoree's debts to suppliers and enters into the rights of satisfied creditors; as well as a number of services connected with the transferred liabilities, services connected with the repaid debts and well-

developed additional services connected neither with the transferred debts nor repaid liabilities.

The factor's tasks within the restructuring factoring may be divided into two groups:

- tasks convergent with liability factoring (negotiation of terms of agreement with suppliers, guarantee payment to factoree's suppliers, financing current factoree's debts, management of the current and outdated liabilities),
- tasks convergent with the factoring of existing and future debts (refinancing of current factoree's liabilities, management of current and delayed factoree's liabilities, including debt recovery, financing contract execution, i.e. financing of orders).

In the process of factoree's restructuring, the factor is a participant of restructuring (factor's staff take over the duties connected with factoree's finance management), which supervises the process of the company restructuring and is a guarantee of payment for factoree's creditors.

Not every company can make use of restructuring factoring. The conditions to be met by the factoree in the transaction of restructuring factoring are as follows: the factoree has already used debt or liability factoring and is known to the factor, factoree's problems are connected with the company's finance and not any other sphere (the factoree is a company with a sound core business and it is very likely that the financial restructuring will be effective), the factoree agrees that during restructuring the factor becomes factoree's co-shareholder and the factoring is secured by the company shares, the factoree agrees that the factor will manage or co-manage the company finance in the course of restructuring.

The price of restructuring factoring is higher than the price of other types of factoring (debt factoring and liability factoring). Factor's high risk makes risk margin higher, which results in an increased cost of funds acquired from the factor. However, the price in this sort of transaction is not most important as restructuring factoring gives a company a chance to survive despite financial problems the company suffers from.

The primary effects of restructuring factoring for factors and factorees are: the application of restructuring factoring allows the factoree to survive despite financial problems, restructuring factoring makes financial costs high but the company liquidity is maintained, the payment for the factor for increased risk as well as the finance management know-how shared with the factoree is a high margin in comparison with other kinds of factoring.

The duration of a restructuring factoring agreement is set on individual basis, but it is usually not shorter than 2-3 years. It may be prolonged if need be; the factor may take advantage of the security and take over the company, if the restructuring proves unsuccessful and the company has some liabilities to the factor. The cooperation may be terminated if the restructuring is successful or restructuring factoring may be replaced by debt or liability factoring.

From the perspective of the company making use of restructuring factoring, it results in the shortening of liabilities turnover cycle due to payment of liabilities before maturity and the extension of trade liabilities turnover cycle

because the factor usually settles factoree's liabilities to suppliers and prolongs the deadlines for the factoree. The effects of restructuring factoring are the sum of effects of debt and liability factoring.

Net circulating capital management

According to the balance perspective, the net circulating capital is a part of circulating assets financed with fixed capitals (Michalski, 2005). From the capital perspective, the net circulating capital is a surplus of fixed capitals (own capitals and long-term liabilities) over fixed capitals (Ostaszewski and Cicirko, 2006). Thus, it is this part of fixed capital which remains after financing fixed assets and is to finance circulating assets (Skowronek-Mielczarek, 2003). The volume of corporate net circulating capital changes under the influence of changes in the level of fixed assets and fixed capitals.

The volume of net circulating capital is an important indicator of liquidity as it determines the company liquidity risk level. Apparently, companies which permanently lost the ability to settle their liabilities and as a consequence went bankrupt, had shown a negative level of net circulating capital for a long time (4 years) (Skowronek-Mielczarek, 2003). In practice, the financial liquidity is affected not only by the level of net circulating capital but also the adjustment of the net circulating capital level to the demand for the net circulating capital in a given company.

The demand for net circulating capital may be calculated in the following way:

$$ZKON = (OKZ + DSO - ODP) * PSD \ , \qquad (3)$$

Where, *ZKON* - net circulating capital demand; OKZ - period of stock conversion in days; DSO - period of receivables inflow in days; ODP - period of deferred payment in days.

If the demand for net circulating capital is higher than the level of net circulating capital, the company financial liquidity may be threatened. In such a situation it is necessary to raise the level of net circulating capital or reduce the demand for net circulating capital (Table 3).

Net circulating capital management includes the development of capital structure as well as management of corporate circulating assets which determine the demand for net circulating capital. There are three objectives of the net circulating capital management in a company. They are: rise in activity effectiveness, improvement of the capital structure and release of capital involved in the company activity (Ertl, 2004).

TABLE 3. METHODS OF RAISING THE LEVEL OF NET CIRCULATING CAPITAL AND REDUCTION OF DEMAND FOR NET CIRCULATING CAPITAL

Methods of raising the level of net circulating capital	
1. The decline in the value of fixed assets without the decline in the value of fixed capitals	- Sale of redundant fixed assets - Leaseback - Resignation from investment
2. The rise in the value of fixed capitals without the rise in the value of fixed assets	- Acquiring fixed capitals and leaving them in the company - Raising corporate basic capital, for example through raising shares of current shareholders or acquisition of a new investor - Incurring subordinated debt - Rise in long-term indebtedness, including long-term debt securities issue
Methods of reduction of demand for net circulating capital	
3. Shortening of liabilities turnover cycle	- Limitation in granting trade credits - Improvement of liabilities management effectiveness, including improved promptness of liabilities settlement, effective debt recovery, effect accompanying debt restructuring factoring - Debt cession, including debt and restructuring factoring
4. Shortening of stock turnover cycle	- Improvement of stock management effectiveness, including just-in-time system - Reduction in sales prices of goods and services, including seasonal sale
5. Extension of trade liabilities turnover cycle	- Negotiating longer periods of trade credit with suppliers - Trade liabilities settlement delays - Liability factoring and restructuring factoring

Source: Own material

The basic goal of corporate net circulating capital management is the maintenance of the optimal volume and structure of circulating assets and most advantageous structure of financing sources. The optimal level of circulating capital is to result in the minimization of the company liquidity risk, and at the same time to allow for possibly high profits.

Possibilities of using stepped coupon bonds and restructuring factoring as instruments of net circulating capital management

Analysing Table 3, one can notice that the level of net circulating capital is developed in the long-term as it is difficult to increase the value of engaged fixed capitals in the short-term if it is not to be accompanied by the rise in fixed assets. A company can incur a long-term loan most easily, but long-term loans are usually granted to finance investment needs which go together with the rise

in the value of corporate fixed assets. On the other hand, the rise in the value of own capitals occurring irrespective of the rise or fall in the value of fixed assets results from long-term operations. The sale of fixed assets is seldom possible. As a rule, there is a long time from the selling decision till the moment they have been actually sold and payment received. Leaseback is a perfect way to raise the level of own capitals. However, it is not free from flaws. Namely: a company can make use of it only once, this type of lease is least willingly offered by lessors and the condition of leaseback use is the possession of assets with the clear mortgage established in favour of the company's creditors. In such a situation, the issue of long-term debt securities, which are a kind of loan, is a perfect way of raising the level of corporate net circulating capital. The company does not have to use the funds acquired from the issue for a particular purpose, which in the case of a long-term bank loan is the purchase of fixed assets.

If a company is in financial trouble, financing it by creditors is connected with a higher risk for them. A company with a negative or low level of net circulating capital, if this capital is not enough to meet the demand for it, has a low rating finds it difficult to acquire bank financing. For companies with a low rating looking for a source to raise the level of net circulating capital it is a good solution to issue long-term high risk debt securities. On the basis of the survey conducted on a group of Krakow companies in the years 1998-2001 it was found out that the negative value of net circulating capitals (the disobeying of the golden rule of financing) allows for the anticipation of a company collapse threat (Rutkowska, 2005).

The decline in the demand for net circulating capital is connected with decisions in relation to the operational activity. They are the decisions of short-term reference. The demand may be reduced through the shortening of the operational cycle, i.e. shortening liabilities turnover cycle or stock turnover cycle, or extension of the settlement cycle of company's liabilities to suppliers. Factoring may be applied in order to shorten liabilities turnover cycle (debt factoring) or extension of trade liabilities settlement cycle (liability factoring). Restructuring factoring combines the services of debt and liability factoring, apart from well-developed additional services not connected with the financed debts and liabilities. The effect of its application is: the shortening of liabilities turnover cycle as the factor pays to the factoree for the transferred debts before maturity, the improvement of current liabilities management effectiveness as an effect of professional operations of the factor which is a financial institution (lower risk of cooperation with incredible and insolvent debtors, effective monitoring of liabilities, higher pace of undertaken activities), the improvement of debt recovery operations as an effect of help of factor's debt recovery staff and lawyers, the extension of liabilities payment periods as an effect of factor's negotiation with suppliers and guarantees granted by it to suppliers, the extension of trade liabilities turnover cycle following the extension of liabilities payment periods to the factor entering into the rights of

satisfied creditors on the basis of subrogation, rating improvement as an effect of liabilities management effectiveness by the factor.

Conclusion

Net circulating capital management includes two major processes: the development of net circulating capital value and the development of net circulating capital demand. These two processes have to be closely connected. The coordination of these two processes results in the adjustment of the level of net circulating capital to the demand. It results in the maintenance of optimal level of net circulating capital, i.e. the level allowing for safe business operations but at the same time allowing for the generation of profit in the company.

In order to adjust the level of net circulating capital to the needs, the company may want to raise the value of net circulating capital. One of the ways to raise it is to issue long-term debt securities of the stepped coupon bond construction. In the case of companies suffering from financial problems, the proper solution would be to issue long-term high risk bonds.

The application of restructuring factoring is a method to adjust the demand for net circulating capital to the level of net circulating capital in companies in financial difficulty. Restructuring factoring causes shortening of liabilities turnover cycle and extension of trade liabilities turnover cycle. It results in the shortening of cash conversion cycle and reduction in the demand for net circulating capital.

References

Ertl, M., 2004. Aktives Cashflow-Management. Liquiditätssicherung durch wertorientierte Unternehmensführung und effiziente Innenfinanzierung, Vahlen, München

Michalski, G., 2005. Financial liquidity in SMEs [Płynność finansowa w małych i średnich przedsiębiorstwach], in Polish, PWN, Warsaw

Ostaszewski, J., Cicirko T., 2006. Joint-Stock Company's Finance [Finanse spółki akcyjnej], in Polish, Warszawa: Difin

Rutkowska J., 2005. „Utrata płynności czy wypłacalności? - główna determinanta zagrożenia kontynuowania działalności polskich przedsiębiorstw" (Loss of liquidity or solvency? - the major determinant of the threat to the continuity of operations of Polish companies), in: J. Ostaszewski (ed.), Finanse przedsiębiorstwa (Corporate finance), Oficyna Wydawnicza SGH w Warszawie, Warsaw, pp.351-57

Skowronek-Mielczarek, A., 2003. SMEs. Sources of Financing [Małe i średnie przedsiębiorstwa. Źródła finansowania], in Polish, Warsaw: C.H. Beck