




“The impact of financing policy on the cost of debt”

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THE IMPACT OF FINANCING POLICY ON THE COST OF DEBT

Abstract

The cost of debt is a key element to define the amount of the regular interest payments of a company and its business value. It is used for indicators that warn of the economic crisis, which is relevant for the countries where most companies are financially dependent on liabilities. The formalized criteria for the types of financing policy, improved procedure for the cost of debt calculation make it possible to reveal policy with the capital structure that minimizes the cost of debt.

The study is based on Ukrainian food processing companies for the period 2013–2020. The studied database was distributed by the types of financing policies: 22% of the cases have a conservative policy, 15% – moderate, 26% – aggressive, 37% – super-aggressive.

The results show that the highest weighted cost of debt (24.1%) belongs to the conservative policy, which replaces negative equity by the expensive long-term debts, as well as super-aggressive policy (20.8%) with trade payable that is near half of the capital, and long days payable outstanding. A company can reduce the cost of debt relying on non-interest-bearing liabilities and trade payable if its days payable outstanding are kept at the industrial level or below. Moderate and conservative financing policies, which are based on equity and avoid debts, provide the lowest weighted cost of debt: 2.1% and 1.2%.

Thus, choosing the desired type of financing policy for the company, it is possible to form a capital structure that will reduce the cost of debt.

Keywords

interest-bearing liability, trade payable, weighted cost of debt, conservative, moderate, aggressive policy, food processing industry, Ukraine

JEL Classification

G21, G32, L66, O16

INTRODUCTION

When a company implements a conservative, moderate or aggressive financing policy, it varies the sources and amount of the liabilities. This determines their cost and affects the capital and business value in general. The cost of debt forms those borrowing costs that must be paid regularly and on time, regardless of the financial result. The determination of the cost of debt is especially relevant for Ukrainian enterprises, which are characterized by the super-aggressive financing policy and form their financial resources mainly through debts (as of June 30, 2020 – 72% of the capital) (State Statistics Service of Ukraine, n.d.a).

The interest coverage ratio (EBIT-to-financial expenses) (Baños-Caballero et al., 2014) as well as debt service ratio (financial costs-to-profit) are considered indicators of the enterprise's creditworthiness. Besides, the debt service ratio is capable to signal the upcoming financial crisis at the macroeconomic level. This indicator can be the basis for improving country's monetary policy (Drehmann & Juselius, 2012).

Aggressive policy is relatively cheaper to service debt than the conservative one. It relies on the short-term liabilities, whose interest rates are lower than the cost of the long-term bank loans or equity as sources of the conservative policy (Ross et al., 1996).

However, the details necessitate further investigations of the financing policy's impact on the cost of debt. Firstly, it concerns the improvement of the procedure for its calculation. Usually, it is based on the company's financial costs as a result of the interest rates on loans, bonds, etc. The trade payable is a non-interest-bearing liability, so it is ignored. However, the previous studies provide the method of calculating its cost through the lost discount and the potential penalties.

Secondly, the variety of conservative, moderate and aggressive financing policies is identified depending on the capital structure. Thus, there are variants of the conservative policy, which can lead to increasing and decreasing of the cost of debt. It also applies to moderate and aggressive policies. Therefore, it calls into question the unambiguous conclusion on the expensiveness of conservatism and cheapness of aggressive financing policies.

Revealed details determine the relevance of the clarification of the cost of debt and the impact of different variants of financing policies on it. Thus, the financial manager will be able to choose the type of policy with the appropriate capital structure to minimize the cost of debt.

1. THEORETICAL BASIS

The investigation of the impact of financing policy on the cost of debt requires the formalization of its type. The conservatism, moderation, or aggressiveness of policy depends on the ratio of the long and short-term capital in the assets financing (Brealey et al., 1995).

Nevertheless, assessing the influence of policy on the enterprise's activity, current studies use only the components of the working capital's management and financing. Thus, the days payable outstanding are used as an indicator for analysis of financing policy of American firms (Cumbie & Donnellan, 2017). The degree of conservatism (aggressiveness) of financing policy for firms listed in the Tehran and Colombo Stock Exchange, companies from Malaysia, Germany, Austria, and Switzerland is determined by the duration of the cash conversion cycle (Musazadeh et al., 2014; Mohamad & Saad, 2010; Arachchi et al., 2017; Hofmann & Martin, 2016). In the case of Indonesian firms, the financial leverage is defined for this purpose (Sianipar & Prijadi, 2019). However, the participation of the capital directly in the assets financing cannot be traced.

Previous studies formalized the type of financing policy that will be used in this study. The methodology is based on the share of net working capital (the difference between current assets and current liabilities) in the current assets of the enterprise. If the share of net working capital (NWC) is equal to

or more than 60% of the current assets, it comes to a conservative policy. If the share is within 40-59%, the company has a moderate policy, if it is less than 39% – aggressive. There is a super-aggressive financing policy when the enterprise is characterized by the negative NWC.

Usually, under the conservative policy, the company borrows long-term debts in an amount more than necessary. This leads to higher overall costs. In the case of the aggressive policy, permanent assets can be financed at a lower interest rate on current liabilities. However, there are uncertain future financial costs (Panigrahi, 2014).

Different factors influence the type of financing policy: the enterprise's size; access to external long-term debt and equity sources; seasonality; industry; and possibility of inter-business financing. These factors explain why small business sometimes is forced to finance its permanent assets by current liabilities (Andrews et al., 1959). In the case of Bulgarian companies, there were changes in the capital structure during the crisis and post-crisis period (2007–2015). Due to the retained earnings and debts to related parties, they provided independence and flexibility, decreasing the average cost of working capital financing (Raykov, 2017).

The previous results revealed different variants for implementing the same type of financing policy. For example, there is a conservative policy with a high degree of financial independence, which minimizes the amount and cost of debt.

And vice versa, the conservative policy exists with negative equity, which is offset by the raising of expensive non-current debts. Similarly, an aggressive policy that focuses on a cheap short-term bank loan or non-interest-bearing liabilities is possible along with an aggressive policy, which attracts trade credit with long days payable outstanding. It leads to the lost discount and the likelihood of penalties.

Therefore, to identify different variants of the conservative, moderate and aggressive financing policy, the structure of their financial resources will be additionally defined.

There are theoretical approaches that determine the impact of the capital structure on the cost of debt in different ways. According to the Net Income and Net Operating Income Approaches by Durand (Block & Hirt, 1989), regardless of the amount of the borrowed capital, the cost of debt remains constant. All changes are reflected in the cost of equity and WACC. In the case of the traditional approach, the critical level of the debt's share is determined. After its passing, the cost of debt, as well as the capital, begins to grow.

Modigliani and Miller insist that there is no link between the cost of capital and its structure at the enterprise (Block & Hirt, 1989). As long as the cost of debt is cheaper than equity, the increase of the debt amount is always offset by the growth of the cost of equity. Moreover, due to the tax savings' effect, the cost of debt is able to reduce.

There are some points of view concerning the determination of the cost of debt. It can be defined by the financial expenses divided by the interest-bearing debts (Septian & Panggabean, 2016). On the other hand, the cost of debt is the interest rate including the tax-saving – after-tax cost of debt. In the case of bonds, the cost of the debt can be determined through the yield to maturity (Ross et al., 2013).

According to Damodaran (2012), the cost of debt, in particular for companies in the emerging markets, depends on such variables as the riskless rate, country default spread in the emerging markets, company default spread, and tax advantage associated with debt.

Trade payable is considered a non-interest-bearing liability because it does not generate any cost. It is ignored when calculating WACC (Damodaran, n.d.; Kratz & Kroflin, 2016). Despite this, trade payable is an important source of debt for enterprises all around the world. In particular, in Ukraine, it is 30% of the companies' capital (State Statistics Service of Ukraine, n.d.b). Previous studies provided suggestions for calculating the cost of trade payable. It is pay-free. However, in the case of its attraction, the enterprise refuses early prepayment and loses the discount. It is a hidden cost of trade payable that can adjust the procedure for determining the cost of debt.

In this regard, guided by formalized criteria for the type of the financing policy and improved procedure for the cost of debt calculation, this study aims to reveal the financing policy with a relevant capital structure that minimizes the cost of debt.

The borrowed capital is presented by three sections in the balance sheet of Ukrainian enterprises: long-term and current liabilities, provisions; liabilities directly associated with assets held for sale (Ministry of Finance of Ukraine, 2013). The long-term and short-term bank credits, other long-term and short-term liabilities are the interest-bearing liabilities. They generate the financial costs. According to the international and domestic accounting standards, the borrowing (financial) costs include interest on bank overdrafts and borrowings, finance charges on finance leases (Deloitte, n.d.), which determine the cost of raising and servicing of the interest-bearing liabilities of the enterprise. The ratio of the financial costs to the interest-bearing liabilities, adjusted for the tax shield, can determine the cost of this source of debt (Formula 1):

$$cost_{IBL} = \frac{FC}{IBL} \cdot (1 - T), \quad (1)$$

where $cost_{IBL}$ – the cost of the interest-bearing liabilities, FC – financial costs, IBL – the amount of the interest-bearing liabilities, including the long-term and short-term bank credits, other long-term and short-term liabilities, T – tax profit.

The cost of trade payable is defined as the average lost discount (ALD) calculated by the method of

failing to take a cash discount and method of the effective annual rate.

Formula 2 shows the potential penalties to the cost of trade payable:

$$PP = \left(\frac{DDR}{365} \cdot TP \cdot TLP \right) / TP, \quad (2)$$

where PP – level of the potential penalties, DDR – double discount rate, TP – trade payable, TLP – term of late payment as a difference between days payable outstanding of the enterprise and average days payable outstanding in the industry.

Thus, if the term of late payment is positive, the days payable outstanding of the enterprise is longer than in the industry. If it is not an individual agreement with the supplier, this company can expect potential penalties for such delay. The amount of the penalties is set by domestic law. In Ukraine, it is the double discount rate of the National Bank of Ukraine for each day of delay (The Verkhovna Rada of Ukraine, 1996).

To unite the interest-bearing liabilities and trade credit into one cost of debt, the principle of WACC calculation is used. Thus, the weighted cost of debt is calculated by Formula 3:

$$wC_{debt} = \frac{IBL}{C} \cdot cost_{IBL} \cdot (1-T) + \frac{TP}{C} \cdot (PP + ALD), \quad (3)$$

where wC_{debt} – weighted cost of debt, C – total capital, ALD – average lost discount.

Thus, the weighted cost of debt depends on the share of the particular liability in the capital and its cost. So-called non-interest-bearing liabilities (accounts payable by the budget, insurance, wages; current provisions; accruals and deferred income) is not included in wC_{debt} .

2. RESULTS

45 companies from the food processing industry of Ukraine were selected for the analysis. 22 of them are the producers of the bread and bakery

products; cakes for the short-term storage; products of the flour and cereal industry; hard chuck and biscuits; flour confectionery, cakes, and pastries for the long storage; cocoa, chocolate, and sugar confectionery. 23 enterprises belong to the dairy industry (milk processing, production of butter, cheese, and ice cream). The analyzed firms offer the consumer goods that are in demand not only among the population of the country but also exported abroad. The study is conducted based on the annual financial statements of the chosen companies for 2013–2020, which are publicly available (Stock market infrastructure development agency of Ukraine, n.d.a). Thus, the number of selected enterprises and the period of their financial report provide the database of 318 cases.

The average level of NWC in the current assets among the enterprises from the database is negative (–34%), which means a super-aggressive policy. At the same time, domestic companies are trying to maintain a high level of equity, about 46% of the financial resources. The long-term debts account for 10%. The predominant role among the debts belongs to the current liabilities – on average 44% of the total capital. It should be noted that 20% are formed by trade payable and 13% by non-interest-bearing liabilities.

The average share of the NWC in the current assets is 79% under the conservative policy (22% of all cases). The share of equity in the financial resources is 73%. This policy has approximately the same shares of the current and long-term liabilities in the capital (13% and 14% respectively). Trade payable forms a small part – 8%. The average days payable outstanding is 34.

Two main variants can be distinguished among the cases of the conservative policy:

1. 59 of 71 cases are implemented due to the significant role of equity in the capital (variant 1.1, Table 1). The average share of equity – 82% of the capital.
2. However, conservatism can be ensured not only by equity. Thus, 11 of 71 cases are secured by the raising of the long-term debts – on average 57% of the capital. At the same time, the equity is only 27% (variant 1.2, Table 1).

Table 1. Variants of the financing policy implementation

Source: Calculated by the author.

Type/variant of the policy	Cases	NWC/CA, % ¹	Average share of the total capital, %:						Days trade payable outstanding, days	Weighted cost of debt, %
			Equity	CL ²	LT ³	Interest-bearing liabilities	Trade payable	Non-interest-bearing liabilities ⁵		
1	2	3	4	5	6	7	8	9	10	11
1. Conservative:	71	79	73	13	14	15	8	4	34	2.4345
Variant 1.1	59	80	82	13	5	6	7	5	33	1.1874
Variant 1.2	11	73	27 ⁴	16	57	60	11	3	36	7.1573
Variant 1.3	1	62	-1 ⁸	25	76	85	14	1	42	24.059
2. Moderate:	48	50	56	31	13	18	17	10	195	3.2814
Variant 2.1	38	50	65	29	6	10	19	6	49	2.0997
Variant 2.2	9	48	26 ⁴	41	33	35	9	29	825	7.8498
Variant 2.3	1	44	-17 ⁸	23	94	106	10	1	58	7.0693
3. Aggressive:	82	21	38	48	14	25	22	14	59	3.7385
Variant 3.1	39	23	53	40	7	16	23	8	68	2.5952
Variant 3.2	43	19	25 ⁴	55	20	33	21	20	51	4.7754
Variant 3.3	25	16	37	54	9	13	40 ⁶	10	100	3.3479
Variant 3.4	12	18	24	62	14	22	12	42 ⁷	31	3.8576
4. Super-aggressive:	117	-174	30	66	4	24	28	17	265	11.307
Variant 4.1	36	-281	65	33	3	6	19	10	122	2.9618
Variant 4.2	71	-137	19 ⁴	76	5	30	30	22	355	16.22
Variant 4.3	10	-45	-15 ⁸	111	4	51	48	15	141	6.4661
Variant 4.4	55	-173	18	77	5	23	47 ⁶	11	480	20.772
Variant 4.5	22	-101	19	73	8	9	15	57 ⁷	87	3.4618
5. All types of the financing policies	318	-34	46	44	10	21	20	13	150	6.163

Note: 1 – net working capital/current assets; 2 – current liabilities; 3 – long-term liabilities; 4 – those cases are selected, where equity is positive, but less than 40% from the total capital; 5 – column 9 = 100% – column 4 – column 7 – column 8; 6 – those cases are selected, where trade payable is equal or more than 30% from the total capital; 7 – those cases are selected, where non-interest-bearing liabilities are equal or more than 30% from the total capital; 8 – those cases are selected, where equity is negative.

The moderate policy (15% of all cases) is characterized by the increase of the current liabilities – on average 31% of the financial resources. The trade payable's share is growing – up to 17% and its days payable outstanding – up to 195 days.

The moderate financing policy is also implemented in different ways. There are 38 of 48 cases, which are more focused on equity (variant 2.1, Table 1). The average share in the capital is 65%, as long as the share of trade payable – near 19%. 9 cases of the moderate policy have equity, which share is less than 40%. This situation is offset by the long-term debts – 33% of the financial resources (variant 2.2, Table 1).

One of the conservative and one of the moderate cases are characterized by negative equity, so the long-term liabilities reach respectively 76% and 94% of the capital (variant 1.3 and variant 2.3, Table 1).

Under the aggressive policy (26% of all cases), enterprises form half of the financial resources at the expense of the current liabilities, in particular 22% with the help of trade payable. The average days payable outstanding are 59 days. There are next variants of the aggressive policy:

1. If the aggressive policy (39 cases from 82) supports a high level of equity (on average 53% of the capital), it provides an opportunity to avoid expensive long-term sources of funding. At the same time, 40% of the financial resources are formed by current liabilities (variant 3.1, Table 1).
2. 43 of 82 aggressive cases compensate reduction of equity (down to 25% of the capital) attracting long-term bank loans – 20% of the financial resources and current liabilities – 55% (variant 3.2, Table 1).

Table 2. The cost of the interest-bearing liabilities of Lagoda

Source: Calculated by the author.

Years	Interest-bearing liabilities, thousand UAH	Financial costs, thousand UAH	Costs of interest-bearing liabilities, %
1	2	3	4
2013	145,431	8,865	4.9375
2014	15,302	6,616	35.4537
2015	20,559	3,917	15.6230
2016	45,547	4,516	8.1303
2017	43,447	4,383	8.2723
2018	33,752	3,892	9.4556
2019	45,724	5,623	10.0841
2020	46,138	5,154	9.1601

Note: Column 2 – total amount of long-term and short-term bank credits, other long-term and other current liabilities; column 4 is calculated by formula 1; in 2013 tax profit in Ukraine – 19%, since 2014 – 18%.

- Among the variants of the aggressive policy considered above, next can be additionally distinguished:
- 25 of 82 cases with the aggressive policy attract the trade payable in amount 40% of the capital. Such a share can significantly influence the activity of the enterprise (variant 3.3, Table 1).
- 12 cases form about 42% of the financial resources due to the non-interest-bearing liabilities to reduce the cost of debt (variant 3.4, Table 1).

The super-aggressive policy (37% of all cases) is characterized by an insignificant volume of the long-term borrowed capital and the prevalence of the current liabilities (66% of the financial resources). In particular, trade payable forms 28%.

One-third of the super-aggressive cases (36 of 117) try to keep financial independence (variant 4.1, Table 1). Their average share of equity in the capital is 65%. 19% are formed by trade payable.

If the super-aggressive policy has equity less than 40%, it relies entirely on the current liabilities – up to 76% (71 of 117 cases, variant 4.2, Table 1).

10 cases have negative equity that is why the current liabilities reach 111% of the capital (variant 4.3, Table 1).

While the super-aggressive policy avoids long-term debts, special attention can be paid to the

influence of trade payable. From the cases with-in variants 4.1, 4.2, and 4.3, 55 have the average share of trade payable – 47% and days payable outstanding – 480 days (variant 4.4, Table 1).

22 of 117 cases with super-aggressive policy managed to attract non-interest-bearing liabilities. Therefore, variant 4.5 has 57% of the capital, composed of such sources.

Considering the aim of this study, it is necessary to define the weighted cost of debt. The procedure of its calculation is illustrated in the example of the company Lagoda (Stock market infrastructure development agency of Ukraine, n.d.b). During 2013–2020, this company is characterized by the financial costs that can be the result of the raising of the interest-bearing liabilities (Table 2).

The cost of trade payable is based on the average lost discount (Table 3).

Based on the average days payable outstanding in the industry, it is possible to define the term of late payment of a particular company. During this term, potential penalties, which threaten the business entity, can be accrued (Table 4).

The same procedure, presented in Tables 2-4, is made for every of 22 enterprises (producers of the bread and bakery products; cakes for the short-term storage; products of the flour and cereal industry; hard chuck and biscuits; flour confectionery, cakes, and pastries for the long storage; cocoa, chocolate, and sugar confection-

Table 3. Lost discount of Lagoda

Source: Calculated by the author.

Year	Discount period, days	Days payable outstanding of the enterprise (final due date), days	Interest rate on short-term bank loan in UAH, %	Lost discount by the method of failing to take a cash discount, %	Lost discount by the method of effective annual rate, %	Average lost discount, %
1	2	3	4	5	6	7
2013	31	38	14.1	0.272	0.251	0.262
2014	34	46	16.3	0.522	0.48	0.501
2015	27	62	21	2.01	1.82	1.915
2016	26	85	17.6	2.82	2.6	2.71
2017	24	90	13.8	2.48	2.33	2.405
2018	23	87	17.8	3.08	2.85	2.965
2019	19	103	17.5	3.95	3.66	3.81
2020	27	96	9.8	1.85	1.75	1.8

Note: Column 2 – minimum days payable outstanding in the industry; column 4 – annual interest rate on short-term bank loan in UAH, % (National Bank of Ukraine, n.d.); column 5 is calculated by:

$$\frac{\text{discount, \%}}{100\% - \text{discount, \%}} \cdot \frac{360}{\text{final due date} - \text{discount period}}$$

it is equated to the amount in column 4; column 6 is calculated by:

$$\text{effective annual rate} = (1 + \text{percentage rate})^{\text{compounding periods per year}} - 1,$$

where: compounding periods per year = 365/(final due date – discount period); percentage rate = discount/(1 – discount); effective annual rate is equated to the amount in column 4; column 7 is the average value of lost discount from column 5 and column 6.

Table 4. Potential penalties of Lagoda

Source: Calculated by the author.

Years	Average days payable outstanding in the industry, days	Days payable outstanding of the enterprise, days	Term of late payment, days	Double discount rate, %	Trade payable, thousand UAH	Double discount rate for the term of late payment, %
1	2	3	4	5	6	7
2013	108	38	-70	13.5	21,468	–
2014	119	46	-73	24	21,956	–
2015	120	62	-58	53.18	62,433	–
2016	93	85	-8	34.6	54,273	–
2017	91	90	-1	26.44	63,051	–
2018	74	87	13	34.62	52,069	1.2641
2019	78	103	25	33.38	55,665	2.3318
2020	106	96	-10	14.75	52,487	–

Note: Column 4 = column 3 – column 2; column 5 – double discount rate is a level of the penalties for the late payment according to Ukrainian legislation; column 7 is calculated by formula 2.

Table 5. Constants for determining the cost of trade payable in the dairy industry

Source: Calculated by the author.

Years	Discount period, days	Average days payable outstanding in the industry, days
1	2	3
2013	8	28
2014	9	42
2015	9	32
2016	10	44
2017	11	40
2018	13	47
2019	14	46
2020	16	45

ery) and 23 enterprises, that belong to the dairy industry (milk processing, production of butter, cheese, ice cream) for the selected period 2013–2020. Table 5 shows the constants-discount period and the average days payable outstanding in the industry.

Table 6. Weighted cost of debt of Lagoda

Source: Calculated by the author.

Years	Share of interest-bearing liabilities in the capital (decimal)	Costs of interest-bearing liabilities, %	Share of trade payable in the capital (decimal)	Average lost discount, %	Double discount rate for the term of late payment, %	Weighted cost of debt, %
1	2	3	4	5	6	7
2013	0.59	4.9375	0.09	0.262	–	2.9436
2014	0.14	35.4537	0.2	0.501	–	4.9385
2015	0.13	15.6230	0.39	1.915	–	2.7482
2016	0.25	8.1303	0.3	2.71	–	2.8821
2017	0.24	8.2723	0.34	2.405	–	2.7652
2018	0.21	9.4556	0.32	2.965	1.2641	3.3292
2019	0.26	10.0841	0.31	3.81	2.3318	4.5362
2020	0.26	9.1601	0.29	1.8	–	2.8813

Note: Column 3 = column 4 from Table 2; column 5 = column 7 from Table 3; column 6 = column 7 from Table 4; column 7 = column 2 * column 3 + column 4 * column 5 + column 4 * column 6.

Using these components, it is possible to determine wC_{debt} for Lagoda (Table 6).

According to the procedure, given in Tables 2-6, the weighted cost of debt of all 318 cases is calculated.

3. DISCUSSION

It is revealed that each type of financing policy has different variants of implementation, depending on the structure of financial resources. Thus, 83% of the cases of the conservative policy, 79% of the moderate, 48% of the aggressive, and 31% of the super-aggressive policy have a significant part of equity in the capital. The rest of the cases compensate for the lack of equity by long-term or short-term liabilities.

As long as aggressive and super-aggressive policies are mainly based on the current debts, there are variants that attract the trade payable in amount more than 30% from the total capital (30% of the cases of the aggressive and 47% of the super-aggressive policy).

In the same way, 15% of the cases of the aggressive and 19% of the super-aggressive policies raise the non-interest-bearing liabilities, which form more than one-third of their financial resources.

12 of 318 surveyed cases have total financial dependence from debts as a consequence of uncovered losses and negative equity.

Based on the financial report of Lagoda it can be observed, that in 2020 the company raised the interest-bearing liabilities in the amount of 46,138 UAH (Table 2, column 2). They contained short-term bank loan and other current liabilities, which generated the financial costs of 5,154 UAH (Table 2, column 3). The ratio of the financial costs to these liabilities, adjusted for 18% of tax profit, defines the costs of this capital's source – 9.16% (Table 2, column 4). Such a procedure can be applied for each of 318 cases.

Results of the determination of lost discount for Lagoda (Table 3) can be interpreted in the following way. Lagoda is a producer of bread and bakery goods. For example, in 2020 the minimum term of days payable outstanding among enterprises in this industry was 27 days. It is equated to the discount period and is a constant for any analyzed company from this industry in 2020. Such constants for other years are presented in column 2, Table 3. The fixed figure will be also the interest rate on an alternative source of financing – a short-term bank loan (Table 3, column 4). The actual days payable outstanding of Lagoda (Table 3, column 3) determines the individual cost of its trade payable. Thus, taking into account 96 days payable outstanding in 2020, the level of lost discount for Lagoda by the first method is 1.85% (Table 3, column 5), by the method of the effective annual rate – 1.75% (Table 3, column 6), the average – 1.8% (Table 3, column 7). The defined amount of lost discount is its marginal level, at which it will not be profitable for the company to apply to the bank. In that case, the company refuses any possi-

bility to borrow cash in the bank for providing the early payment and that is why loses the discount.

During 2013–2017 and 2020, days payable outstanding of Lagoda was less than the average level in the industry, so there were no potential penalties. Since 2018, the positive difference is growing. For example, in 2019 days payable outstanding of the company are 103 days, while in the industry – 78 days. 103 days can be an individual agreement between suppliers and Lagoda, but 25 days of delay can be a signal to the company about potential penalties. Based on domestic legislation, the level of penalties is established as a double discount rate for the period of late payment. In 2019, it was 2.3318% (Table 4, column 7).

In the same way, the lost discount and potential penalties are calculated annually for each enterprise. Herewith, the main constants for this are discount period and average days payable outstanding, defined in the surveyed industry. Lagoda belongs to the producers of bread and bakery products; cakes for the short-term storage; products of the flour and cereal industry. In 2020, the discount period was 27 days, and average days payable outstanding – 106 days. Compared to 2013 there are no significant changes in these constants (Table 3, 4, column 2).

In the dairy industry the discount period and average days payable outstanding, despite the growth during 2013–2020, are shorter. In 2020, they were 16 and 45 days respectively (Table 5).

Table 6 presents the example of the calculation of the weighted cost of debt. During 2013–2020 Lagoda did not change its wC_{debt} much. Its average rate was 2.8441. The exception is 2014, 2018, and 2019. In 2014, it was connected with the high cost of interest-bearing liabilities. 3.3% in 2018 and 4.5% in 2019 were explained by long days payable outstanding of the enterprise, which generated potential penalties for late payment and enlarged wC_{debt} (Table 6, column 7).

Further study will analyze the impact of different variants of conservative, moderate, aggressive financing policies on the weighted cost of debt of the food processing industry in Ukraine. The level of wC_{debt} among the studied database is 6.163%

(Table 1, column 11). There is an insignificant relationship between the share of NWC in the current assets and wC_{debt} . The correlation coefficient is 30.5% and negative. As long as the conservative financing policy predominantly is based on equity and avoids debts, the increase of NWC leads to declining of wC_{debt} .

The weighted cost of debt among cases of the conservative policy is 2.4345%. At the same time, the correlation coefficient between NWC shares and wC_{debt} is inversely proportional (–34%).

However, if considering variants of the conservative policy, the result will be different. The insignificant share of debt in the capital explains low wC_{debt} in variant 1.1 of the conservative policy – 1.1874. The replacement of equity with a long-term debt to ensure the conservative policy causes a significant increase in the weighted cost of debt in variant 1.2. On average 60% of these enterprises' capital is raised by the interest-bearing liabilities, so wC_{debt} for this variant – 7.1573. Interest-bearing liabilities in variant 1.3 reach 85% and wC_{debt} is the highest – 24.0588 (Table 1, column 11).

The weighted cost of debt under the moderate policy is slightly higher – 3.2814. The average days payable outstanding is long – 195 days.

As the companies from variant 2.1 support independence from debts and control the term of days payable outstanding (on average 49 days), they manage to decrease wC_{debt} to 2.0997.

However, when 35% of the capital belongs to interest-bearing liabilities and the trade payable has a long days payable outstanding, these cause high wC_{debt} – 7.8498 (variant 2.2).

Variant 2.3 has significant wC_{debt} – 7.0693 and the interest-bearing liabilities exceed total capital due to the negative equity.

All the cases of the aggressive policy have on average 25% of the interest-bearing liabilities in the financial resources, which influences wC_{debt} negatively. It is 3.7385.

Variant 3.1 of the aggressive policy supports a high level of equity that reduces wC_{debt} to 2.5952. The

companies, which belong to variant 3.2, accumulate interest-bearing liabilities up to 33% of the capital. This leads to the growth of $wC_{debt} = 4.7754$.

When the enterprises under the aggressive policy avoid significant long-term liabilities and focus on trade payable, the reduction of wC_{debt} is possible (variant 3.3, Table 1). Despite the long period of days payable outstanding (100 days), the weighted cost of debt is 3.3479. Variant 3.4 of the aggressive policy forms 42% of financial resources due to non-interest-bearing liabilities. Although, it did not significantly reduce wC_{debt} .

The super-aggressive policy has the longest days payable outstanding, compared to other types of financing policy – 265 days. Such a term certainly indicates that the companies, attracting trade payable, lost the opportunity to receive the discount and increased the likelihood of penalties for late payments. There is a significant level of weighted cost of debt – 11.307. However, there can be variants.

The financial independence of variant 4.1 helps to reduce wC_{debt} to 2.9618 under the super-aggressive policy. Another possibility to decrease the weighted cost of debt is the attraction of non-interest-bearing liabilities. If there is a majority of such debts (57% of the capital), wC_{debt} is 3.4618 (variant 4.5).

Variant 4.3 is characterized by a negative amount of equity, so the current liabilities-to-capital ratio is near 111%. Interest-bearing liabilities are half of the financial resources as well as trade payable. In this case, the days payable outstanding reaches 141 days on the average, and wC_{debt} is 6.4661.

When the companies have both interest-bearing liabilities and trade payable with long days payable outstanding (355 days), these lead to $wC_{debt} = 16.22$ (variant 4.2). The enterprises, which form around half of their capital at the expense of trade payable (47%), accompanied by significant days payable outstanding, have large $wC_{debt} = 20.7724$ (variant 4.4).

According to the results, the list of the financing policies by the reducing of the weighted cost of debt is as follows:

1. Variant 1.3 (conservative policy).
2. Variant 4.4 (super-aggressive policy).
3. Variant 4.2 (super-aggressive policy).
4. Variant 2.2 (moderate policy).
5. Variant 1.2 (conservative policy).
6. Variant 2.3 (moderate policy).
7. Variant 4.3 (super-aggressive policy).
8. Variant 3.2 (aggressive policy).
9. Variant 3.4 (aggressive policy).
10. Variant 4.5 (super-aggressive policy).
11. Variant 3.3 (aggressive policy).
12. Variant 4.1 (super-aggressive policy).
13. Variant 3.1 (aggressive policy).
14. Variant 2.1 (moderate policy).
15. Variant 1.1 (conservative policy).

If the calculation of weighted cost of debt involves trade payable and takes into account the lost discount and the probability of potential penalties, they have a significant impact on this element of WACC. Variants 4.4 and 4.2 of the super-aggressive policy with a high share of the trade payable and long days payable outstanding are characterized by the high weighted cost of debt.

In addition, variants of the conservative and moderate policy can be observed, which have a small or negative amount of equity and attract long-term liabilities in order to ensure a significant share of NWC in the current assets. They generate financial costs that lead to increasing of wC_{debt} (variants 1.3, 2.2, 1.2, 2.3).

When a company cannot avoid an aggressive or super-aggressive policy, the weighted cost of debt can be reduced by maintaining a significant share of equity in the capital, minimizing interest-bearing liabilities as well as days payable outstanding, attracting various non-interest-bearing debts (4.3, 3.2, 3.4, 4.5, 3.3, 4.1, 3.1).

The lowest wC_{debt} objectively belongs to those variants of the conservative and moderate financing policy, which provide financial independence, try to keep the days payable outstanding at the average industrial level and below (variants 2.1, 1.1).

Obviously, conservative, moderate as well as aggressive financing policies influence wC_{debt} differently. The raising of interest-bearing liabilities,

including long-term and short-term bank loans, their predominance in the capital lead to the increase of the weighted cost of debt under any financing policy. As well as slowing down the days payable outstanding reduces the likelihood of early or timely payment, which leads to the loss of the opportunities to save money and even accrue the additional expenses for the company.

CONCLUSION

According to the purpose, the results of the study gave the possibility to reveal the type of financing policy with a relevant capital structure that minimized the cost of debt.

There are variants of conservative and moderate policies that can be implemented due to the significant role of equity in the capital (more than 40%). When there is a lack of equity, the implementation of these policies can be provided by the raising of long-term debts. Usual cases of aggressive and super-aggressive financing policies rely on the current borrowed capital, including trade payable and non-interest-bearing liabilities. However, aggressive as well as super-aggressive policies can also seek financial independence.

Improved methodology for estimating the weighted cost of debt, based on the share and cost of interest-bearing liabilities and trade payable, allow assessing the impact of conservative, moderate and aggressive financing policies on it.

The highest weighted cost of debt belongs to the variant of the conservative policy, which replaces negative equity with long-term interest-bearing debts. It is also high under the super-aggressive policy, which has a significant share of the trade payable and long days payable outstanding.

The aggressive policy can reduce the weighted cost of debt, diversifying the financial resources, relying on the interest-bearing liabilities, trade payable, days payable outstanding of which are kept at the industrial level or below.

Smaller weighted cost of debt may be within such variants of aggressive and super-aggressive policies that maintain a significant share of equity in the capital and attract various non-interest-bearing debts. The lowest weighted cost of debt belongs to moderate and conservative financing policies, which are independent of debts.

Using obtained results, it is possible to identify the relationship between the cost of debt and the cost of equity within any type of policy. It is important to reveal the influence of conservatism (moderation, aggressiveness) of financing on the weighted average cost of capital and other value indexes of the enterprises.

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