Управление структурой капитала: расчёт оптимального соотношения заемных и собственных средств для ПАО НЛМК

Мацнева Екатерина Александровна, студентка 4-го курса финансового факультета РЭУ им. Г.В. Плеханова, г. Москва, Российская Федерация

E-mail: ekaterina.macneva@gmail.com

Аннотация

В статье рассмотрено понятие «оптимальная структура капитала» и способы её расчёта, а также произведено практическое применение этой концепции. Предметом исследования является структура капитала ПАО НЛМК. Метод расчёта оптимальной структуры капитала, используемый автором, – минимизация WACC. Помимо этого, в статье представлен анализ базовых финансовых показателей деятельности ПАО НЛМК. Результатом исследования является рекомендация по оптимальному соотношению заемных и собственных средств для компании.

Ключевые слова: оптимальная структура капитала, заемные средства, собственные средства, WACC, источники финансирования.

Management of capital structure: calculation of optimal debt-to-equity ratio for PJSC Novolipetsk Steel

Matsneva Ekaterina Aleksandrovna, student, Plekhanov Russian University of Economics, Moscow, Russian Federation

E-mail: ekaterina.macneva@gmail.com

Abstract

In the article, the notion of optimal capital structure and methods of its calculation are considered as well as the practical implementation of this concept. The subject of the study is the capital structure of PJSC Novolipetsk Steel. Method used for calculation of optimal capital structure for PJSC Novolipetsk Steel – WACC minimization. Moreover, the analysis of basic financial and performance indicators is included into the article. The result of the study is author's recommendation on optimal debt-to-equity ratio for the company.

Keywords: optimal capital structure, debt, equity, WACC, sources of financing.

One of the tasks of financial management is to create such efficient capital structure that would allow company to have a stable position and opportunities to develop. Moreover, in practice, there is a relationship between the capital structure and the dividend policy of the corporation. This relationship is manifested in the fact that the capital structure depends on the profitability of own funds and the distribution rate of net profit for the payment of dividends and the development of production. [3] With a high return on equity, more net profit is left for the purpose of accumulating and replenishing current assets without prejudice to dividend payments to shareholders. Therefore, the relevancy of this topic is confirmed by the fact that the capital structure directly influences the achievement of a primary goal for a financial manager – maximization of shareholders' wealth.

There are two sources of financing the business – equity and debt. Equity is the own capital that the company has and it includes shares, authorized capital, reserves, retained earnings, etc. Debt is the funds that are borrowed for a certain period of time and have to be paid back at a certain interest. Both equity and debt have their costs as they both carry out the risk of company becoming bankrupt. [2] However, debt is considered to be cheaper than equity as, in case of bankruptcy, debt lenders are the first ones to receive their money and, hence, their risk is lower.

The financing decision has a direct effect on the weighted average cost of capital (further - WACC). WACC is the simple weighted average of the cost of equity and the cost of debt. The weightings are in proportion to the market values of equity and debt; therefore, as the proportions of equity and debt vary, so will the WACC. Therefore, as a company changes its capital structure, it will automatically result in a change in its WACC [1].

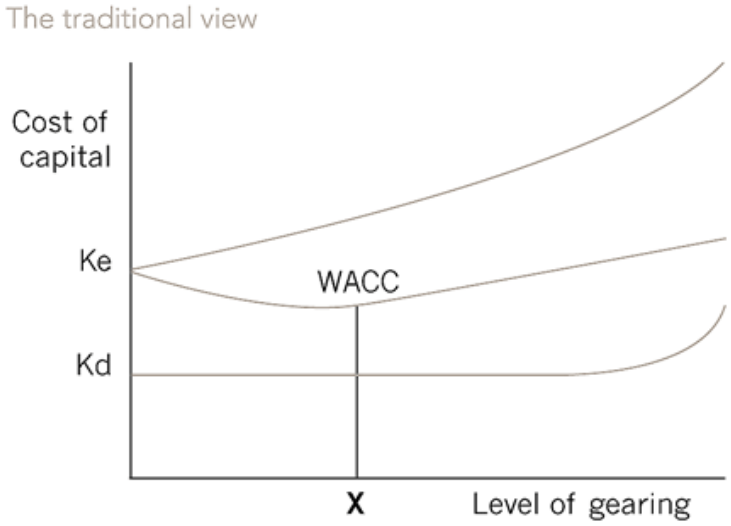

Fig. 1. Dependence of WACC on the level of gearing [4]

The optimal capital structure can be estimated by calculating the mix of debt and equity that minimizes the weighted average cost of capital (WACC) while maximizing its market value. The lower the cost of capital, the greater the present value of the firm's future cash flows,

discounted by the WACC. However, as a company gears up, interest payments rise, and reach a point that they are equal to the profits from which they are to be deducted; therefore, any additional interest payments beyond this point will not receive any tax relief. This is the point where companies become tax-exhausted [4]. That is why the optimal capital structure represented by the point X on Fig.1.

Moreover, there are several other factors determining the capital structure such as:

- sectoral features of the corporation's economic activities (nature of the finished product, duration of production and financial cycles, forms of settlements with customers and suppliers, etc.);
- business situation in the commodity and financial markets;
- the level of profitability of current activities;
- tax burden on the corporation;
- the degree of concentration of share capital (the desire of capital owners to maintain a controlling stake);
- the stage of the life cycle of a corporation (young companies with competitive products and new technologies may attract more borrowed capital for their development, while mature companies mostly use their own funds) [5].

NLMK Group is a leading international manufacturer of high-quality steel products with a vertically integrated business model. Due to the self-sufficiency in basic raw materials, energy and high technological equipment, NLMK is among the most efficient and profitable steel producers in the world.

Table 1. NLMK's market positions in 2018

Market	NLMK's share
Global slab market	25.4%
Russian steel production	22.4%
Russian rebar market	19.9%
Russian cold-rolled steel market	30.7%
Russian galvanized steel market	22.5%
Russian market of rolled products with polymer coatings	21.9%

According to financials, in 2018, EBITDA has increased by 35% compared to 2017 (to $ 3.6 billion). EBITDA margin has risen to record levels over the past 10 years and amounted to 30%. Free cash flow rose by 60% to $ 2.0 billion. The revenues were fluctuating in the last five years, net

income, however, has shown a strong positive tendency over that period. Earnings per share in 2018 were $ 0.37, which is 55% higher than in 2017.

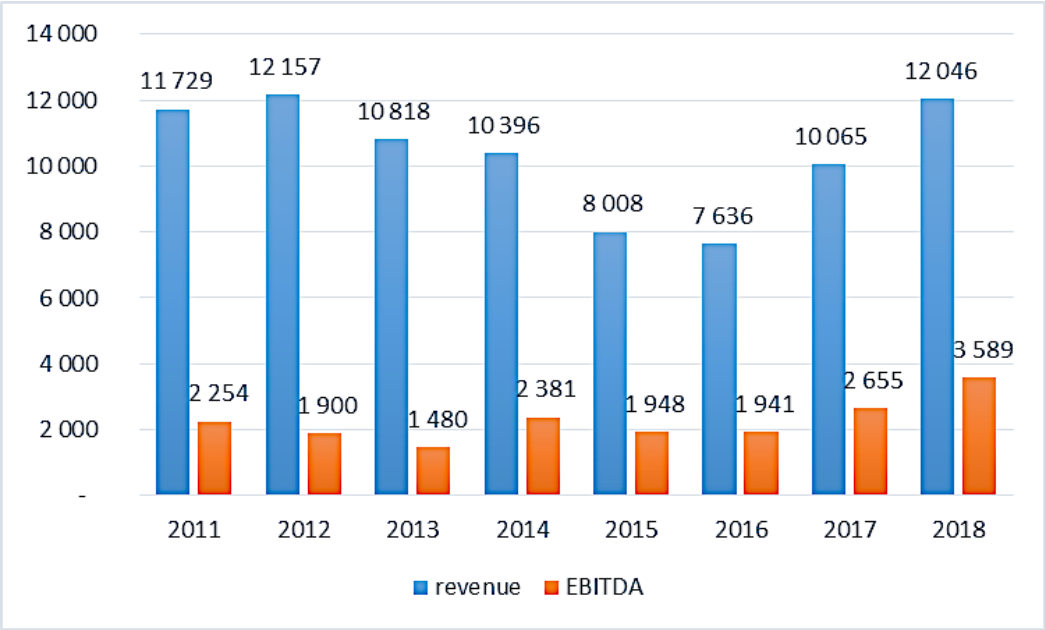

Fig. 2. Revenue and EBITDA growth, $ mln

From the analysis above it is seen that the company is now at the stage of recovery and is trying to realize its capacities. To calculate the optimal capital structure for the company, the current situation should be identified. In the last reporting period (year 2018) the capital structure was: 80% of equity and 20% of debt (D/E ratio equaled 0.25).

Table 2. Current capital structure of NLMK

Equity, mln rub	336,107	Share of equity	80%
Long-term debt, mln rub	84,067	Share of debt	20%
Total capital, mln rub	420,174	Debt-to-equity ratio	0.25

To such level of financial leverage corresponded the cost of equity equal to 24% (calculated using Capital Asset Pricing Model) and cost of debt 5% (calculated as interest paid in 2018 divided by the average amount of long-term debt). Corporate tax is 20%. The obtained WACC current is 20%.

Table 3. Calculation of NLMK' current WACC

Risk-free rate	7.75%	Interest paid, mln rub	4.182
Equity risk premium	11.19%	Kd	5%
Beta levered	1.42	Tax	20%
Ke	24%	WACC	20%

The analysis of capital structure was taken for 100 steps starting from 0% debt and 100% equity to 0% equity and 100% debt. The total amount of capital equal to 420,174 mln rub was taken as constant. The interest rate on debt was assumed to be changing (rising) with the increase of financial leverage. For estimation of the new cost of debt the spread for a company provided by Moody's was used (according to the interest coverage ratio on each step) and the country default spread of 2.82% was provided by Damodaran A.

Using the method of WACC minimization, the optimal capital structure for NLMK is 33% of debt and 67% of equity. Under such proportions of debt and equity the value of WACC equals 18.42%, which is almost 2% less than the current WACC. The Debt-to-equity ratio in this case is equal to 49%, which is close to D/E ratio in NLMK's peer group. The analysis of market estimates has shown that the average D/E ratio for Russian companies in metal industry with common products is equal to 44.5%. The fact that peer companies have D/E values close to ones that were obtained during the analysis witnesses about usefulness of having this capital structure.

Peer company	D/E, %
Severstal' PAO	32,0399365
Uralkaliy PAO	57,2026025
GMK Noril'skiy Nikel' PAO	69,0224745
Chelyabinskiy Metallurgicheskiy Kombinat PAO	62,6466939
Magnitogorskiy Metallurgicheskiy Kombinat PAO	4,45329471
Sredneural'skiy Medeplavil'nyi Zavod OAO	38,6379983
Kosogorskiy Metallurgicheskiy Zavod PAO	22,8230817
Izhstal' PAO	46,9393913
Nadezhdinskiy Metallurgicheskiy Zavod PAO	57,0308856
Trubnaya Metallurgicheskaya Kompaniya PAO	54,4648067
Average D/E ratio, %	**44,5261166**

Fig. 3. NLMK's peer group debt-to-equity values in 2018 [5]

During the analysis the following issues were identified:

1) debt is cheaper than equity, however, it does not mean that the company should be financed only though borrowings;

2) the cost of debt should increase with increase of leverage and, hence, financial risk, but interest rates and the speed with which they would grow are fully dependent on a certain bank and macroeconomic factors affecting it;

3) the accuracy of the analysis is hugely dependent on the assumptions such as total capital held constant and on the estimates used (for example, beta coefficient, country risk, company risk, etc.).

Despite all these issues, having used trusted sources of data and having made necessary assumptions, the analysis has shown that NLMK does not use its full potential currently and it has extra opportunities to increase its company value. The recommendation for the NLMK would be to increase its current D/E ratio from 25% to 45-49%. Due to the fact that they have very low cost of debt (twice lower than the market cost) and rising net income (positive tendency over the last 10 years), it would be able increase the debt portion in its capital structure without bearing high risks as their interest coverage ratio will remain normal. Proposed manipulations would decrease WACC by almost 2% and make the company more expensive.

Список использованных источников

1. Brealey R., Myers S., Marcus A. Fundamentals of Corporate Finance, 2015, 10th edition, 818 p.

2. Lynch P. Optimum capital structure. Technical articles // Официальный сайт ACCA [Электронный ресурс] – Режим доступа. - URL: https://www.accaglobal.com/my/en/student/exam-support-resources/fundamentals-exams-study-resources/f9/technical-articles/optimum-capital-structure.html (дата обращения 15.06.2019).

3. Watson D., Head A. Corporate Finance: Principles and Practice, 2019, 8th edition, 526 p.

4. Гаврилова А., Сысоева Е., Барабанов А. Финансовый менеджмент, М.: Кнорус. – 2013. – 432 с.

5. Липчиу В., Павлова Е. Оценка оптимизации структуры источников финансирования организаций в современных условиях // Политематический сетевой электронный научный журнал Кубанского государственного аграрного университета. – 2012. – № 76. – С. 2.

References

1. Brealey R., Myers S., Marcus A. Fundamentals of Corporate Finance, 2015, 10th edition, 818 p.

2. Lynch P. Optimum capital structure. Technical articles // Ofitsial'nyi sait ACCA https://www.accaglobal.com/my/en/student/exam-support-resources/fundamentals-exams-study-resources/f9/technical-articles/optimum-capital-structure.html

3. Watson D., Head A. Corporate Finance: Principles and Practice, 2019, 8th edition, 526 p.

4. Gavrilova A., Sysoeva E., Barabanov A. Finansovyi menedzhment, M.: Knorus, 2013, 432 p.

5. Lipchiu V., Pavlova E. Otsenka optimizatsii struktury istochnikov finansirovaniya organizatsii v sovremennykh usloviyakh // Politematicheskii setevoi elektronnyi nauchnyi zhurnal Kubanskogo gosudarstvennogo agrarnogo universiteta, 2012, No. 76, P. 2.