Assessment of the financial standing of baby food manufacturing enterprise

D I Vorobyev¹, N P Rodinova¹, V M Ostroukhov¹, Y B Mindlin² and N A Lebedev²

¹ K G Razumovsky Moscow State University of technologies and management (the First Cossack University), Moscow, Russian Federation
² Moscow State Academy of Veterinary Medicine and Biotechnology named after K.I. Skryabin, Moscow, Russian Federation

E-mail: d.i.vorobyev@mgutum.ru

Abstract. This article presents an assessment of the financial standing of a baby food manufacturing enterprise. In this research an assessment was given to the parameters like: dynamics of composition and structure of profit before tax; dynamics of structure of sales revenues; dynamics of composition and structure of profit from sales; changes in factors that influence the net income; calculation of the influence of factors on net profit; dynamics of parameters of return on production and economic activity. As a result of the assessment the following was revealed: for 2019 the considered enterprise has a decrease in efficiency of economic activity, which was caused by decrease in efficiency of using the fixed production assets, labor resources and current assets. Management should define and use the internal reserves to improve the financial competitiveness of the enterprise. At the same time, it is recommended to pay attention to reserves that require minimum cash costs due to limited availability of cash funds.

1. Introduction
Baby food products are an integral part of the food market. They play an important role in forming a child’s health, which is so important in shaping the health of a population [1-9]. If a child does not get the basic nutrients, it can lead to development of various nutritional diseases. So providing the population with available and high quality products of this category is one of the most important tasks within the program of the country’s food security [10-15]. The history of baby food production in the Russian Federation goes back for several decades. Active demand for products in this sphere stimulated expansion of this range of goods, development of its production and its improvement [16-18].

Nowadays, the baby food market is quite wide and various. Together with domestic manufacturers a significant share of the market is occupied by import manufacturers of baby food, like Nutricia, Heinz, Gerber, Kabrita, which significantly increases the level of competition in this market.

High competition leads to fact that manufacturing companies must clearly formulate their tasks and find the appropriate resources for these tasks fulfillment. Only a strategy like this allows achieving sustainable growth and increasing market share of an enterprise.

Achieving sustainable development aimed at strengthening of an enterprise’s position in the market and increasing its financial stability is possible via strategic model of this enterprise’s development. One
of the most important stages of building a strategic model is the financial assessment of the enterprise [19-25].

2. Materials and methods

The economic results of activities were analyzed by the following formulas:

Sales revenue:

\[ R = V \times P \]  \hspace{1cm} (1)

where \( V \) – is volume of manufactured products;
\( P \) – price per unit of products.

Prime cost of sales (\( PC_s \)):

\[ PC_s = C_{tot} + CE + RP_{beg} - RP_{end} \]  \hspace{1cm} (2)

where \( C_{tot} \) – is total prime cost of manufactured products,
\( CE \) – commercial expenses,
\( RP_{beg} \) and \( RP_{end} \) – are the remains of unsold finished goods at the beginning and end of the reporting period.

Revenue from sales (\( R_s \))

\[ R_s = P_g - CE - AE \]  \hspace{1cm} (3)

Where \( P_g \) – gross profit:
\( CE \) – commercial expenses,
\( AE \) – administrative expenses.

Profit before tax (\( P_{bt} \)):

\[ P_{bt} = P_s + Ir - Ip + OI - OE \]  \hspace{1cm} (4)

where:
\( P_s \) — profit from sales;
\( Ip \) — incomes from participation in other companies;
\( Ir \) — interests receivable;
\( Ip \) — interests payable;
\( OI \) and \( OE \) — other incomes and other expenses.

Net profit (\( N_p \)):

\[ N_p = R - PC_s - AE - CE + OI - OE - TP \]  \hspace{1cm} (5)

where:
\( R \) — revenue;
\( PC_s \) — prime cost of sales;
\( AE \) and \( CE \) — administrative expenses and commercial expenses;
\( OI \) and \( OE \) — other incomes and other expenses;
\( TP \) — tax on profits.

Return on assets (\( R_a \)):

\[ R_a = \frac{NP}{S_a} \times 100\% \]  \hspace{1cm} (6)

where \( NP \) – is net profit,
\( S_a \) – sum of assets.

Return on product (\( R_{pr} \)):
\[ R_{pr} = Pr \div P_c \times 100 \] (7)

where:

- \( R_{pr} \) — return on product;
- \( Pr \) — profit;
- \( P_c \) — prime cost.

Return on sales (CRs):

\[ CRs = \frac{SP}{R} \times 100\% \] (8)

SP — sales profit;
R — revenue from sales.

Net profit margin:

\[ R = \frac{NP}{R} \times 100\% \] (9)

Where R – is revenue from sales,
NP – net profit.

3. Results and discussion

Below is presented the financial assessment of a food industry enterprise that produces baby food. This enterprise is located in Moscow city, the enterprise is an industrial partner of the K G Razumovsky Moscow State University of technologies and management (Design Engineering Department (DED)).

The following initial documents were presented: operational reports, economic plans for development of the enterprise, various report sheets, production schedules, balance sheet and statement of financial results.

Financial assessment begins with composition and structure of profit before tax. Let’s analyze the profit before tax, indicating the sources of this profit. The results are shown below in table 1.

| Parameters | 2017 Amount, thousand rubles. | 2017 Share, % | 2018 Amount, thousand rubles. | 2018 Share, % | 2019 Amount, thousand rubles. | 2019 Share, % | Change in 2019 in comparison with 2018, thousand rubles | Absolute | Relative, % |
|------------|-------------------------------|---------------|-------------------------------|---------------|-------------------------------|---------------|---------------------------------|----------|-------------|
| 1. Profit from sales | 2.184 | 109.64 | 15.464 | 99.15 | 15.820 | 101.46 | 356 | 2.32 |
| 2. Balance of other income and expenses | -192 | -9.64 | 133 | 0.85 | -228 | -1.46 | -361 | -2.32 |
| 3. Profit (loss) before tax | 1.992 | 100.00 | 15.597 | 100.00 | 15.592 | 100.00 | -5 | x |

Based on the analyzed data it is possible to conclude that amount of profit slightly decreased, despite the increase of profit from sales, the amount of loss from other activities by more than 300 thousand rubles was also recorded. It should be noted that the share of profit from sales in structure of profit before tax was more than 100% (in 2019), which proves high quality of profit before tax.
The share of profit from sales in profit before tax in 2019 amounted to more than 100%, which indicates quite high quality of profit before tax.

The increase in sales profit led to increase of profitability for the period 2018-2019, therefore it is advisable to consider a plan for defining the reserves and their using in production process of the enterprise.

For this purpose we will analyze the structure and dynamics of sales revenues, having assessed the structure and dynamics of costs. The sales revenues are analyzed at current prices. At the same time, the dynamics of revenue and its structure are analyzed on the basis of explanatory notes for 2018-2019. Dynamics of composition of revenues from sales for 2017-2019, is presented below in table 2. Let’s consider the dynamics of the enterprise’s revenue structure.

**Table 2. Dynamics of structure of revenues from sales for 2017-2019.**

| Products                  | 2017     | 2018     | 2019     | Change in 2019 ± |
|---------------------------|----------|----------|----------|------------------|
|                           |          |          |          |  ±               |
| 1. Baby products, thous. rub. | 85.48    | 85.92    | 86.45    | 0.97            | 0.53            |
| 2. Dairy products, thous. rub. | 13.14    | 13.51    | 12.67    | -0.47           | -0.84           |
| 3. Tolling products, thous. rub. | 1.38     | 0.57     | 0.88     | -0.50           | 0.31            |
| Total, thous. rub.        | 100.00   | 100.00   | 100.00   | 0.00            | 0.00            |

According to table 2 it is obvious that the share of revenue obtained from the sale of baby food in 2019 in total amount of revenue increased by 0.97 p.p. and 0.53 p.p. in comparison with 2017-2018 respectively. The share of proceeds from sale of dairy and tolling products slightly decreased. However the share of sales of cottage cheese (5%) and cottage cheese product increased by 0.31 p.p., which is related with increase of demand for these products in 2019.

Let’s analyze the main sources of formation of profit before tax: profit from sales and profit from other activities are analyzed separately. We will start the analysis of profit from its volume, composition, structure and dynamics (table 3).

**Table 3. Dynamics of composition and structure of profit from sales 2017-2019.**

| Parameter                  | 2017      | 2018      | 2019      | Change in 2019 in comparison with 2017, ± |
|---------------------------|-----------|-----------|-----------|------------------------------------------|
|                           | Amount, thous. rubles. | Share, % | Amount, thous. rubles. | Share, % | Amount, thous. rubles. | Share, % | Absolute | Relative, % |
| Revenue                   | 217.324   | 100       | 244.745   | 100       | 281.136   | 100       | 63.812   | 0           |
| Cost of sales             | 172.946   | 79.58     | 190.832   | 77.97     | 225.271   | 80.13     | 52.325   | 0.55        |
| Business expenses         | 14.140    | 6.51      | 17.594    | 7.19      | 20.245    | 7.20      | 6.105    | 0.69        |
| Administrative expenses   | 28.054    | 12.91     | 20.855    | 8.52      | 19.800    | 7.04      | -8.254   | -5.87       |
| Revenue from sales        | 2.184     | 1.00      | 15.464    | 6.32      | 15.820    | 5.63      | 13.636   | 4.62        |
This way, from the data shown in table 3 it is obvious that in 2019, compared to 2017, the amount of profit from sales increased by 13.636 thousand rubles due to increase in revenue by 63.812 thousand rubles. However, the growth in profits in absolute value in 2018 compared to 2017 is lower than in 2016, which is related to the fact that in 2018 the production of new types of baby food was launched and it caused a sharp increase of sales, and in 2019 compared to 2018 there was a steady increase in production volume. It is also necessary to note that in 2019 compared to 2017, the share of commercial expenses (cost of sales) in revenue slightly increased from 79.58% in 2017 to 80.13% in 2019, which is related to increase in production volumes and increase in consumption of raw materials and consumption of energy. Commercial expenses have also increased by 6.105 thousand rubles and their share in revenue amounted to 7.20% at the end of 2019, which is 0.69 pp higher than in 2017. The share of administrative expenses decreased by 5.87 p.p. Due to decrease in share of administrative expenses in revenue, the share of profit from sales increased from 1.00% in 2016 to 5.63% in 2019, which indicates increase in production efficiency in the baby food enterprise.

In general, according to the data shown in the table 3, it can be seen that in 2019 compared to 2017 the amount of profit from sales increased by 13.636 thousand rubles, due to increase in sales revenue and a decrease in amount of administrative expenses, despite the growth of production expenses and commercial expenses, while during 2017-2019 its share in the total revenue grew steadily. This growth was caused by increase in sales volume and increase in demand for the enterprise’s products on Moscow markets and outside Moscow region.

Next let’s analyze the composition and structure of net profit in context of its defining elements: profit before tax and current income tax (table 4).

| Parameters          | 2017 г. | 2018 г. | 2019 г. | Change in 2019 in comparison with 2017, % |
|---------------------|---------|---------|---------|-----------------------------------------|
|                     | Amount, thousand rubles | Share, % | Amount, thousand rubles | Share, % | Amount, thousand rubles | Share, % | Absolute | Relative, % |
| Profit before tax   | 1.992   | 186.17  | 15.597  | 127.5/9 | 15.592 | 127.90 | 13.600 | -58.27 |
| Current income tax  | -922    | -86.17  | -3371   | -27.58 | -3401 | -27.90 | -2479 | 58.27 |
| Net profit          | 1.070   | 100.00  | 12.224  | 100.0/2 | 12.191 | 100.00 | 11.121 | 0 |

Thus, from the data shown above in the table 4 it follows that in 2019 the enterprise worked with a net profit in amount of 12.191 thousand rubles. In 2019, compared to 2017, there is an increase in net profit by 11.121 thousand rubles. During the analyzed period, the share of profit before tax in structure of net profit decreased by 58.27 percentage points (p.p.), the current income tax increased by 2.479 thousand rubles, which led to increase in its share by 58.27 p.p.

According to financial statements used in the analysis of profitability of the baby food enterprise, now it is necessary to consider the influence of factors stated in the Report of financial results on change in the enterprise’s net profit. In order to analyze the influence of factors listed in the Report of financial results on change in net profit here a 4-factors additive model is used, taking into account the parameters of the analyzed enterprise (table 5).

| Parameters | 2018 | 2019 | Change, thousand rubles, + |
|-----------|------|------|---------------------------|
| 1         | 244.745 | 281.136 | +36.391 |
The calculation of profitability of production and economic activity for the analyzed enterprise is presented below in table 6.

| Factors                  | 1   | 2   | 3   | 4   | 5   | Change, + |
|--------------------------|-----|-----|-----|-----|-----|-----------|
| NP0                      | 12.224 | 244.745 | -229.281 | 1.767 | -1.634 | -3.373 | - |
| NP1                      | 48.615 | 281.136 | -229.281 | 1.767 | -1.634 | -3.373 | +36.391 |
| NP2                      | 12.580 | 281.136 | -265.316 | 1.767 | -1.634 | -3.373 | +356 |
| NP3                      | 12.721 | 281.136 | -265.316 | 1.908 | -1.634 | -3.373 | +497 |
| NP4                      | 12.219 | 281.136 | -265.316 | 1.908 | -2.136 | -3.373 | -5 |
| NP5                      | 12.191 | 281.136 | -265.316 | 1.908 | -2.136 | -3.401 | -33 |

Based on the above calculations, it is evident that revenue from sales provides the greatest positive influence on the financial result of the enterprise’s activities, the net profit directly depends on this parameter, i.e. when it is increased by 36.391 thousand rubles, the net profit increases by the same amount. However, the increase in total production cost by 36.035 thousand rubles did not have any negative influence on net income. Increase in other income by 141 thousand rubles in combination with previous factors led to an increase in net profit by 497 thousand rubles. The negative influence on net profit was caused by growth of other expenses by 28 thousand rubles which led to a decrease in net profit by 5 thousand rubles. Current tax payments deducted from profit provided a similar effect: while the current income tax decreased, but due to influence of other factors, the net profit parameter decreased.

Based on the above calculations, it is obvious that revenue from sales provides the greatest positive influence on the financial result, the greatest negative influence is provided by income tax.

To assess financial competitiveness, it is not enough to use profit parameters, since this is an absolute parameter. It should also be considered a relative parameter — profitability. The analysis of profitability parameters allows assessing the production and economic activity of the analyzed enterprise, as well as defining reserves for increasing the efficiency of enterprise and developing a system of measures for application of these reserves.

The calculation of profitability of production and economic activity parameters in whole for the enterprise is presented below in table 7.

Table 7. Dynamics of parameters of return on production & economic activity for 2018-2019.

| Parameters                  | 2018 р. | 2019 р. | Change, + |
|-----------------------------|---------|---------|-----------|
| Return on sales,%           | 6.32    | 5.63    | -0.69     |
| Return on costs,%           | 6.80    | 5.88    | -0.92     |
| Gross return,%              | 22.03   | 19.87   | -2.16     |
| Economic return,%           | 18.54   | 16.81   | -1.73     |
| Total return on sales,%     | 6.37    | 5.55    | -0.82     |
| Net profit margin,%         | 4.99    | 4.34    | -0.66     |
| Return on working capital,% | 28.00   | 21.03   | -6.97     |

*R — revenue, Pg — gross profit, C — total prime cost of sold products, Pbt — profit before tax (balance), A — average annual costs of assets, OA — average annual cost of current assets.
According to table 7, it is obvious that in 2019 compared to 2017 all profitability parameters have a downward trend.

According to the parameters of return on sales, costs, total return on sales, return in terms of net profit, it shows that on average for every ruble of the received revenues there are about 0.06 rubles of profit, which is a rather low parameter for a manufacturing enterprise. However the achieved level of return allows the enterprise to run uninterrupted operations and to make profit from economic activities.

The highest parameters are the parameters reflecting the efficiency of using the enterprise’s assets, including the current assets. So, each ruble of assets gives 0.17 rubles of profit to the enterprise, current assets are used in the most efficient way – the ruble invested in current assets gives 0.21 rubles of net profit. However, in comparison with 2018 the return on current capital decreased by 6.97 p.p., hence each ruble of current assets began to give less net income by 0.07 rubles.

4. Conclusion

In general it can be noted that in 2019 the analyzed enterprise has a decrease in its parameters of economic activities, which was affected by a decrease in efficiency of using of the fixed production assets, labor resources, and current assets. In future, if the negative dynamics of profitability parameters persists, the enterprise’s activities may become ineffective, despite the popularity of this brand and the popularity of the products in the market of baby food and dairy products.

The decrease of all financial parameters, return parameters in 2019 in comparison with 2018 to a greater or lesser extent, which is undoubtedly a negative situation, despite the return of activities, imposes a danger of a further reduction in amount of net profit, which can provide the negative influence on the enterprise’s solvency, its creditworthiness and financial liquidity, and may also lead to a decline in production activities, which in its turn will negatively influence on the financial competitiveness of the baby food enterprise.

So, it follows that management of the enterprise should reveal, define and use internal reserves to improve the financial competitiveness of the enterprise. While that it is recommended to pay attention to reserves that require minimal costs, which is associated with the limited availability of cash resources.

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