Особенности управления эффективностью вертикально-интегрированной компании агропромышленного сектора (на примере ПАО "Группа Черкизово")

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Аннотация

В статье представлены результаты проверки гипотезы об эффективном операционном процессе для вертикально-интегрированных компаний. Методы исследования эффективности использованы с учетом основных способов финансового анализа – DCF и полной стоимости вертикально-интегрированной компании агропромышленного сектора для исследования эффективности внедрения подобных практик в операционном процессе.

Ключевые слова: финансовые результаты, компании, сельскохозяйственный рынок, эффективность

Features of performance management of a vertically integrated company in the agro-industrial sector

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Abstract

The article presents the results of testing the hypothesis of an effective operational process for vertically integrated companies. The methods of efficiency research were used taking into

account the main methods of financial analysis – DCF and the full cost of a vertically integrated company in the agro-industrial sector to study the effectiveness of the implementation of such practices in the operational process.

Key words: financial results, companies, agricultural market, efficiency

A vertical integration is considered to be one of the most efficient ways to improve business margins. A control over supply and value chains creates decent opportunities for companies to achieve higher profitability. Instead of doing business with counterparties firms engage in vertical integration, thereby excluding suppliers, components manufacturers or retailers from their supply and value chains. This eliminates necessity to share profit with them, thereby creating additional value for shareholders.

The globalization forces firms to integrate in order to withstand constantly increasing competition from all around the globe. The majority of the traditional industries like agriculture, metals and mining, oil and gas are deeply integrated. The competition in these industries makes companies to engage in all elements of supply chain starting from raw materials production to sale of ready products.

The issue is that vertical integration requires huge investments: either capital expenditure programs or M&A deals, which all can potentially cease or destroy shareholder value. Despite such an issue, more and more businesses engage in a vertical integration. This situation raises a vital question about the value created by vertical integration and economic rationale for businesses.

A vertical integration is when a company has a full control over its supply and value chains. It means that a vertically integrated company has all operations in-house instead of outsourcing them. There are two directions of vertical integration: upstream (backward) or downstream (forward). Backward integration implies that the company moves upstream to control raw materials. Forward integration implies that company moves downstream to control customers. This can be achieved either internally by extending supply and value chains or externally by mergers and acquisitions deals (M&A). Figure 1 depicts movement forward and backward.

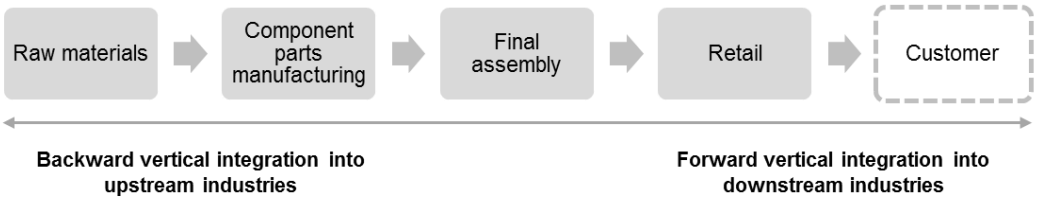

Figure 1. – Vertical Integration Diagram

There are several degrees of vertical integration:

- a full (complete) vertical integration – all the assets, resources, and business

expertise are produced, provided and controlled by the company[1];

- quasi vertical integration – company owns a stake in the form of equity stake to obtain agency benefits;
- long-term contracts – a diluted form of vertical integration in which some elements of procurement are held constant to reduce inconsistencies in product delivery, while holding costs constant to a certain extent.

Now let us consider advantages of vertical integration or synergistic effects, which arise in such a business structure. The key benefit of vertical integration is the economies arising from supply chain control and optimization and lower variable costs of production (raw materials costs). Many firms come across a situation when their demand forecasts result in supply chain inefficiencies. This situation is known as the bullwhip or whiplash effect. Companies fail to achieve continuous flow of materials due to communication failure. A vertical integration helps to resolve this issue by increasing control over all components of supply chain. Integration allows to achieve free flow of information among different supply chain members. As a result, firm achieves greater flexibility in adapting to changes in demand, which improves the elasticity of supply.

Before considering valuation methods, it is helpful to define what the “value” is.

In accounting terms, value is the monetary worth of an asset, business entity, goods sold, services rendered, or liability or obligation acquired. In economic terms, value is the sum of all the benefits and rights arising from ownership.

A postulate of sound investing is that an investor does not pay more for an asset than it is worth. There is a lot of logic in this statement. A rational individual will not purchase an asset at a price higher than its worth, however, in practice it is not always like this. An individual should know the “fair price” but what is it?

The efficient markets hypothesis proposes that price will render all the factors, which affect it, thereby it will be the fair price. However, investment analysts believe that there are some inefficiencies, which cause mispricing. They will argue that the real fair price is the intrinsic value of an asset, which can deviate from a market price. Analysts seek those market inefficiencies to make a sound return on investment in a mispriced asset.

There are many different approaches to identifying a fair value of an asset. Through-out its long history many valuation techniques have changed and evolved. Currently there are several core approaches to valuation: income approach, asset-based approach, relative value approach, and sum-

[1] Камилов М.К. Интеграция в агропромышленном комплексе и перспективы её развития в условиях импортозамещения / М.К. Камилов // Региональные проблемы преобразования экономики. – 2017. – №2 – с. 41.

of-the-parts approach[2]. Figure 2 summarizes core methods.

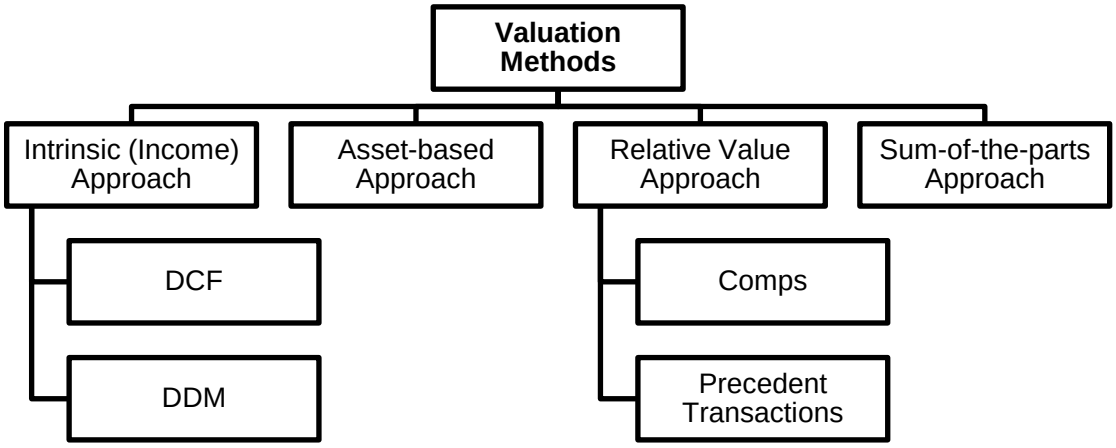

Figure 2. – Main Valuation Methods

The context of a valuation, including its objective, background, and final user, determines the relevant definition of value and thus affects the selection of an approach to valuation. Now let us have a closer look at the key valuation techniques.

Intrinsic Value Approach

Intrinsic value is a kind of philosophical term. Generally speaking, it is the true or fair value of an asset. Each asset is believed to have intrinsic value, which is derived from estimated cash flows, potential growth, and level of risk[3].

The cashflows vary from asset to asset. For instance, cashflow for a stock can be expressed through dividends, for bond it can be coupons and face value, for a firm it is expressed through free cashflows. They are discounted at a rate, which justifies their risk. Thereby, riskier assets will have higher discount rates, than safer ones.

There are numerous approaches to finding intrinsic value of an asset. What is common for all approaches is that they consider both quantitate and qualitative factors. The former ones include financial statements data, ratios and so on, whereas the former ones encompass things like governance, ESG exposure, business model and so on.

Those factors are then plugged in a financial model and the valuation is performed. The most basic and simplistic approach to finding intrinsic value is finding the sum of discounted future cash flows.

Expected cashflow, as it was mentioned before can be represented by firm's cashflow, dividends, coupons and other cashflows, which are going to be produced by an asset. Discount rate can be represented as cost of equity, weighted average cost of capital, internal rate of return of

[2] Касьяненко Т.Г. Оценка стоимости бизнеса: учебник для бакалавров / Т.Г. Касьяненко, Г.А. Маховикова. – М.: Издательство Юрайт, 2017. – 232-248 с.
[3] Damodaran A. Investment Valuation 11th Edition / Moscow, Alpina Publisher – 2020 – p. 11-24.

investor or another factor, which considers risk and required return of an investor.

The definitive goal is the estimation of company's intrinsic value. To undertake this assignment three approaches will be used: DCF, Comps and Precedent Transactions.

Discounted Cash Flow method

As it was previously discussed, DCF is a valuation approach, which is used to estimate the value of the investment based on the future cash flows reflecting the time value of money and level of attributable risk.

The DCF formula is the following:

$$\sum_{n=1}^{t} \frac{CF_n}{(1+r)^n} + \frac{TV_t}{(1+r)^t},$$

Figure 3. – DCF Formula

Where:

n – number of the period;

CF – cashflow;

r – discount rate reflecting the riskiness of the estimated cashflows;

TV – terminal value;

∑_(n=1)^t▒〖CF〗_n/〖(1+r)〗^n – sum of discounted cash flows;

〖TV〗_t/〖(1+r)〗^t – discounted Terminal Value.

Summing up, the model requires four inputs: forecasting period, cash flows, terminal value and discount rate. The latter one will be discussed in detail in the third subchapter.

Basically, the DCF requires an analyst to make an assumption concerning the moment when company will reach a steady state or in other words mature. Company operates in a traditional and sustainable industry – agriculture, thereby the external environment is mature. Cherkizovo itself is a growing company, which outperforms the industry with CAGR 2016-2020 of almost 12% against 4-7% for the market[4]. Taking everything into account 5-year period will justify the fact of above-market growth in the following years and shift to market average in long-term.

In order to avoid inconsistencies and rationalize model Cherkizovo and business segments later on are going to be valued based on the Enterprise Value. This will allow better flexibility in considering capital structure and Net Debt components. Thereby, Free Cash Flow to Firm will be the calculated to estimate value of the company.

The FCFF formula is the following:

[4] Russian Agricultural Complex: 2020 Results [Electronic Resource] / RBC – URL: https://marketing.rbc.ru/articles/12394/ (date of access: 04.05.2021).

$$FCFF = EBIT \times (1 - T) + D\&A - CAPEX - WCInv,$$ Where:

Figure 4. – FCFF Formula

EBIT – Earning Before Interest and Tax (Operating Profit);

T – tax rate;

D&A – Depreciation and Amortization;

CAPEX – Capital Expenditures;

WCInv – Increase in Working Capital.

As for Terminal Value the preferred approach is Perpetual Growth Model, however, it will be backed and supported by Exit-Multiple.

The calculations for both methods are represented below:

$$TV = \frac{FCF_n \times (1+g)}{(r-g)},$$

$$TV = Financial\ Metric \times Multiple,$$

Figure 5. TV calculation formulas

The Discounted Cash Flow method will form the basis for the entire analysis and will receive the highest share in the final value estimation.

Now let us delve into Cherkizovo operation observation. Cherkizovo Group is Russia's largest producer and a major processor of meat ranking first in chicken production, second in turkey and fourth in pork.

Cherkizovo Group has come a long way to build a highly successful and efficient business from a firm with a single facility to grow the country's largest meat manufacturer.

The Group is structured into five product segments of Chicken, Pork, Meat Processing and Grain. Company also makes turkey meat products as part of joint venture with Grupo Fuertes. The vertically integrated business model covers the entire production chain from growing grain and feed production to finished meat products, which guarantees the highest quality standards.

Cherkizovo's major shareholders are Mikhailov family members with almost 66% ownership. Figure 6 summarizes all shareholder groups[5].

[5] Cherkizovo Annual Report 2022

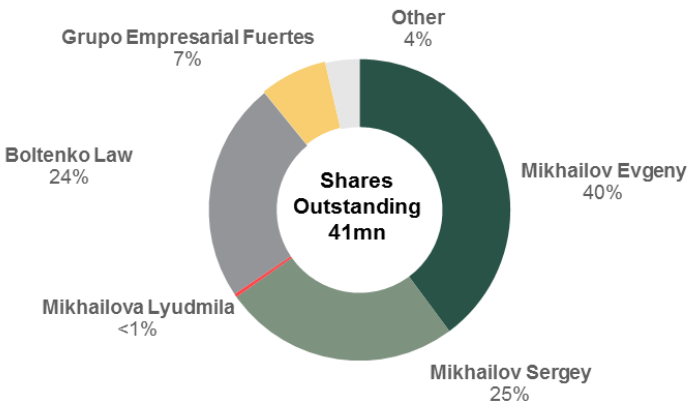

Figure 6. – Cherkizovo Shareholders

Boltenko Law and Grupo Empresarial Fuertes (partner in JV in Turkey segment) own 31% combined. Free float is only 4%, which implies low liquidity and can potentially result in mispricing of a stock by a market. Finally, let us consider financials. The data is summarized in

Table 1. Cherkizovo Financial Results

RUB bn	2016	2017	2018	2019	2020
Revenue	82.6	90.5	100.4	120.1	128.8
YoY growth	*7%*	*10%*	*11%*	*20%*	*7%*
Adj. EBITDA	9.5	14.6	20.4	20.6	26.6
EBITDA Margin	*12%*	*16%*	*20%*	*17%*	*21%*
Net Income	1.9	5.8	12.0	6.7	15.2
Profit Margin	*2%*	*7%*	*12%*	*6%*	*12%*
CapEx	8.6	9.8	9.2	8.0	9.6
% of Revenue	*10%*	*11%*	*9%*	*7%*	*8%*
Net Debt	36.9	48.7	58.6	61.2	64
ND/Adj. EBITDA	*3.84*	*3.34*	*2.87*	*2.97*	*2.41*

Company's revenue grew almost 56% since 2016 with CAGR 2016-2020 of around 12%. The growth in revenue was mostly driven by organic growth in sales, mergers and acquisitions activities, an increase in capacity utilization and new product market launch.

In 2018 company achieved EBITDA margin of 20% and a profit margin of 12%, which dropped a little in 2019 and quickly recovered in 2020. Company's CAPEX averaged 9.0 RUBbn in 2016-2020, which lied in range of 7-11% of revenue. Cherkizovo is a notable player in agricultural M&A. Company's most recent acquisitions include Cargill's chicken processing facility, purchase of Pit-Product, acquisition of Kompas Foods and many others. Cherkizovo's Net Debt / Adjusted EBITDA is on a rather comfortable level of 2.41 times. It should be noted that there is a clear downtrend, which is a positive sign both for debt and equity investors.

Overall, Cherkizovo is a very attractive business with a perfect product-market fit and

sustainable and efficient business model.

Let us proceed to business segments overview. As it was mentioned before, Cherkizovo Group business is comprised of five segments: Chicken, Pork, Meat Processing, Grain and Turkey. Figure 7 summarizes segments revenue before eliminations[6].

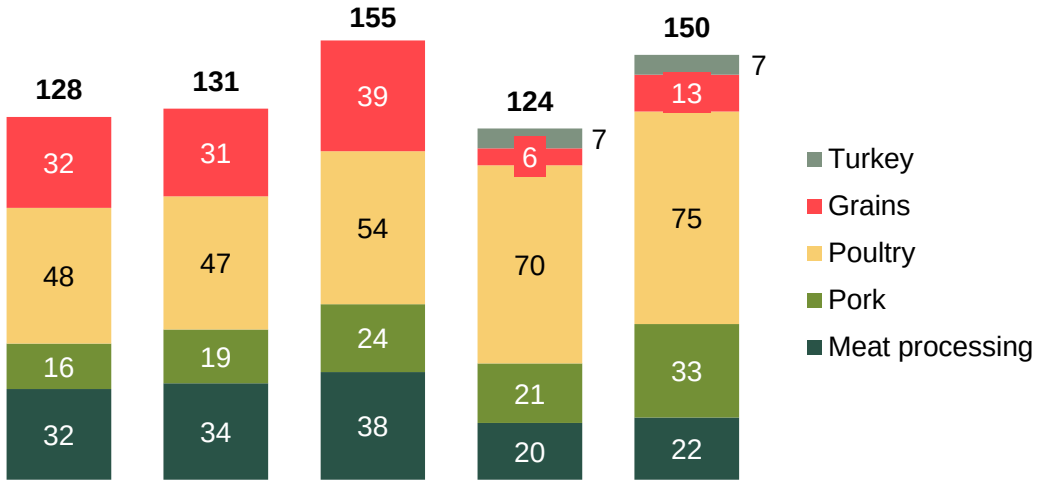

Figure 7. – Segments' revenue before eliminations

Source: Composed by the author based on Cherkizovo Annual Report 2020.

The Grain segment grows crops that the company uses to produce compound feed at own facilities or to sell to external users. Core product categories are crops: wheat, soy, sunflower and corn. Company's farmable areas and facilities are concentrated in the Central Chernozem Region. Key geographies are Voronezh region, Lipetsk region, Moscow region, Orel region, Penza region, Bryansk region, Tambov region. The Chicken segment focuses on chicken products and byproducts, as well as an extended mix of branded products. Recently company has acquired a separate HoReCa product line. Core product categories are chicken products like whole chickens and cuts, chilled and frozen meat, ready-to-cook products, and by-products. Company's facilities are Mosselprom, Petelinskaya poultry farm, Vasilyevskaya poultry farm, Lisko Broiler, Kurinoe Tsarstvo, Altaisky Broiler, Belaya Ptitsa, Rovensky Broiler, Chicken processing facility in Efremovo.

The fastest growing segment is Turkey, the reason for such growth is an increase in capacity utilization rate, which is expected to reach almost maximum rate by the end of the forecast period. The slowest growth is attributable to Grain segment, which is expected to grow in line with inflation at around 3% CAGR 2021-2025.

COGS are expected to reach 136 RUBbn, which is almost 40% growth from 2020 result. SG&A expense is going to reach 23 RUBbn by 2025 with a 7% CAGR 2021-2025. Poultry segment

[6] Cherkizovo Annual Report 2022

is going to stay the core costs center and lead SG&A.

Figure 8 summarizes Cherkizovo's profitability ratios for the entire company.

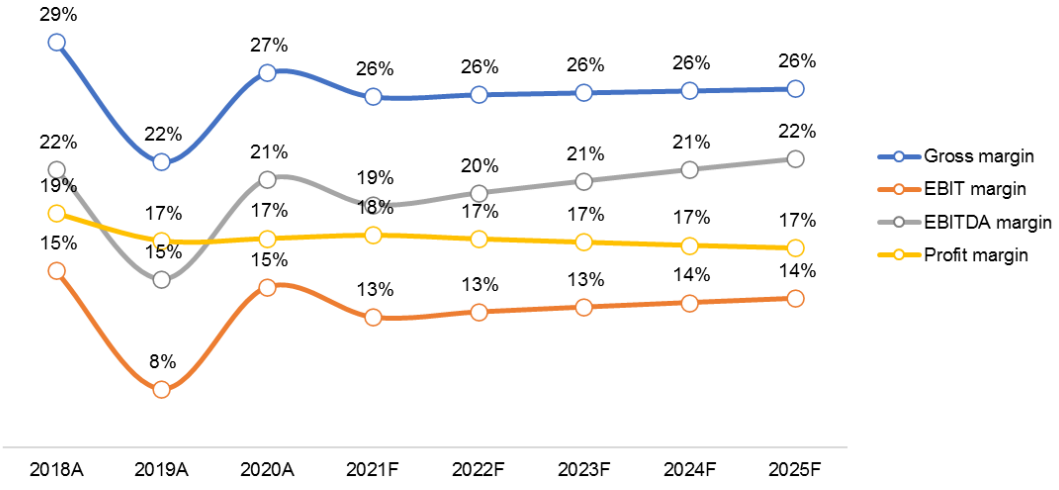

Figure 8. – Profitability ratios of integrated company

Company's EBITDA margin is going to reach around 22% by 2025, which is in-line with historical values of 15-22%. Profit margin will stay almost the same as in 2020 with around 17%.

The final part of this work is dedicated to extracting and assessing the value of vertical integration. Firstly, let us derive the value of re-integrated business. The key distinctive feature of re-integrated businesses is a price change, which arise from shifting from transfer pricing to market prices. This affects four business segments out of five because Meat Processing segment does not trade its production with other segments. Figure 9. depicts price changes[7].

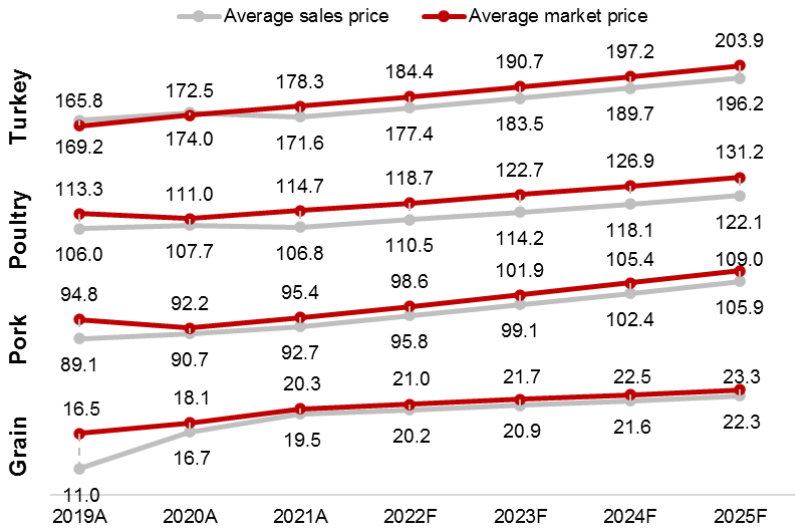

Figure 9. – Average sales and market prices comparison

Given no change in sales and production revenue will change by the amount of price change.

Let us consider what portion does it add to total value of the firm. The contribution of vertical integration to total EV is presented in Figure 10. It comes up that vertical integration adds

[7] RosStat data, Cherkizovo Annual Report 2022, RosAgro Annual Report 2020 and broker estimates

up 27% of firms total value, in other words almost one third of the entire value comes from more efficient allocation of resources, single professional management, bulk procurement and optimized supply chain.

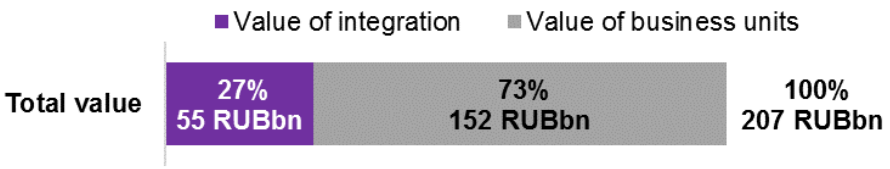

Figure 10. – Contribution of vertical integration

Single management leads to decreased G&A expense and allows more efficient spread of best practices among business divisions. Lower total raw materials cost result from bulk procurement and economies of scale. Integrated company is also able to benefit from economies of scope effect, because subproducts are utilized in the other business segments. Company also benefits from lower cost of capital, which is mostly attributable to lower size premiums applied to a company. Finally, integration creates barriers to competitors by allowing company to offer better value at a considerably lower cost.

Vertical integration is one of the key options for strategic development in modern global economy. Ever-growing competition from domestic and foreign firms forces companies to look for effective and sustainable strategies, which will allow to retain competitive positions and decent margins. Vertical integration is believed to meet these requirements in full.

Russia's vertically integrated agricultural complexes contribute up to 2% to total country's GDP, which denotes their crucial role in the economy. Acting as a key supplier of resources for primary sectors of the economy they amplify the technological progress, which is aimed at supporting the development of the field. However, from the prospective of the business, the creation and development of such vertically integrated companies is considerably expensive, thereby the question of vertical integration contribution to total firm's value is raised. Thus, the question of whether integration really creates synergetic effect, which results in significant contribution to value was examined.

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