Ievgenii Nagornyi, Senior Lecturer
Kyiv National Economic University named after Vadym Hetman
Kyiv, Ukraine

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CAPITAL STRUCTURE AND RESILIENCE OF UKRAINIAN AGRICULTURAL HOLDINGS

The conditions under which Ukrainian real sector enterprises operate changed fundamentally after 24 February 2022: sales markets narrowed, logistics chains were disrupted, the cost of borrowing increased, and access to international capital markets for Ukrainian issuers became sharply limited. Decisions concerning capital structure were thereby transformed from questions of optimizing the cost of financing into questions of enterprise survival. Yet the practice of the leading Ukrainian agricultural holdings – Astarta, Kernel, MHP and Agroton – shows that the response to this shock was fundamentally different. Some companies preserved profitability and even increased their equity, others recorded losses, and still others effectively ceased operating activity – all of this within one sector, in one country, at the same time.

These divergent trajectories constitute the central question of the present study: how capital structure influenced company performance under shock conditions, and which financing models ensured resilience during a systemic crisis. The agro-industrial complex is of particular interest here, since it experienced the most heterogeneous impact – part of the assets found themselves in active combat zones while the remainder continued to operate. Direct losses of the sector as at the beginning of 2024 are estimated at USD 10.3 billion and sown areas contracted by 25% against the pre-war level, which makes the financial decisions behind resilience directly relevant for the post-war recovery of the industry.

The theoretical framework rests on the classical theory of capital structure management. The Modigliani–Miller theorem [2] states that under perfect market conditions the value of a company is independent of its capital structure; modifications accounting for the tax shield and the probability of financial distress formed the trade-off theory, according to which the optimal structure balances the advantages of debt against the probability of default – and it is precisely this balance that shifts radically under exogenous shocks. Myers' pecking order theory [3] explains the predominance of internal financing through information asymmetry;

under martial law this hierarchy becomes even more rigid, since external financing is either unavailable or excessively expensive. The conceptual dimension of resilience is presented in the bibliometric analysis of L. Lihonenko and V. Andriichuk [1].

To verify these regularities, a sample of four agricultural holdings representing fundamentally different financial models and geographic asset profiles was formed. The empirical base comprises their consolidated IFRS financial statements for 2021–2024. Table 1 presents the key structural indicators of capital of the companies studied.

Table 1

Capital structure indicators of selected agricultural holdings in Ukraine, 2021–2024

Company	Year	Autonomy ratio, %	D/E ratio	Share of retained earnings in equity, %
Astarta	2021	71.7	0.395	81.7
	2022	69.1	0.446	85.53
	2023	70.2	0.424	85.8
	2024	73.4	0.362	89.11
Kernel	2021	52.1	0.918	98.3
	2022	40.3	1.482	115.5
	2023	44.9	1.228	121.8
	2024	54.9	0.820	122.7
MHP	2021	43.7	1.287	86.78
	2022	38.0	1.635	107.82
	2023	40.3	1.480	114.42
	2024	44.4	1.251	104.37
Agroton	2021	87.4	0.144	–
	2022	96.1	0.041	–
	2023	95.0	0.052	7.14
	2024	97.2	0.029	4.2

Source: calculated by the author on the basis of the consolidated financial statements of the agricultural holdings

The data reveal three qualitatively different models of capital structure coexisting within one sector and one regulatory environment. The first – conservative and moderate – is represented by Astarta, which maintained the predominance of equity over liabilities together with steady growth in the share of retained earnings, from 81.7% in 2021 to 89.11% in 2024. Equity was thus accumulated exclusively out of earned resources rather than additional shareholder contributions, a classical manifestation of Myers' pecking order theory [3]. The second model – aggressive leverage – is characteristic of Kernel and MHP, where the debt-to-equity ratio systematically exceeded unity, reflecting a deliberate reliance on financial leverage as a source of profitability. The third – forced debt-free – is represented by Agroton, where the formally highest autonomy ratio, rising to 97.2% in 2024, is the consequence not of a strategic decision but of operational collapse following the destruction of assets in the zone of active hostilities.

The reaction to the war shock of 2022 clearly differentiates these models. Astarta absorbed the shock almost without structural change: the debt burden increased only temporarily, after which it returned to pre-crisis parameters. Kernel and MHP experienced a noticeable deterioration – the autonomy ratio of both companies fell to the lowest values of the period (40.3% and 38.0% respectively), while D/E approached critical levels. This corresponds to the logic of the trade-off theory [2]: enterprises with a more aggressive debt burden bear a higher price of uncertainty in the form of exchange rate differences on currency-denominated liabilities.

The share of retained earnings in the equity of Kernel and MHP, which systematically exceeds 100%, requires separate comment. This is not an anomaly but a consequence of IFRS consolidation under chronic depreciation of the hryvnia: the negative translation reserve, formed when the assets and liabilities of Ukrainian operating entities are translated into the reporting currency, reduces total equity below the level of retained earnings. Autonomy ratios of companies reporting in hryvnia and in foreign currency are therefore not directly comparable without analytical adjustment.

The case of Agroton supports a conclusion that is no less important. The company had the lowest debt burden in the sample and, at the same time, experienced the sharpest decline – up to the complete cessation of operating activity, with revenue falling from USD 57 million in 2021 to USD 0.086 million in 2024. A balance sheet that formally appears healthy

is thus deprived of any operational foundation: a low debt burden is a necessary but not a sufficient condition of resilience.

The recovery phase of 2023–2024 reveals a further regularity: capital structure determines not only the depth of the decline, but also the trajectory and speed of recovery. Companies with a lower debt burden restore profitability faster, since their operating cash flow is not absorbed by debt servicing, whereas for aggressively leveraged holdings the gap between operating efficiency and net profit remains persistently wider – the chronic price of debt under elevated interest rates and currency instability. In parallel, geographic diversification operates as a factor of resilience and is frequently more significant: companies whose assets fell within combat zones suffered operational collapse irrespective of their balance sheet profile, while diversified holdings preserved their core production base even with partial damage.

The results allow the principles of capital structure optimization for the sector to be outlined: an autonomy ratio in the range of 65–75% as a benchmark under elevated uncertainty; preference for long-term over short-term financing, which reduces refinancing risk at a crisis moment; minimization of foreign currency debt exposure, since exchange rate differences proved to be the principal channel transforming an external shock into financial losses; and analytical adjustment of reported indicators for IFRS 16 lease liabilities and the negative translation reserve.

The analysis confirms that capital structure is a significant but not the sole determinant of resilience under exogenous shocks. Under systemic uncertainty the optimal structure for agricultural holdings gravitates towards a substantial predominance of equity over borrowed funds; yet an enterprise with a minimal debt burden but geographically concentrated assets proves more vulnerable than a well-diversified holding with a moderate debt portfolio. Resilience is therefore a systemic property in which financial stability, operational flexibility and geographic diversification act as complementary rather than interchangeable factors.

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