ACCESS TO FINANCE AND INVESTMENT TRENDS IN BULGARIAN AGRICULTURE

Mariya Peneva[*]
University of National and World Economy, Bulgaria.

Abstract
The paper analyses the evolution of access to finance and investment behaviour in Bulgarian agriculture during 2014–2024, a period spanning two Common Agricultural Policy programming cycles. Using data from national institutions, CAP implementation reports, and the Farm Accountancy Data Network, the study evaluates changes in the structure of finance, investment intensity, and the effectiveness of public financial instruments. A composite Financial Access Index, constructed from micro-data, captures farm-level differences in credit availability, borrowing costs, and participation in support schemes. The results reveal modest overall improvement in financial inclusion but persistent structural and regional asymmetries. Large, capital-intensive farms continue to dominate credit and investment activity, while smaller holdings rely primarily on self-financing and subsidies. Public support under the Rural Development Programme has facilitated modernization, yet has not fundamentally reduced financial exclusion or dependence on grants. Guarantee schemes and new financial instruments have broadened access only marginally due to limited scale and administrative complexity. The paper concludes that enhancing financial literacy, expanding risk-sharing and guarantee mechanisms, and aligning finance with green and digital transformation priorities are critical for improving the competitiveness and resilience of Bulgarian agriculture. Stronger coordination among financial institutions, policymakers, and advisory services remains essential for building an inclusive and sustainable agricultural financial ecosystem.

Keywords
agricultural finance; investment behaviour; CAP; financial inclusion; guarantee schemes

JEL Classification
Q20, Q14, Q18

[*] Corresponding author, **Mariya Peneva** – peneva_mm@unwe.bg.

Introduction

More than three decades after the beginning of structural reforms, Bulgarian agriculture still experiences the interdependence between structural conditions and financial capacity as key determinants of competitiveness. The combination of fragmented farm structures and insufficient investment constrains adjustment to policy priorities and market dynamics (Koteva, 2016; Beluhova-Uzunova, 2019). Access to finance, therefore, emerges as a critical factor influencing both the pace and direction of modernisation, shaping how farms invest, innovate, and respond to the evolving policy and market environment.

The structural transformation of Bulgarian agriculture has advanced in terms of land consolidation and productivity growth in many of the subsectors, but disparities remain significant. The coexistence of a small number of large, capital-intensive enterprises and a majority of small and medium-sized holdings defines a dual structure with uneven access to financial resources (Koteva, 2023; Atanasov et.al., 2023). Large farms often secure bank loans or leasing arrangements and invest in modern machinery or digital tools, while smaller farms rely mainly on self-financing, short-term credit, or support from public programmes (Kaneva & Anastasova, 2009; Kirechev, 2021). This pattern sustains the polarisation of the sector and limits the potential for competitive development.

The financial environment of Bulgarian agriculture, on the other side, is still constraining. Financial institutions continue to consider the sector as high-risk due to the price volatility, climate uncertainties, and limited collateral value of assets (fi-compass, 2020). Farmers often face information barriers, limited experience in financial planning, and administrative burdens when applying for credit or investment support (Yalamov, Vutsova, & Arabadjieva, 2021). As a result, investment intensity remains below the EU average, and a significant share of capital renewal depends on public subsidies rather than market-based finance (Blagoeva, 2025). Policy instruments under the Common Agricultural Policy (CAP) have played a central role in mitigating some of these barriers. During the 2014–2020 programming period, investment support under the Rural Development Programme (RDP) and guarantee schemes have enhanced financial inclusion. However, the overall impact on long-term access to finance is contradictory. The distribution of support has favoured medium and larger farms with the administrative and financial capacity to meet project requirements, while smaller and younger farmers have often remained outside (Koteva, 2023). The 2023–2027 CAP period introduces a stronger focus on sustainability, digitalisation, and resource efficiency, making financial access an even more decisive element of the transition process of small and medium size farms.

The motivation for this study derives from the need to assess whether access to finance in Bulgarian agriculture has evolved during the past decade and how this evolution supports structural and technological transformation of the sector. Existing research provides valuable insights into production and efficiency aspects, but less evidence on the financial dimension of the adjustments (Koteva, 2016; Yalamov, Vutsova, & Arabadjieva, 2021). Moreover, most analyses address the availability of subsidies rather than the functioning of credit markets or the effectiveness of financial instruments (Mishev et.al., 2019). Understanding how financial access interacts with farm size,

investment behaviour, and policy support is therefore essential for evaluating the sector's capacity to meet the objectives of competitiveness, sustainability, and resilience.

The overarching objective of the study is to analyse the relationship between financial access and investment behaviour in Bulgarian agriculture during the period 2014–2024.

The study examines this relationship through a combination of data from EU and national statistics, Farm Accountancy Data Network (FADN), and institutional reports (Ministry of Agriculture and Food of Bulgaria (MAF)). The analytical framework is based on the assumption that financial access functions both as a precondition and as a driver of competitiveness. Improved access enables farms to invest in technology, risk management, and sustainable practices, while financial constraints reinforce structural disparities and limit the diffusion of innovations. Evaluating how access to finance evolves over time thus provides insight into the sector's broader capacity to adapt to policy and market changes.

The relationship between access to finance, investment behaviour, and competitiveness in agriculture can be interpreted through the lens of credit rationing (Stiglitz & Weiss, 1981) and institutional path dependency in post-transition economies. Limited access to external finance constrains the ability of farms to invest in modernisation, while better financial inclusion enables structural upgrading and productivity gains. However, in contexts like Bulgaria, the governmental framework of institutions and dual farm structures creates persistent asymmetries in finance allocation. Against this background, the study addresses the following research question: How has the evolution of access to finance shaped investment behaviour and structural development in Bulgarian agriculture during 2014–2024?

Based on the conceptual framework, the study explores the following hypotheses:

H1: Improved access to external finance is positively associated with higher investment intensity in Bulgarian agriculture.

H2: Financial access remains uneven, with large and capital-intensive farms capturing the majority of credit and investment support.

H3: Public financial instruments (grants and guarantees) partially mitigate structural disparities and do not fully eliminate financial exclusion.

H4: Integration of sustainability and digitalisation priorities under the CAP 2023–2027 will increase the strategic importance of financial inclusion as a driver of competitiveness.

These hypotheses guide the descriptive and comparative analysis presented in the following sections. Section 2 reviews relevant literature on agricultural finance, investment behaviour, and policy interventions in Bulgaria. Section 3 presents the data sources and methodological approach, outlining the variables and indicators used to analyse financial and investment trends. Section 4 discusses the empirical results, focusing on changes, regional patterns, differences among farm groups and policy implications. Section 5 concludes with the main insights and suggestions for further research and policy development.

1. Review of the scientific literature

Building on the conceptual model introduced above, the relationship between access to finance and agricultural performance is recognised as a central element of structural transformation in the sector. Access to finance functions both as an enabling factor and a constraint within the agricultural development process. It is a key condition for the modernization and long-term competitiveness of the farms. The underinvestment reinforces productivity gaps and slows down structural adjustment. Limited financial access reduces the ability of farms to replace outdated equipment, introduce innovations, or diversify activities, leading to productivity gaps between farms. Empirical studies consistently demonstrate that financial constraints limit investment, technological adoption, and productivity growth, particularly among small and medium-sized farms (Ferto et al., 2011; Ciaian, Fałkowski & Kancs, 2012; Szafraniec-Siluta et al., 2024). In agriculture, where production cycles are long and risks are high, financial constraints often translate directly into lower levels of investment and slower technological change. Agricultural activities are capital-intensive, seasonal, and exposed to production and market risks, which shape both the demand for and the supply of financial services.

The theoretical foundations of agricultural finance emphasise the presence of information asymmetry, collateral limitations, and high transaction costs (Ferto et al., 2011). In response to these challenges, public policy seeks to reduce financial barriers through subsidies, guarantees, and interest-rate support. Therefore, the relationship between financial resources and investment activity has been widely discussed in the agricultural economics literature, with particular attention to market imperfections, institutional design, and policy interventions (European Commission, 2011; Czubak, Pawłowski & Sadowski, 2021; Koteva, 2023). The interventions, through subsidies or credit guarantees, are often justified as a response to the system failures (Ciaian, Pokrivčák & Szegenyová, 2012; Migliorelli, 2019). The problem is particularly pronounced in post-transition countries, where credit systems have developed unevenly, and public support remains a major driver of capital renewal (Czubak, Pawłowski & Sadowski, 2021).

In Central and Eastern European member states, the interaction between policy support and financial development has produced mixed outcomes. Studies highlight that CAP investment measures have encouraged modernization and the adoption of new technologies but have also reinforced structural polarization, as they tend to benefit larger farms with stronger administrative capacity and better access to co-financing (Petrick & Latruffe, 2003; Ciaian, Fałkowski & Kancs, 2012). Access to credit remains limited, also due to dependence on subsidies and lack of financial literacy, especially for smaller producers. Comparative analyses (Bakucs, Bojnec, Fertő & Latruffe, 2015) also show that investment activity correlates with the maturity of rural financial institutions and the integration of guarantee schemes. In countries where credit cooperatives or specialized agricultural banks remain active, investment intensity tends to be higher (Alho, 2019; Candemir, Duvaleix and Latruffe, 2021). Across the region, sustainable agricultural finance depends not only on capital availability but also on institutional design, financial literacy of farmers, and the coordination between policy and market mechanisms.

The literature on agricultural finance in Bulgaria remains limited compared to other EU member states. Earlier analyses emphasise the restructuring of credit relations during the transition period and the role of state institutions in filling the financing gap (Kaneva & Anastasova, 2009; Koteva, 2016). Over time, national programmes and CAP measures became the dominant channel for investment support. However, they have not fundamentally changed the relationship between farms and private financial institutions, and the substantial part of agricultural investment continues to be financed through own resources or short-term leasing, rather than long-term credit (Kirechev, 2023). Data indicate that agricultural loans account for 6,1% of total lending, a share that has remained largely stable over the past decade (Bulgarian National Bank, 2025). Recent analyses note emerging diversification in financing patterns. Leasing companies and credit suppliers have become more important, and guarantee schemes under the RDP 2014-2020 have improved, despite the scale remaining limited (Blagoeva, 2025). There is growing interest in instruments supporting "green" and "digital" investments, yet their uptake is still modest (Petrov, 2025) under CAP 2023-2027. Empirical studies also identify several persistent barriers similar to those already mentioned. Collateral requirements remain high, particularly for small and medium-sized farms with limited fixed assets (Petrov, 2025; Blagoeva, 2025). Administrative procedures for both public and private financing are complex and time-consuming (Petrov, 2025).

The reviewed literature provides useful insights into the institutional and policy context of agricultural finance, but it rarely links financial access with actual investment dynamics. There is limited empirical evidence on how financing conditions affect actual investment behaviour at the sectoral or regional level, and how these differences evolve across programming periods. Furthermore, the sustainability and digitalisation are now central policy objectives, and the empirical evidence on how these priorities translate into new forms of agricultural investment is still scarce. This study contributes to the existing research by systematically analysing access to finance and investment trends in Bulgarian agriculture over the period 2014–2024. It focuses on identifying patterns of financial inclusion, regional disparities, and the emergence of new investment pathways related to sustainability and digitalisation. By integrating multiple data sources, national statistics, FADN data, and institutional information, the analysis aims to provide an updated and integrated view of financial developments in the sector. In doing so, it contributes to the discussion on how financial mechanisms influence investment behaviour and what this implies for the modernization and resilience of Bulgarian agriculture.

2. Research methodology

The analysis of access to finance and investment trends in Bulgarian agriculture for the period 2014–2024 is based on a combination of quantitative data and grey literature. The approach is descriptive and comparative, focusing on temporal and structural dynamics to identify how financial access has evolved across the two CAP programming periods and to assess its influence on investment behaviour at sectoral and regional levels.

Data sources

The study relies on several complementary data sources: 1) national institutions data from: MAF on gross fixed capital formation, regional economic indicators used to assess investment dynamics and regional disparities; State Fund Agriculture information on CAP investment measures, financial instruments, and guarantee schemes implemented through the RDP; Bulgarian National Bank (BNB) on annual data on credit volumes, interest rates, and loan structure by sector; 2) FADN – micro-level data on farm income, investment, and debt indicators by type of farming and economic size. FADN data are used to identify patterns of financial dependency and capital intensity across farm categories and regions; 3) Eurostat for contextual comparison, when appropriate.

Data coverage extends over the period 2014–2024, corresponding to the full implementation of the 2014–2020 CAP period and the initial phase of the current 2023–2027 period. For comparability, all financial values are expressed in constant prices, and structural indicators (e.g., investment, capital per hectare) are standardized across datasets.

Analytical framework

The analytical framework follows the logic of linking financial access, investment activity, and policy instruments. It is organized along three dimensions:

Financial dimension – assessment of the availability, structure, and cost of finance for agricultural producers.

Investment dimension – examination of trends in gross fixed capital formation and investment composition.

Policy and institutional dimension – evaluation of the scope and effectiveness of CAP investment support and guarantee mechanism.

The interaction between these dimensions is analysed through temporal trends and structural comparisons. The emphasis is on identifying whether changes in the financial environment correspond to shifts in investment behaviour and whether public support mechanisms have contributed to improved financial inclusion. The hypothesised relationships are summarized in Figure 1.

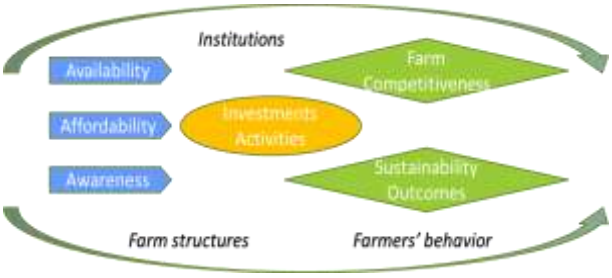

Figure no. 1: Linkages between access to finance, investment behaviour, and structural transformation

Source: author's elaboration

Methodological approach

The methodological approach combines descriptive statistics, ratio analysis, and comparative assessment across programming periods. Key methodological steps include: 1) Trend analysis of financial and investment indicators (2014–2024), identifying shifts in credit supply, investment structure, and policy support; 2) Comparative analysis of financing and investment across farm groups, using FADN data to capture structural differences; 3) Policy evaluation perspective, assessing the relative contribution of CAP investment measures and financial instruments.

The analysis aims to provide a transparent overview of financing patterns and to connect observed changes to institutional and policy developments. The results are interpreted in relation to the broader goals of competitiveness, sustainability, and digitalisation outlined in the CAP Strategic Plan for Bulgaria.

Empirical strategy

To complement descriptive statistics, the study applies a quantitative approach based on data availability from the FADN for the period 2014–2023. The multidimensional financial indicators are summarised within a Financial Access Index (FAI), constructed as a composite measure combining: credit volume per farm (EUR/farm), share of loans in total liabilities (%), average cost of credits (interest rate, %), and participation in public financial instruments. The index is obtained as a weighted average. The FAI allows for comparing financial accessibility across farm sizes, types, and regions over time.

Limitations

Several limitations must be acknowledged: 1) the available data on credit activity often aggregate agriculture with forestry and fisheries, which may bias the sector-specific variations; 2) FADN coverage does not fully represent the smallest farms, which limits the assessment of financial exclusion; 3) some indicators for the 2023–2027 period remain provisional due to ongoing implementation of new financial instruments. These limitations do not undermine the validity of the analysis but indicate areas for further research, particularly at the micro-level through targeted surveys or case studies.

3. Results and discussion

This section presents the main results of the analysis, organised around three interrelated dimensions: 1) financial trends and access to credit, 2) investment dynamics and structural patterns, and 3) the role of policy instruments and regional disparities. The discussion highlights both progress and persistent constraints in agricultural finance during the period 2014–2024.

Financial trends and access to credit

Over the past decade, the volume of agricultural credit in Bulgaria has grown moderately but remains small compared to other sectors of the economy. Data from the BNB show that loans to agriculture, forestry, and fisheries represent around 6% of total corporate lending. Although this share has been relatively stable, as shown on the figure (figure no.2), absolute credit volumes increased by approximately twice between 2014 and 2024, reflecting gradual expansion of banking activity in the sector.

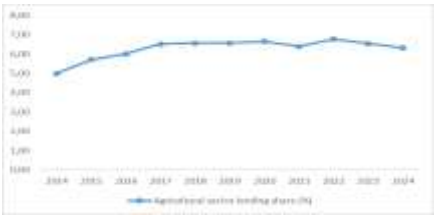

Figure no. 2: Agricultural sector's share in total corporate lending (%, 2014–2024)
Source: author's calculations based on BNB (2025)

Interest rates for loans (presented on monthly basis in figure no.3), relevant for the agricultural enterprises as well, have followed the general downward trend observed in the national economy until 2022, after which moderate increases occurred.
Credit conditions remain more favourable for large and established farms, which can provide collateral and demonstrate stable cash flow, namely through the CAP support entitled by the single area payment scheme, implemented in Bulgaria. Smaller and newly established holdings continue to face restricted access due to perceived risk and insufficient guarantees.

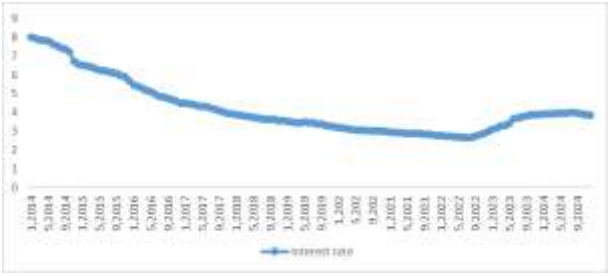

Figure no. 3: Interest rate for corporate lending (%, 2014–2024)
Source: author's calculations based on BNB (2025)

Commercial banks remain cautious in agricultural lending, focusing mainly on short- and medium-term loans related to working capital or equipment leasing (fi-compass, 2020). Long-term investment loans are less common, particularly outside the large-farm segment (Kirechev, 2021). The use of guarantee schemes under the RDP has improved loan accessibility for some beneficiaries, but their overall scale is limited (European Commission DG AGRl, 2018; fi-compass, 2020). Leasing companies and input suppliers have partially filled this gap, offering alternative financing options, though often at higher cost and shorter maturity (Ministry of Agriculture of the Republic of Bulgaria, 2025).

Investment dynamics and structural patterns

Investment activity in Bulgarian agriculture has shown uneven dynamics. Gross fixed capital formation increased during 2014-2022, driven by the implementation of RDP investment measures, followed by a period of no significant growth and even decrease,

as shown in the figure (figure no.4). In constant prices, total agricultural investment remains low in real terms, indicating persistent undercapitalisation.

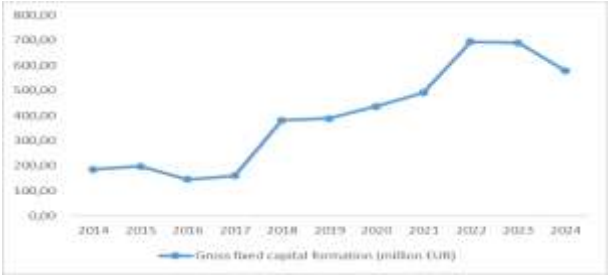

Figure no. 4: Gross fixed capital formation in Bulgarian agriculture (million EUR, 2014–2024)

Source: author's calculations based on Eurostat (2025)

FADN data confirm strong differentiation by farm type and size, as shown on the figure (figure no.5). Large arable farms and those engaged in permanent crops account for a significant share of total investment, often using a mix of own resources, leasing, and CAP-supported projects. Livestock farms and small mixed holdings invest mainly in maintenance and replacement of existing assets.

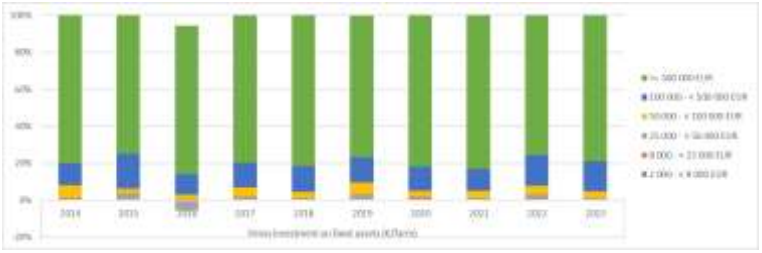

Figure no. 5: Gross investments in fixed assets in Bulgarian agriculture by farm size (EUR/farm, 2014–2023)

Source: author's calculations based on FADN (2025)

The composition of investment has gradually changed. Expenditure on machinery and equipment continues to dominate, representing around half of total capital formation, but there is a visible increase in spending on digital tools, precision technologies, and renewable energy systems as shown on the figure (figure no.6). These trends are partly driven by policy incentives under the 2023–2027 CAP period and the growing need to reduce production costs and environmental impact. However, many investments remain, keeping the status quo rather than being transformative, reflecting limited financial capacity and risk aversion among smaller farms.

These results partially confirm H3 and lend provisional support to H4.

Public financial instruments under the RDP and CAP measures have mitigated some barriers to credit access, especially through guarantee schemes and subsidized investment projects. However, their effect remains uneven: medium and large farms benefit most, while smaller and newer holdings continue to rely on self-financing. Therefore, public intervention improves access at the margin but does not fully eliminate financial exclusion.

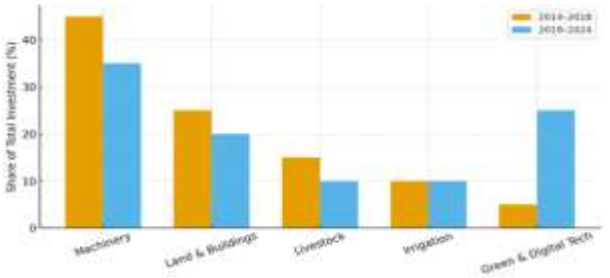

Figure no. 6: Investments by type in Bulgarian agriculture (%, 2014–2024)
Source: author's calculations based on MAF (2025)

The integration of sustainability and digitalisation objectives has increased the strategic importance of financial access, encouraging investment in renewable energy, precision technologies, and circular practices. Nevertheless, uptake remains concentrated among farms with established credit histories and advisory support. The transition toward sustainable finance is visible but not yet inclusive.

Role of policy instruments

Public support remains the main driver of agricultural investment in Bulgaria. The RDP 2014–2020 provided substantial resources for modernization, which funds contributed to machinery renewal, construction of storage facilities, and introduction of energy-efficient technologies. However, the distribution of support remains uneven and very dynamic, as visible from the figure (figure no.7). Beneficiaries are concentrated in regions with more developed agricultural structures. Smaller and remote rural areas have lower participation due to limited administrative capacity and co-financing ability.

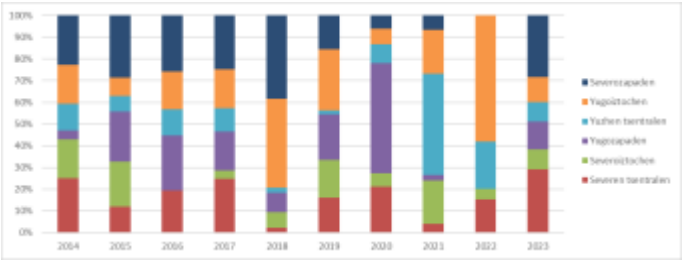

Figure no. 7: Subsidies on investments in Bulgarian agriculture (EUR/farm, 2014–2023)
Source: author's calculations based on FADN (2025)

The analysis shows higher investment per hectare in the East- and Central North regions, where large commercial farms dominate. These areas also have better access to bank branches and leasing services. In contrast, the North-West regions show lower investment activity and a higher share of self-financing. Such disparities mirror broader socio-economic inequalities between rural regions and underline the importance of targeted financial instruments to support smaller and more vulnerable farm structures. Without improved financial access, the regional polarisation of agriculture is likely to deepen, undermining the cohesion objectives of rural development policy.

Evaluation reports indicate that while RDP investment measures improved farm competitiveness, they did not significantly increase overall access to finance or reduce structural disparities (Mishev et al., 2019, Ministry of Agriculture and Food). Financial instruments introduced during the same period, such as guarantee funds managed by the Fund of Funds, represent an important innovation but remain modest in scope of the volume of guaranteed agricultural loans (Aleksandrova, 2017; European Commission, 2023). Nevertheless, their qualitative impact is notable: participating banks have started to develop specialized agricultural products and risk assessment procedures (Aleksandrova, 2017). These changes may facilitate broader financial inclusion in this programming period. The CAP Strategic Plan 2023–2027 continues to emphasize investment support, but shifts focus toward sustainability and digitalisation. These new financial instruments aim to attract private co-financing and stimulate investment in low-carbon technologies, circular economy initiatives, and digital tools (Kirechev, 2023). The long-term effectiveness of these mechanisms will depend on the institutional coordination between the MAF, Fund of Funds, private financial institutions, and advisory services that can assist farmers in project preparation and execution.

Empirical findings based on the FAI

To complement the descriptive evidence, the study applies a quantitative assessment of financial accessibility using the FAI, derived from FADN data for the period 2014-2023. The index integrates multiple financial indicators, as explained in the methodological part, into a single composite measure of financial access. Each component is standardized, and the overall FAI is computed as a weighted average reflecting the relative importance of credit availability and cost.

The FAI results indicate a gradual improvement in financial access during the decade, though progress remains highly uneven across farm categories (figure no.8).

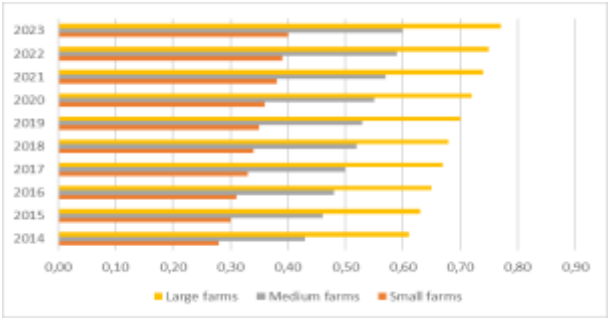

Figure no. 8: Evolution of the Financial Access Index (FAI) by farm size in Bulgarian agriculture (2014–2023)

Source: author's calculations based on FADN (2025)

Large arable and permanent crop farms show the highest FAI values, reflecting stronger credit exposure, stable collateral positions, and more frequent participation in CAP investment measures. Conversely, small mixed and livestock farms maintain low FAI scores, suggesting persistent credit constraints and limited engagement with financial instruments.

Regional comparison based on the FAI highlights a north–south divide: farms in the Central and Eastern North regions demonstrate the strongest financial inclusion, while those in the North-West and mountainous areas remain below the national average (figure no.9). This spatial differentiation corresponds with broader disparities in investment intensity and institutional presence of financial intermediaries.

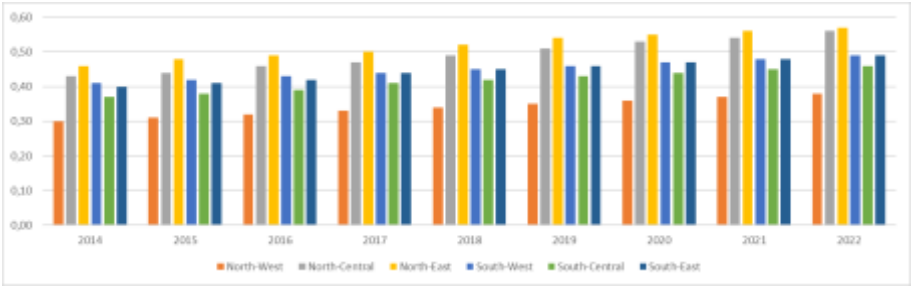

Figure no. 9: Evolution of the Financial Access Index (FAI) by region in Bulgarian agriculture (2014–2023)

Source: author's calculations based on FADN (2025)

Figures no. 8 and 9 illustrate the evolution of the FAI across farm sizes and regions between 2014 and 2023. The steady yet uneven trajectory supports the hypothesis that improvements in financial access primarily benefit larger and capital-intensive holdings, while smaller farms continue to rely on self-financing and/or subsidies. The FAI results reinforce the descriptive findings on credit and investment trends, confirming that financial access functions as both a driver and a constraint of structural transformation.

While CAP-supported financial instruments contribute to modest improvements, the overall system still favours farms with greater administrative and financial capacity.

The results derived from the FAI confirm H1, indicating that improved access to external finance corresponds to higher investment intensity at the farm level. Both the upward trajectory of the FAI and the concentration of investment among financially stronger farms support this relationship. Thus, the hypothesis H2 is also confirmed: financial access remains uneven, with large and capital-intensive farms consistently achieving higher FAI scores and capturing a disproportionate share of investment support. This persistent asymmetry underlines the dual structure of Bulgarian agriculture and the limited inclusiveness of financial intermediation.

Overall, the empirical findings validate the analytical framework presented in the introduction. Financial access continues to shape investment behaviour and structural transformation, but its effects remain highly differentiated. Hypotheses H1 and H2 are confirmed, H3 is partially confirmed, while H4 is only provisionally supported due to the early stage of green and digital finance implementation. The persistence of structural dualism and regional disparities suggests that future policies must target not only capital availability but also institutional and educational preconditions for effective financial inclusion.

Policy Implications

Overall, the results confirm that financial access remains a structural barrier for agricultural investment in Bulgaria and one of the decisive factors shaping its competitiveness. While public support through national financial instruments and CAP has mitigated some constraints, they have not fundamentally changed the pattern of dependence on subsidies or improved the relationship between farmers and private financing institutions. The persistence of collateral barriers, administrative complexity, and uneven financial literacy continues to limit the effectiveness of existing instruments. At the same time, gradual institutional learning is taking place. Banks and leasing companies have become more familiar with agricultural risk, and the introduction of guarantee schemes has opened space for further expansion of credit. The next stage of policy development should focus on scaling up financial instruments, integrating sustainability objectives, and strengthening advisory services that connect farmers with financial institutions. The evolution of agricultural finance will depend not only on public support but also on the ability of the sector to generate viable investment projects that align with the goals of competitiveness and the green and digital transition.

Financial inclusion in agriculture requires both institutional and educational measures. Guarantee mechanisms should be scaled up and better integrated into the banking system to reduce collateral requirements for smaller and younger farmers. Experience from the Fund of Funds shows that guarantees can lower lending risk and attract new financial institutions. Their broader use, combined with advisory assistance, would expand access to credit and improve the sustainability of financial flows. At the same time, farmers' financial literacy and project preparation capacity remain critical. Training and advisory services should focus on financial management, business planning, and risk assessment as well.

The efficiency of agricultural finance depends on the coherence between public support and private lending. Coordination among state institutions and commercial banks should

move beyond administrative implementation to joint planning of financial products to reduce transaction costs and increase predictability for both farmers and creditors. Monitoring and evaluation mechanisms should track not only the number of supported projects but also the crowding-in effect of public funds on private finance.

Persistent regional disparities in financial access suggest the need for more differentiated financial policies. Regions with lower investment intensity require targeted instruments combining small-scale grants, microcredit, and guarantee schemes tailored to the structural characteristics of local farms. Encouraging partnerships between local credit cooperatives, municipal authorities, and rural advisory services could enhance outreach and trust. Structural differentiation also requires a more inclusive approach to young farmers and small holdings to improve the territorial balance of investment and contribute to cohesion objectives.

The transition toward sustainable and digital agriculture requires financial instruments adapted to new types of investment. Many green and digital technologies have longer payback periods and uncertain market returns. Financial schemes should therefore provide flexible repayment terms and risk-sharing mechanisms. Combining grants with guarantees or low-interest loans can improve the feasibility of such investments. A stronger role for advisory and demonstration projects would also increase awareness of the financial and environmental benefits of sustainable investments. Cooperation between banks, technology providers, and farmer organisations could help develop investment models that integrate financial, technical, and environmental components. Linking these models to eco-schemes or carbon farming initiatives would strengthen the connection between financial access and environmental outcomes.

Effective financial policy requires timely and detailed data. Current statistics on agricultural lending are aggregated and provide limited insight into farm-level access and loan characteristics. Improving data collection and integrating financial indicators into the monitoring systems would support evidence-based policymaking. Transparency on loan approval rates, interest differentials, and regional allocation would allow better evaluation of the inclusiveness and efficiency of financial instruments. The overall implication is that the modernisation of Bulgarian agriculture depends not only on the amount of available funding but also on the functionality of the financial ecosystem. A more diversified, transparent, and inclusive financial system would accelerate investment, support technological adaptation, and strengthen the sector's contribution to sustainable rural development.

Conclusions

The analysis of access to finance and investment trends in Bulgarian agriculture for the period 2014–2024 confirms that financial constraints remain one of the main structural challenges facing the sector. Although the availability of credit and investment support has improved compared to the early EU post-accession years, the pattern of financing continues to reflect strong asymmetries between farm groups and regions. Large farms benefit from greater access to credit, leasing, and co-financing opportunities, while smaller and younger producers rely heavily on their own resources or public grants. Public support under the CAP has been instrumental in maintaining investment activity and stimulating technological renewal. However, it has not fundamentally changed the

structure of financial access or created a well-working credit market for agriculture. Guarantee schemes and financial instruments introduced during the last programming period represent a positive step but remain limited in scope. Regional disparities and the underrepresentation of smaller holdings in investment programmes persist, indicating the need for more inclusive and flexible financial mechanisms.

The results highlight that modernization and competitiveness depend not only on the scale of financial resources but also on the efficiency and coordination of financial institutions and policy instruments. Strengthening the interaction between the institutions, commercial banks, and advisory services is essential for improving the design and delivery of financial products. Expanding guarantee mechanisms, simplifying access procedures, and promoting financial literacy can significantly enhance the effectiveness of support measures. Future policy efforts should focus on: 1) building a more diversified and transparent financial system that integrates public and private instruments to serve farms of different sizes and orientations; 2) adapting financial tools to the requirements of sustainable and digital transformation; 3) improving the evidence base for decision-making through systematic monitoring of financial flows, regional disparities, and investment outcomes.

Overall, the findings suggest that the financial environment of Bulgarian agriculture is gradually evolving from dependence on subsidies toward a more complex system combining public and market-based mechanisms. Ensuring that this evolution leads to inclusive and sustainable growth remains a central task for both policy and research in the coming years. Therefore, in the future, the research should deepen the analysis at the farm level, combining quantitative data with case studies to explore behavioural aspects of financial decision-making and the role of advisory support. This direction is especially important given that some credit data aggregate agriculture with forestry and fisheries, the smallest farms are underrepresented in FADN, and several indicators for the 2023–2027 period remain provisional. These constraints do not affect the core findings but point to the need for deeper farm-level research. Understanding how farmers perceive risk, evaluate financial options, and plan investments will help tailor future instruments more effectively.

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