INVESTMENT ACTIVITY IN PLANT-GROWING - ASSESSMENT AND FUTURE PROSPECTS

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ABSTRACT

The agricultural sector in Bulgaria faces a number of challenges related to the new programming period for Europe and the prospective (forthcoming) technological transformation. The new realities in the transition period (2021-2022) require in-depth research activities on the readiness of the sector in terms of investment opportunities and prospects for the future. The purpose of this study is to analyze the investment activity of SMEs in the plant-growing sector (crop-raising sector) and to identify some of the main determining factors. The dynamics and the amount of investments in the sector is analyzed through the incremental changes that have occurred in the provision of tangible fixed assets. Accordingly, the impact of economic profitability, leverage as well as company refinancing opportunities are taken into account.

Key words: plant-growing, investment activity, financing, gross value added (GVA), sales revenues

INTRODUCTION
The structural changes in the agricultural sector and the changed CAP (Common Agricultural Policy) in 2007 with support based on arable land, led to an increase in gross output in the plant-growing sector, though with distorted sub-sector performance, in favor of grain production. The relative lag of the sector in terms of GVA is striking (notable), as for the last two years the decrease is by almost 1%. On the other hand, the value added by the agricultural sector according to the latest data for 2019 amounts to BGN 3,876 million at current prices. In real terms, the value added has increased by 4.1% compared to the previous year.

In periods of technological change and renewal, the level of uncertainty is higher and managerial knowledge remains crucial for the investment choice (1). Therefore, the analysis of the environment for investment supply and demand,

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as well as the size, structure, and dynamics of investments in the sector are of particular importance. This study focuses on one of the criteria of the European Commission (Decision 94/173/EC), namely the investment objectives as: environmental protection measures; innovation and production of new products; reduction of production costs; production of organic products. The purpose of this study is to analyze the investment activity in the plant-growing (crop-raising) sector and to identify some of the main determining factors, such as incremental changes in the provision of tangible and intangible assets, financial leverage as well as the factors representing the refinancing opportunities for the companies. For this purpose, a stratified extract and panel data of 746 companies from the plant-growing (crop-raising) sector for the period 2007-2019 were used.

LITERATURE REVIEW
Investment activity at the company level, as a specific area of the overall corporate activity, focuses mainly on the renewal and expansion of tangible and intangible fixed assets. Its financing

is characterized by decisions with long-term perspective and increased risk. In addition, investment capital can be acquired and invested through other methods such as leasing and franchising, which significantly reduce the degree of risk (2).

The successful investment activity depends on the created investment environment, on the dynamics of the factors that form a favorable or unfavorable investment climate (3). In this context, an important issue remains the choice of the evaluation indicators, whereas on the one hand, the growth of the evaluation indicators should be determined by the investment, and, on the other hand, these should determine the efficiency of the investment activity. The changing pattern of capital and the distribution from tangible to intangible assets does not appear to be in line with the recently observed slow volumes of investment at both national and European level. In addition, some evidence of complementarity between investments in different types of assets prove that these are an obstacle to investments related to one type of assets that may indirectly impede investments in another type of assets, as there are reciprocal synergies, in particular between the tangible and intangible assets, but also between the different types of intangible assets (4).

Financing costs are of key importance to making investment decisions, regardless of the type of investment assets. Comparing the two types of assets, most likely regarding the intangible ones, returns and risk are expected to be higher due to their specific characteristics and more difficult replication (Hunter et al., 2005). One of the important predictors of credit risk in all industries and sectors is the financial leverage as considered and analyzed by a number of authors (6-8). For example, Beck et al. (9) used company-level data that included both small and large companies and found out that small companies used less external financing, especially bank loans. In their study, Cathcart, et al. (10) find that current liabilities are a source of funding that can be more easily accessed by SMEs. A significant increase in short-term current liabilities increases the risk of reversion and therefore the risk of default. The maturity structure of liabilities explains the different effects of leverage on SMEs and large

companies. In this way, regulators could try to prevent the vicious circle of excessive short-term lending, leading to higher levels of default risk, by giving SMEs an easier access to long-term financing.

A numerous studies related to the financial results of companies in the agricultural sector, give a special place and role of return on assets, profit margin and size of the company, as determining factors of growth, investment activity, efficiency, and competitiveness. The influence of the factors listed above might be diverse. For example, the potential impact of the business size defined by the size of the total assets is not decisive for the profitability of the cooperatives engaged in grain production, (11). Other studies demonstrate a positive correlation between the company's size, its profitability and financial performance. Pokharel et al. (12) prove that size is positively related to financial results, which shows that smaller cooperatives are more likely to experience financial difficulties due to the lack of profitability. Pokharela et al (13) investigated the impact of size and specialization on the average value and variation in the financial performance of agricultural cooperatives using a system of equations (3SLS) approach. The findings demonstrate a positive impact on profitability, debt-to-asset ratio, and size on the financial results of cooperatives.

Raised capital as a source of growth for companies might also appear as an unjustified risk for their economic activities. In such a context, the key role plays both operational management and good debt management. In certain cases, debt financing is a less costly option than using own funds (interest paid is a tax-deductible expense). However, an increase in borrowed capital might lead to a decrease in the liquidity and efficiency of companies. The mixed financial structure under certain conditions leads to an increase in return on capital. In this way, the management of financial sustainability and indebtedness become necessary conditions and prerequisites for company growth.

DATA, RESULTS AND DISCUSSIONS
The survey is based on a stratified proportional extract data for Bulgaria, which covers a total of 9698 observations, presented as 746 companies

in the plant-growing (crop-raising) sector (NACE.BG-2008), for the period 2007-2019. With this structure the extract data overcomes a number of limitations concerning the increase of statistical efficiency and the provision of adequate data for the analysis of various subsets separately. On the other hand, it overcomes potential problems with the periodicity, in reporting data and the adopted methodology of the National Statistical Institute NSI (ECB)[1]. The research horizon of thirteen years (2007-2019) aims to highlight the main factor influences and characteristics of pre-crisis and post-crisis management of investment activity at the company level for the sector in the Republic of Bulgaria. Simultaneously, an attempt was made to analyze the factors influencing the investment activity in the different subsectors and regions in the country. The use of company data is related to the high relative share of small enterprises in the sector, their diversity and industry characteristics, concerning both the formation of debt as well as the diversity in the presentation of revenues from financing. In turn, the data adequately cover the leverage and investment decisions of small enterprises and can provide a representative picture of the heterogeneity in the sector.

Table 1. *Structural characteristics of the plant-growing sector by number of employees*

Sectors	Micro enterprises	Small enterprises	Medium enterprises	Big enterprises
Growing of cereals, pulses and oilseed crops	26	618	70	1
Growing of stone fruits, berries and other fruits	-	1	13	1
Growing of grapes	2	42	10	-
Growing vegetables, watermelons and melons, root crops and tuberose plants	-	35	20	-
Growing of pits and stone fruits	-	5	5	-
Growing tobacco	-	10	-	-
Activities of plant nurseries excl. the forest tree nurseries		7	5	
Total	28	718	123	2

* The number of companies exceeds the value of the extract data due to the transfer of some of these in different time periods from one group to another.

The structural sector for the extract data is Growing of cereals, pulses and oilseed crops (NACE.BG-2008), which accounts for 90% of the observed units. Only 3.6% are represented by vegetable production and 2.6% by grape production.

The study used a net investment rate as an average mean of investment activity, defined as an annual percentage change in the value of the total tangible fixed assets. The factors selected as determining the investment activity are financial leverage, defined as the ratio of debt to the total assets. In this regard, the financial risk depends on the relative share of financing with commercial credits with fixed payments. Interests on loans, as a fixed financial expense, increase the risk to the company's profit, but on the other hand, when companies are able to pledge their assets as collateral, investments and loans become endogenously conditioned. Accordingly, the pledged assets support more loans, which allow investments in the future. Thus, the credit multiplier has an important impact on the investments when companies face credit constraints, as the case with the agricultural

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sector. The sensitivity of cash flows related to the investment increases in the degree of tangibility of limited company assets. However, if enterprises are not restricted by these factors, their sensitivity is not affected by the financial activity.

The indicator of economic profitability was used in order to highlight the efficiency of corporate management in converting assets into profit. In this regard, the annual growth rate of sales is accepted as a factor positively correlated with the investment activity of enterprises. The inevitably high rate of sales growth is a prerequisite for higher profits and a generator of company growth. On the other hand, the changes occurred in the revenues from the fundings in the previous period are accepted as a possible factor and a measure for positive or negative change in the investment activity for the current period.

Table 2. Variables (company level)

Variables	Definition
Net investment(NI)	Annual change in net total tangible fixed assets
Leverage (LI)	Ratio of total liabilities to total assets
Economic profitability (ROA)	Ratio of profit (before interest and taxes) to total assets
Sales growth (SG)	Annual sales growth rate
Tangible fixed assets intensity (T)	Share of tangible fixed assets in total assets

In **(Table 3)** are presented descriptive statistics of all variables included in the study. The standard deviation as a measure of the amount of variation shows low levels of return on assets, intensity of use of fixed assets and leverage, while for investment activity and sales growth, the high standard deviation shows that the values are distributed in an extremely wide range. On average, companies had a share of liabilities in relation to their assets (28%). The companies with the highest decile of debt hold 78% debt to assets. Only 3.5% of companies report low levels of financial leverage.

Table 3. Descriptive statistic

Variables	mean	sd	p50	p10	p90
NI	51.41	1172.06	1.67	-27.64	65.04
LI	0.37	0.68	0.28	0.35	0.78
ROA	0.09	0.13	0.57	0	0.23
T	0.45	0.19	0 45	0.19	0.71
SG	0.12	4.26	0.04	-0.53	0.59

For the considered thirteen-year period, 28 companies with data for the period 2016-2019 were included in the sample for micro enterprises. Only 17% of the respondents have reported positive investment activity. The remaining 83% of the total have a negative increase in fixed assets for that period. The return on assets for the same period varies in a wide range from negative to 14%. Nearly half of the companies have liabilities over 70% of the assets. Only economic profitability is positively correlated with the net investment activities. All other markers have a negative correlation coefficient with the net investments.
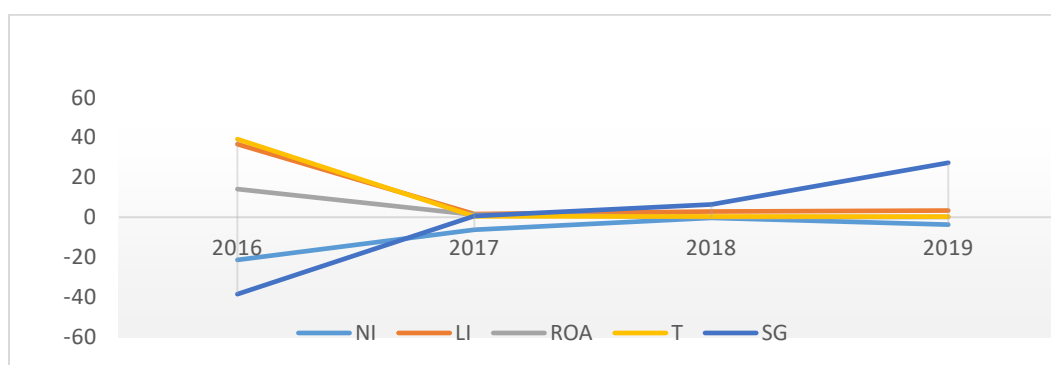
Figure 1. Investment activity and factor conditioning in micro enterprises in the plant-growing sector

Without absolutizing the results obtained, the findings of small enterprises in the sector are encouraging. For the whole studied period there is a stability of the share of fixed assets in the total assets, which might be an evidence for a well-managed investment and depreciation policy in those companies **(Figure 2).** Despite the reported low levels of economic profitability as a factor for investment growth, the profitability remains positive for the whole period. Low levels are observed with regard to producers of permanent plants (crops). However, we take into account the features and specifics of the investment process and the duration of their transformation from short-term to fixed assets. This, in turn, imposes an investment ahead of the pace, which was observed in the years 2010, 2016 and 2019.
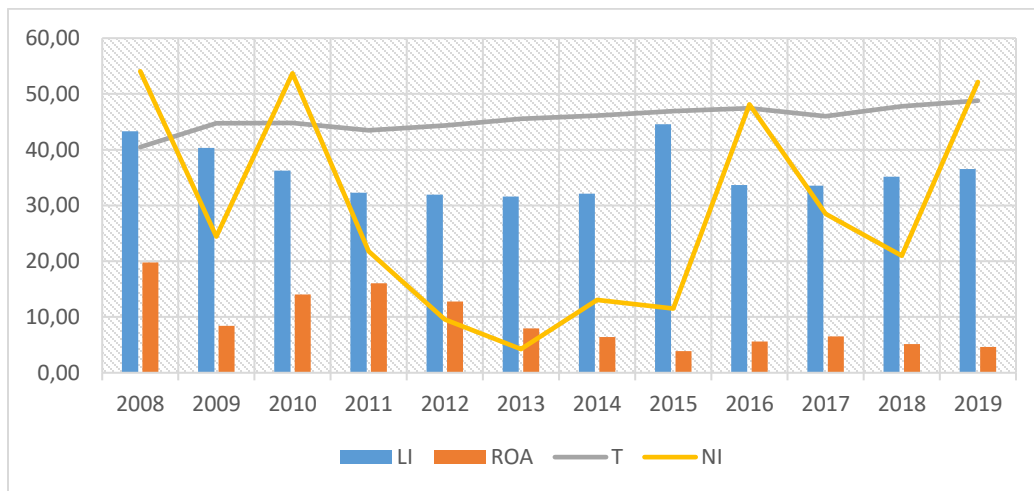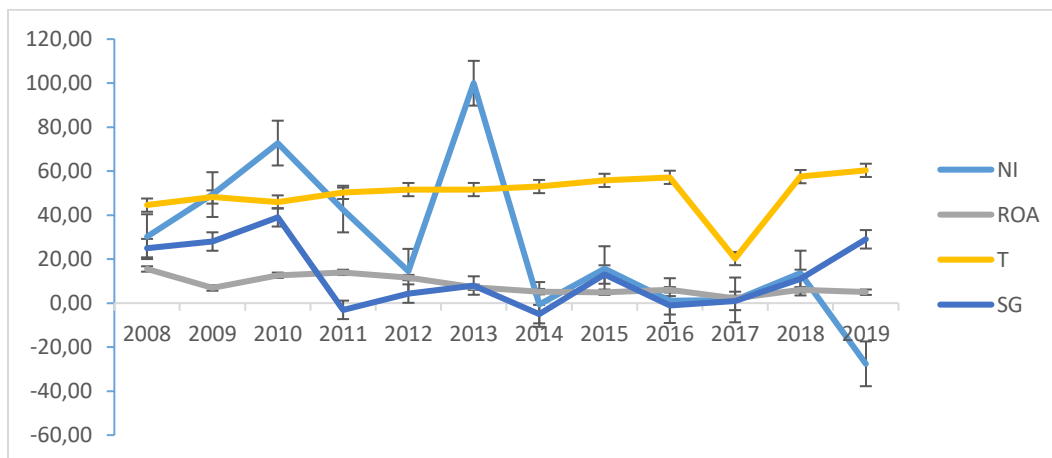

Figure 2. Investment activity and factor conditioning in small enterprises in the sector "Crop production"

In general, significant differences are expected in the role of financial conditions as determinants of investments between different types of assets. In this context, the access to finance appears as a key factor enabling investment. It is usually more difficult to use the proceeds from financing to intangible assets as collateral, i.e.. the respective investment tends to be financed more through internal funds. According to this analysis, only 20% of the total population have used this item in the future.

The lowest investment activity in medium-sized enterprises was observed in 2019, as the decline compared to the previous period was over 40% **(Figure 3)**. High levels of indebtedness during the financial and economic crisis have been overcome after 2012 and remain relatively stable. A negative trend is the reported low return on assets, which is negatively correlated with the investment activity.

Figure 3. Investment activity and factor conditioning in medium-sized enterprises in the pant-growing sector

CONCLUSION

This study attempts to assess the investment activity in the agricultural sector and in particular the plant-growing sector (crop-raising sector) for the period 2008-2019, highlighting some of the main determining factors. The dynamics and the amount of investments in the sector have been analyzed through the incremental changes that have occurred in the provision of tangible fixed assets. The effects of return on assets, profit margin, leverage and the intensity of the use of fixed assets, as determining factors for investment activities and growth are divergent. The high debt levels are negatively correlated with investments, especially in micro and small enterprises. The efficiency of the company management in converting the assets into profit is low, in almost 70% of the studied enterprises. Relatively well structured and balanced is the share of fixed assets in the total assets with regard to more than 75% of the enterprises included in this study.

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