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Financing Challenges of the Agriculture: A Comprehensive Sectoral and Company-Level Financial Analysis for Türkiye[1]

Arzu Şahin[2]

Tarım Sektörünün Finansman Zorlukları: Türkiye için Sektörel ve Şirket Düzeyinde Kapsamlı Bir Finansal Analiz	**Financing Challenges of the Agriculture: A Comprehensive Sectoral and Company-Level Financial Analysis for Türkiye**
Öz Bu çalışmada 2016-2022 dönemi için, katma değerine kıyasla Türk reel sektör ve borsa içindeki payı orantısız derecede düşük olan tarım sektörünün yanı sıra, seçilen halka açık bir sektör şirketinin finansal analizi yapılmıştır. Bulgular, sektörün düşük varlık devir hızı ve kârlılığı nedeniyle oluşan dış finansman ihtiyacını karşılamak için kısa vadeli borçlanmaya bağımlı olmasının finansal riski artırdığını ve hem likiditeyi hem de kârlılığı zayıflattığını göstermektedir. Analiz için seçilen şirket, güçlü finansal yapısı ve tarımsal teşvikler sayesinde borçlanma maliyetlerini düşürmeyi ve kârlılığını artırmayı başarmıştır. Yapısal ve finansal zorluklara rağmen, sektör, sağlam finansal temellere sahip şirketler için büyüme ve kâr fırsatları sunmaktadır.	**Abstract** In this study, a financial analysis was conducted on the agricultural sector of Türkiye—which has a disproportionately low share in the real sector and stock market relative to its added value—as well as on a selected listed company within the sector for the period 2016-2022. The findings indicate that the sector's reliance on short-term borrowing to meet its external financing needs arising from low asset turnover and profitability increases financial risk and weakens both liquidity and profitability. The company chosen for the analysis managed to reduce borrowing costs and improve profitability through a strong financial structure and agricultural incentives. Despite structural and financial challenges, the sector offers growth and profit opportunities for companies with robust financial foundations.
Anahtar Kelimeler: Tarım Sektörü, Finansal Analiz, Finansman Zorlukları, TCMB, BIST	**Keywords:** Agriculture, Turkish agricultural sector, Financial Analysis, Financing Challenges, CBRT, BIST
JEL Kodları: G30, G32, Q14, M41	**JEL Codes:** G30, G32, Q14, M41

Araştırma ve Yayın Etiği Beyanı	Bu çalışma bilimsel araştırma ve yayın etiği kurallarına uygun olarak hazırlanmıştır.
Yazarların Makaleye Olan Katkıları	Çalışmanın tamamı yazar tarafından hazırlanmıştır.
Çıkar Beyanı	Yazarlar açısından ya da üçüncü taraflar açısından çalışmadan kaynaklı çıkar çatışması bulunmamaktadır.

[1] This study is a revised and edited version of the abstract titled "Financial Landscape of Agriculture, Forestry, and Fishing Sector," which was presented at the 8th International Economic Research and Financial Markets Congress (IERFM 2024) in May 2024. The full paper was not included in the congress proceedings.

[2] Assoc. Prof. Dr. at Department of International Trade and Finance, Adana Alparslan Türkeş Science and Technology University, Faculty of Business, Adana, Türkiye, asahin@atu.edu.tr .

1. Introduction

The agricultural sector, which is a field of economic activity that includes not only soil cultivation but also animal husbandry, forestry, and fishing continues to maintain its importance for many economies, although its share in economies worldwide tends to decrease compared to the industrial and services sectors (Sağdıç & Çakmak, 2021: 1859, 1876). The agricultural sector continues to be one of the effective sectors for Türkiye's economic development in terms of its contribution to national income, foreign trade volume, employment, and its interaction with other sectors (Doğan et al., 2015; Ersoy & Özsoy, 2017; Gezer & Gezer, 2022).

The ranking of the agriculture, forestry, and fishing sectors according to their share in Türkiye's gross national product has increased from sixth to fourth among 17 sectors in recent years. The agriculture sector was the sixth largest sector in 2016,2017, and 2018, fifth in 2019, and fourth in 2020-2021 and 2022. According to the 7-year averages of 2016-2022, the agriculture, forestry, and fishing sector (in short, the agricultural sector) rank fifth[3], with a share of 6.2% in GNP (Turkish Statistical Institute [TSI], 2023).

The sector accounts of the Central Bank of the Republic of Türkiye (CBRT) reported aggregated financial data of an average of 824 thousand companies in the 2016-2022 period. During this period, in the real sector, the agricultural sector had a share of 1.39% in terms of the number of companies (11.4 thousand) and 0.61% and 0.52% in terms of the size of assets and sales, respectively. According to 2022 data, the share of the agricultural sector in the CBRT real sector stays at a similar level (CBRT, 2024)

The share of the agricultural sector in the stock market is also low in terms of market value and number of companies. As of the study date (03.05.2024), the total market value of four companies traded in the agricultural sector (48.1 billion TRY) represents 0.3% of the market value of the Borsa İstanbul (BIST) ALL index (14,270 billion TRY) (BIST, 2024). According to the number of companies in the sector, as reported by the Data Analysis Platform (DAP), the average number of companies listed on Borsa İstanbul during the 2016–2022 period is 455, while the number of companies in the agricultural sector is 5, with a share of 1.1%. The average number of companies in the agricultural sector in 2022 is 3 as well (DAP, 2024).

Structural problems of the agricultural sector, such as the long and costly production period and seasonal, intermittent income dependent on natural conditions, reduce the capital turnover rate of the sector and increase the need for short-term liabilities. Although it is one of the sectors supported by various government subsidies (Gezer & Gezer, 2022; Sağdıç, & Çakmak, 2021; Tengiz et al., 2022; Tiryaki & Kandil Göker, 2020), the financing problem of the agricultural sector persists. Access to finance is an important obstacle to the development of the agricultural sector and the continuity of agricultural production (Ersoy & Özsoy, 2017:2; Gezer & Gezer (2022). One of the methods that can determine the existence, extent, and permanence of the financing problem is financial analysis. Financial performance measurement and analysis is the key to an agricultural enterprise reviewing its own situation, comparing it with other enterprises and taking some precautions according to the results, in other words, being able to get itself in order (Acar, 2003: 23-24).

[3] According to 2016-2022 averages, the top four sectors are; 1) Manufacturing, 2) Wholesale and Retail Trade, 3) Transportation and Storage 4) Construction sectors.

Despite its contribution to Turkey's value added, the share of agriculture in the real sector and capital market is quite low. This study aims to analyse the financial situation of the agricultural sector at both the sectoral and firm level and to evaluate the possible financial reasons behind the sector's low share in the real and capital markets. For this purpose, a financial analysis was conducted at the sectoral level by using the average sector ratios from the CBRT and DAP for the 2016–2022 period. In addition, a financial analysis for the 2016–2022 period was conducted on a company selected from two companies suitable for analysis, classified in the agriculture, forestry, and fisheries sectors of Borsa İstanbul.

In this study, while identifying sectoral financial difficulties, part of the research focuses on a single firm to examine whether it is possible to differentiate from the sector. The sectoral analysis provides generalizability to the findings, whereas the selected firm analysis prevents firm-specific factors from being lost within the aggregated data. By applying the analysis to both sectoral averages and a representative firm, it is possible to see whether it is possible to overcome some sectoral challenges. Nevertheless, a fundamental limitation of this study lies in the data being restricted to the Turkish agricultural sector, which has a relatively low number of publicly listed companies.

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2. Literature Review

Studies included in the literature review that measure the financial performance of the Turkish agriculture, forestry, and fisheries sector, either on a sectoral or company-specific basis, have been incorporated. In accordance with this criterion, two sector-level financial analysis studies using CBRT data (Şahin, 2020; Tiryaki & Kandil Göker, 2020) and a study suggesting the use of CBRT agricultural sector data as a benchmark in financial analysis (Acar, 2003) have been accessed and reviewed. Papers that measure the performance of listed BIST companies using multi-criteria decision-making techniques (Can Öziç et al., 2017; Kara & Özbek, 2020) and the DuPont method (Büyükarıkan & Eryılmaz, 2020) are also included in the literature review.

Two studies measuring financial failure with TSI firm-level data (Yapa & Coşkun, 2024) and evaluating the performance of regional businesses based on surveys (Ağızan & Bayramoğlu, 2023; Tengiz et al., 2022) are also included in this section. A few studies on the financing problems of the agricultural sector (Ersoy & Özsoy, 2017) and the impact of agricultural

incentives on production (Sağdıç & Çakmak, 2021; Gezer & Gezer, 2022) are among the studies examined. In addition, the study by Yılmaz and Aslan (2020), which includes some findings on the impact of GDP on the debt structure of the agricultural sector, as one of the non-manufacturing sectors, is also summarized in this section.

The results of the analysis conducted by Tiryaki and Kandil Göker (2020) with CBRT 2009-2019 data indicate that, while the financial risk in the agricultural sector is at a reasonable level, the high level of short-term and financial debt burdens cause liquidity problems. In the study, salam contracts are also presented as an alternative solution to the financing problems of the sector, which has a low capital turnover rate and high short-term cash needs due to factors arising from the nature of the sector, such as dependence on natural conditions, seasonal and intermittent product availability. In Şahin's (2020) study, according to the CBRT data for the 2014-2016 period, the agricultural sector invests in assets with insufficient return to cover the cost of borrowings, or even incurs losses. Relatively high operating and financing expenses weaken profitability. The high financing costs are due to the high usage of bank loans as well as the business risk of the agricultural sector that may be charged by financial institutions in loan prices. Explaining the use of financial analysis in assessing the performance of agricultural enterprises, Acar (2003) uses CBRT company accounts of the agriculture sector as a benchmark.

Can Öziç et al. (2017) analysed the financial performance of three companies (IZTAR, TACTR, YAPRK) in the BIST agriculture and livestock sector in 2015-2016 using financial ratios and the Gray Relational Analysis method. The findings conclude that YAPRK has the strongest financial ratios with high liquidity, profitability, activity ratios and, a low debt ratio. Kara and Özbek (2020) analysed the 2015-2018 financial performance of the same three companies (IZTAR, TACTR, YAPRK) in the BIST with the TOPSIS method and, ranked YAPRAK first in terms of performance levels in all years analyzed. As a result of DuPont analysis and statistical tests applied to the 2012 and 2013 period data of four companies listed in the BIST agricultural sector, Büyükarıkan & Eryılmaz (2020) state that low sales profitability is the primary source of a weak return on investment.

Using company-level TSI data of agriculture for the 2009-2019 period, Yapa and Coşkun (2024) create financial failure prediction models that are based on ratios suitable for the sector characteristics. Financial failure is defined in five ways, and among these definitions, the one based on profitability and net working capital (negative net working capital and net loss in the last two years) has the highest predictive power. Tengiz et al. (2022) examine the data obtained through the survey of the enterprises engaged in crop production in Yozgat province for the 2020-2021 production period and conclude that the asset distribution is not rational favouring land assets and that this situation causes working capital insufficiency and therefore negative effects on liquidity and profitability. Agizan and Bayramoğlu (2023) applied ratio analysis to the data obtained through a survey from 212 organic agriculture marketing enterprises operating in four cities (Konya, Ankara, İzmir and İstanbul). The study, in which the companies were analyzed by dividing them into eight groups, suggests that the liquidity and financial structures of organic agriculture marketing companies are strong, but their profitability and asset turnover rate are weak.

One of the agricultural financing problems that Ersoy and Özsoy (2017) explain in four groups is the high interest rates and costs of financing sources. As a solution to this problem, they propose the provision of state-supported funding, legal regulations and the

concentration of incentives in a single centre. Sağdıç and Çakmak (2021) show that there was a long-term relationship between the total agricultural incentive payments (central budget share) and the agricultural production level (national income share) in Türkiye in the 2006–2019 period. Gezer and Gezer (2022) examine the impact of incentives and loans given to the agriculture industry on agricultural production with the non-linear ARDL method for the period 2006-2021 in Türkiye. According to the findings, agricultural support and loans increase agricultural production in the short term. While the incremental effect of incentives on production is not permanent, the permanent effect of loans reflects the financial weight and importance of loans in agricultural production. Yılmaz and Aslan (2020) investigate the effect of basic macroeconomic variables on the leverage ratios (gathered from CBRT company accounts data) and of nine non-manufacturing sectors in the 2005-2016 period. One of the findings is that as GDP increases in the agricultural sector, as in some other sectors, more foreign resources are used in asset financing.

3. Data Set, Financial Analysis and Findings

At the date of the current study, sector averages provided by DAP present the year-end data for 2016-2022. Although the CBRT company accounts include longer periods starting from 2009, the analysis period is determined as a seven-year period between 2016-2022 to be compatible with DAP periods. The sectoral financial ratios are generally used as given in the CBRT and DAP ratios datasets. Each CBRT and DAP ratio may include different number of companies. Some ratios that are needed but not reported in these datasets are calculated by transforming existing rates or by using the 2016-2022 period average of the financial statement accounts in the CBRT database.

Among the four companies listed in the agricultural sector in Borsa Istanbul, two companies traded on the stock exchange before 2022 and, both companies operate in the subsector of "agriculture, livestock, hunting and related service activities" (Public Disclosure Platform [PDP], 2024). Among these two companies, Yaprak Süt ve Besi Çiftlikleri Sanayi ve Ticaret A.Ş. (YAPRK), which has an earlier establishment and trading date and a higher market value, is selected as a representative of the agricultural sector and subjected to financial analysis.

The ratios and their calculations used in financial ratio analysis are presented in Table 1. The findings of the ratio analysis are provided in Tables 2, 3, and 4.

Table 1: Financial Ratios and Formulas

	Ratio	Formula
	Liquidity Ratios	
1	Current Ratio	Current Assets / Current Liabilities
2	Quick (Acid-Test) Ratio	(Current Assets- Inventories) / Current liabilities
3	Cash Ratio	(Cash and cash equivalents / Current liabilities)
4	Inventories Ratio (%)	(Inventories / Assets) * 100
	Solvency Ratios	
5	Debt Ratio (%)	(Total Liabilities / Assets) * 100
6	Long-Term Liabilities Ratio (%)	(Non-Current Liabilities / Assets) * 100
7	Short Term Financial Debt Ratio (%)	(Short Term Borrowings / Assets) * 100
8	Financial Debt Ratio (%)	(Borrowings / Assets) * 100
9	Interest Coverage Ratio	(EBIT / Financing Expenses)
10	Current Asset Ratio (%)	(Current Assets / Total Assets) * 100
11	Tangible Fixed Assets Ratio (%)	(Tangible Fixed Assets / Total Assets) * 100
	Activity Ratios	
12	Acc. Rec. Coll. Period (ACP) (Days)	365 / Accounts Receivables Turnover
13	Average Age of Inventory (AAI) (Days)	365 / Inventory Turnover
14	Average Payment Period (APP) (Days)	365 / Accounts Payables Turnover
15	Operating Cycle (OC) (Days)	ACP + AAI
16	Cash Conversion Cycle (CCC) (Days)	ACP + AAI- APP
17	CCC Financing Needs	CCC * (COGS / 365)
18	Assets Turnover (Times)	Revenue / Average Assets
	Profitability Ratios	
19	Gross Profit Margin (%)	(Gross Profit / Revenue)*100
20	Operating Profit Margin (%)	(Operating Profit / Revenue)*100
21	Net Profit Margin (%)	(Net Profit / Revenue)*100
22	Operating Expenses Ratio (%)	((GAE+ME+R&DE) / Revenue)*100
23	Financing Expense Ratio (%)	(Financing Expenses / Revenue)*100
24	Return on Assets (ROA) (%)	(Net Profit / Average Assets)*100
25	Return on Equity (ROE) (%)	(Net Profit / Average Equity)*100
	Cash Flow Ratios	
26	Quality of Income	Operating Cash Flow / Net Profit
27	Cash Flow Liquidity	Operating Cash Flow / Current Liabilities
	Growth Ratios	
28	Change in Assets (%)	$((Asset_t - Asset_{t-1}) / Asset_{t-1})*100$
29	Change in Equity (%)	$((Equity - Equity_{t-1}) / Equity_{t-1})*100$
30	Change in Revenue (%)	$((Revenue_t - Revune_{t-1}) / Revune_{t-1})*100$
31	Chance in Net Profit (%)	$((Net\ Profit_t - Net\ Profit_{t-1}) / Net\ Profit_{t-1})*100$
32	Change in Firm Number (FN) (%)	$((FN_t - FN_{t-1}) / FN_{t-1})*100$

Sources: CBRT, DAP, PDP

Notes: EBIT: Earnings before interest and taxes. Acc. Rec. Coll. Period: Accounts Receivable Collection Period. GAE: General administration expense. ME: Marketing expense. R&DE: Research and development expense.

Table 2: 2016-2022 Averages of Sectoral Financial Ratios

	Ratio (2016-2022 Averages)	BIST_AGR	BIST_All	CBRT_AGR	CBRT_All
	Liquidity Ratios				
1	Current Ratio	0.82	1.70	1.69	1.59
2	Quick (Acid-Test) Ratio	0.35	1.08	0.65	1.04
3	Cash Ratio	0.10	0.37	0.15	0.25
4	Inventories Ratio (%)	8.4	14.3	32.6	19.5
	Solvency Ratios				
5	Debt Ratio (%)	48.4	48.5	65.9	70.3
6	Long-Term Liabilities Ratio (%)	12.5	14.0	24.3	31.0
7	Short Term Financial Debt Ratio (%)			13.6	9.7
8	Financial Debt Ratio (%)			23.6	27.5
9	Interest Coverage Ratio	-0.7	1.4	2.6	4.0
10	Current Asset Ratio (%)	26.9	51.1	60.0	59.6
11	Tangible Fixed Assets Ratio (%)	45.7	23.1	31.4	21.9
	Activity Ratios				
12	Acc. Rec. Coll. Period (ACP) (Days)	42.8	54.7	43.5	55.3
13	Average Age of Inventory (AAI) (Days)	49.7	59.0	106.5	45.5
14	Average Payment Period (APP) (Days)			115.4	87.6
15	Operating Cycle (OC) (Days)	92.5	113.7	149.9	100.8
16	Cash Conversion Cycle (CCC) (Days)			34.5	13.2
17	CCC Financing Needs			4.7 M	351 M
18	Assets Turnover (Times)	0.44	0.84	0.76	0.90
	Profitability Ratios				
19	Gross Profit Margin (%)	13.4	27.8	21.0	3.3
20	Operating Profit Margin (%)	-8.3	13.8	7.4	7.6
21	Net Profit Margin (%)	-15.1	10.9	2.8	3.3
22	Operating Expenses Ratio (%)	13.2	13.8	13.8	14.6
23	Financing Expense Ratio (%)	12.2	9.8	4.3	3.0
24	Return on Assets (ROA) (%)	3.2	8.8	1.8	2.6
25	Return on Equity (ROE) (%)	4.2	17.6	5.3	8.6
	Cash Flow Ratios				
26	Quality of Income				
27	Cash Flow Liquidity				
	Growth Ratios				
28	Change in Assets (%)	23	37	30	32
29	Change in Equity (%)	30	37	28	31
30	Change in Revenue (%)	17	39	38	43
31	Chance in Net Profit (%)	-121	37	126	124
32	Change in Firm Number (FN) (%)			7.2	6.3

Sources: CBRT, DAP, PDP

Notes: Acc. Rec. Coll. Period: Accounts Receivable Collection Period. M: Million Turkish Lira (TRY). k: thousand TRY.

Table 3: 2016-2022 Averages of Financial Ratios for YAPRK and Agriculture Sector

	Ratio (2016-2022 Averages)	BIST_AGR	BIST_All	CBRT_AGR	CBRT_All
	Liquidity Ratios				
1	Current Ratio	0.82	1.70	1.69	1.59
2	Quick (Acid-Test) Ratio	0.35	1.08	0.65	1.04
3	Cash Ratio	0.10	0.37	0.15	0.25
4	Inventories Ratio (%)	8.4	14.3	32.6	19.5
	Solvency Ratios				
5	Debt Ratio (%)	48.4	48.5	65.9	70.3
6	Long-Term Liabilities Ratio (%)	12.5	14.0	24.3	31.0
7	Short Term Financial Debt Ratio (%)			13.6	9.7
8	Financial Debt Ratio (%)			23.6	27.5
9	Interest Coverage Ratio	-0.7	1.4	2.6	4.0
10	Current Asset Ratio (%)	26.9	51.1	60.0	59.6
11	Tangible Fixed Assets Ratio (%)	45.7	23.1	31.4	21.9
	Activity Ratios				
12	Acc. Rec. Coll. Period (ACP) (Days)	42.8	54.7	43.5	55.3
13	Average Age of Inventory (AAI) (Days)	49.7	59.0	106.5	45.5
14	Average Payment Period (APP) (Days)			115.4	87.6
15	Operating Cycle (OC) (Days)	92.5	113.7	149.9	100.8
16	Cash Conversion Cycle (CCC) (Days)			34.5	13.2
17	CCC Financing Needs			4.7 M	351 M
18	Assets Turnover (Times)	0.44	0.84	0.76	0.90
	Profitability Ratios				
19	Gross Profit Margin (%)	13.4	27.8	21.0	3.3
20	Operating Profit Margin (%)	-8.3	13.8	7.4	7.6
21	Net Profit Margin (%)	-15.1	10.9	2.8	3.3
22	Operating Expenses Ratio (%)	13.2	13.8	13.8	14.6
23	Financing Expense Ratio (%)	12.2	9.8	4.3	3.0
24	Return on Assets (ROA) (%)	3.2	8.8	1.8	2.6
25	Return on Equity (ROE) (%)	4.2	17.6	5.3	8.6
	Cash Flow Ratios				
26	Quality of Income				
27	Cash Flow Liquidity				
	Growth Ratios				
28	Change in Assets (%)	23	37	30	32
29	Change in Equity (%)	30	37	28	31
30	Change in Revenue (%)	17	39	38	43
31	Chance in Net Profit (%)	-121	37	126	124
32	Change in Firm Number (FN) (%)			7.2	6.3

Sources: CBRT, DAP, PDP

Notes: Acc. Rec. Coll. Period: Accounts Receivable Collection Period. M: Million Turkish Lira (TRY). k: thousand TRY.

Table 4: Financial Ratios of YAPRK during 2016-2022

	Ratio (2016-2022 Averages)	2016	2018	2020	2022	16-22 Avr.
	Liquidity Ratios					
1	Current Ratio	1.23	1.08	0.96	1.37	**1.09**
2	Quick (Acid-Test) Ratio	0.67	0.47	0.53	0.94	**0.60**
3	Cash Ratio	0.20	0.07	0.23	0.45	**0.21**
4	Inventories Ratio (%)	12.3	15.0	14.3	12.3	**13.4**
	Solvency Ratios					
5	Debt Ratio (%)	37.6	37.4	47.4	42.1	**41.3**
6	Long-Term Liabilities Ratio (%)	22.0	24.6	33.2	28.5	**27.6**
7	Short Term Financial Debt Ratio (%)	5.4	5.9	15.8	17.9	**11.2**
8	Financial Debt Ratio (%)	15.7	11.0	23.0	22.1	**17.6**
9	Interest Coverage Ratio	7.8	12.1	6.6	48.0	**14.5**
10	Current Asset Ratio (%)	27.0	26.6	31.8	39.2	**29.8**
11	Tangible Fixed Assets Ratio (%)	72.9	73.2	67.1	60.7	**69.7**
	Activity Ratios					
12	Acc. Rec. Coll. Period (ACP) (Days)	31.1	29.9	28.9	32.8	**30.3**
13	Average Age of Inventory (AAI) (Days)	121.0	100.5	90.1	81.9	**95.9**
14	Average Payment Period (APP) (Days)	136.4	122.2	108.4	63.1	**108.3**
15	Operating Cycle (OC) (Days)	152.1	130.4	118.9	114.6	**126.2**
16	Cash Conversion Cycle (CCC) (Days)	15.7	8.2	10.6	51.5	**18.0**
17	CCC Financing Needs	493 k	441 k	870 k	10.4 M	**2.3 M**
18	Assets Turnover (Times)	0.42	0.62	0.67	0.76	**0.63**
	Profitability Ratios					
19	Gross Profit Margin (%)	37.4	32.7	32.4	91.9	**42.2**
20	Operating Profit Margin (%)	29.1	29.8	28.8	88.0	**37.2**
21	Net Profit Margin (%)	9.0	10.9	14.5	67.4	**20.0**
22	Operating Expenses Ratio (%)	14.4	10.2	8.8	6.3	**10.0**
23	Financing Expense Ratio (%)	1.6	1.3	2.6	1.8	**1.7**
24	Return on Assets (ROA) (%)	3.8	6.7	9.8	51.2	**13.8**
25	Return on Equity (ROE) (%)	5.9	10.8	17.7	89.3	**24.1**
	Cash Flow Ratios					
26	Quality of Income	-1.02	-0.61	-0.35	-0.23	**-0.53**
27	Cash Flow Liquidity	-0.16	-0.16	-0.09	-0.28	**-0.16**
	Growth Ratios					
28	Change in Assets (%)	16	9	31	150	**37**
29	Change in Equity (%)	6	10	19	160	**35**
30	Change in Revenue (%)	17	27	26	108	**39**
31	Chance in Net Profit (%)	-35	51	184	512	**120**
32	Change in Firm Number (FN) (%)					

Sources: CBRT, DAP, PDP

Notes: The data for the years 2017, 2019, and 2021 have been omitted from Table 4 to fit within the page. Avr.: Average. Acc. Rec. Coll. Period: Accounts Receivable Collection Period. M: Million Turkish Lira (TRY). k: thousand TRY.

3.1. Financial Situation of Agricultural Sector According to CBRT Real Sector

The sectoral comparative financial analysis is first conducted on a more comprehensive sample of both publicly traded and privately held firms, as referred to by the CBRT. In this section, the aggregated data of an average of 11.4 thousand agricultural companies included in the 2016-2022 period of the CBRT company accounts are compared with the aggregated data of the 824 thousand companies of the CBRT data, covering all sectors and referred to as the real sector. Ratios reported under the name of all companies in the CBRT sector accounts (CBRT_All) will be referred to as CBRT all, CBRT general or real sector. For the agriculture, forestry, and fisheries sector (CBRT_AGR), the expression CBRT agriculture, agricultural sector or just sector will be used.

According to the seven-year averages between 2016-2022, the liquidity power of the agriculture sector is lower than the real sector in general. Although the current ratio of the agricultural sector is above the real sector, the stock dependence of the sector is high due to relatively high stock investment. In addition, as seen in leverage ratios, higher usage of short-term borrowing reduces the liquidity (acid-test) ratio below the real sector and the generally accepted standard ratio of 1. The sector also operates with a cash ratio that is 10 points lower than the real sector in general.

Among the leverage ratios, the total borrowing rate is approximately 66%, which is four points lower than the real sector borrowing rate of 70%. Although the total debt usage of the agricultural sector is relatively lower, the short-term borrowing rate is four points above the real sector rate and therefore long-term funding sources are behind those of the real sector. The financial debt structure is also similar to the total debt structure. While there is approximately 28% financial debt usage in the real sector, the financial debt ratio of this sector is 24%, but the maturity distribution is again in favour of short-term financial debt.

According to ratios of the maturity structure of assets, classified under financial ratios (13th and 14th ratios), the agricultural sector and the real sector have very similar current-fixed asset ratios, yet the investment in tangible fixed assets is higher in the real sector. Although stronger in terms of covering its fixed assets with equity, the lower long-term funding source diminishes the ability of long-term funding sources to cover fixed assets. On the other hand, financing the same amount of current assets with more short-term debt adversely affects liquidity ratios.

The sector's interest coverage ratio is relatively weaker than CBRT_All. Although the cost of short-term borrowings is lower due to the liquidity premium, the rising trend of the interest rates during the analysis period exposes the companies to a higher interest rate in the renewal of the matured loan. This situation caused the financing expense of the agricultural sector operating with a greater short-term debt ratio, to be relatively high (4.3%). Since EBIT margins are very close, the low interest coverage ratio is better explained by leverage ratios.

The sector which collects its receivables approximately 12 days sooner than the real sector, is observed to have a considerably low inventory turnover rate, with an inventory holding period of about 107 days This situation is also reflected in liquidity ratios due to high inventory investment. While the operating cycle period of the real sector is 101 days, the OC of the agriculture sector is 150 days. The accounts payable period is also higher than that of the real sector, but it is not sufficient to cover the operating cycle. Therefore, the agriculture

sector has a greater cash conversion cycle and short-term financing need. The asset turnover rate is below 1, as in the real sector, but it lags behind the real sector. This is thought to be influenced by excess investment in tangible fixed assets and inventories. The working capital fund requirement of the sector to finance the CCC is 4,714 million TRY, and it has liquid assets large enough to meet this amount (4,739 million TRY).

Although the agricultural sector's gross profitability is 6-7 times higher than that of the real sector's, the operating profit margin is nearly the same as the real sector due to high operating expenses incurred. The elevated financing expenses resulting from high short-term borrowing led to a net profit of 2.8%, falling below the net profitability of the real sector (3.3%). The combination of relatively lower asset turnover and net profit results in low Return on Assets (ROA) and Return on Equity (ROE). While low financial leverage also plays a role in the reduced ROE, the primary determinant is ROA.

The growth (change) rates observed over the seven years provide insight into the direction of change within the agricultural sector and its situation relative to the real sector. Despite assets growing by 30% and revenue by 38%, the sector's asset and sales growth is behind the real sector, but it grows faster in terms of net profitability and the number of firms. When the number of firms and asset development are evaluated together, it is understood that there are relatively small new firm entries into the sector. Over time, the increase in assets is financed more by debt, leading to an increased financial leverage. The rapid increase in sales relative to assets indicates progress in asset turnover, which has a positive impact on net profitability growth.

The main financial weaknesses of the CBRT agricultural sector (CBRT_AGR) compared to the real sector (CBRT all sector) include a longer operating and cash conversion cycle due to high inventory investments, high usage of short-term liabilities for working capital needs and, low asset turnover rate. Short-term borrowing, majority of which is financial debt, poses risk-increasing and profitability-reducing effects.

These findings are consistent with the studies conducted by Şahin (2020), analysing the agricultural sector's financial statements for the period 2014-2016, and Tiryaki and Kandil Göker (2020), evaluating the period 2009-2019. Şahin (2020) found that the sector's bank loan usage, financing expenses and operating expenses are high, and net profit and return on assets are negative. Tiryaki and Kandil Göker (2020) evaluated the sector's short-term debt burden, financial debt and liquidity risk as high. Additionally, with firm-level data, Yapa and Coşkun (2024) examine the importance of net working capital and profit in predicting financial failure in the sector, Tengiz et al. (2022) draw attention to the negative effects of working capital insufficiency on liquidity and profitability of crop production enterprises in Yozgat province.

3.2. Financial Situation of Agricultural Sector According to BIST Averages

The second sector comparison is made within the publicly traded companies (BIST). In this section, the aggregated rates of an average of 455 companies listed on Borsa Istanbul in the 2016-2022 period are compared with the aggregated rates of an average of 5 (ranging from 3 to 5) agricultural sector companies. The expression BIST all or BIST general will be used for the averages of all BIST companies (BIST_All), and the BIST agriculture, forestry, and fisheries sector (BIST_AGR) will be called BIST agriculture, agricultural sector or just the sector.

While the debt ratio of the BIST agricultural sector is the same as the average of all companies traded on BIST, the short-term debt ratio is 2 points higher. Although the resource structure of the agricultural sector is similar to the BIST all, the fixed asset density in the asset structure increases the risk of short and long-term solvency of the agricultural sector and unbalances the financing equality.

Across BIST, 49% of fixed asset investment is covered by equity capital (52%) and long-term foreign resources can be transferred to current asset financing. This situation reflects positively on the short-term debt solvency ratios of companies across BIST. On the other hand, the agricultural sector's fixed asset investment accounts for 73%, with the tangible fixed asset ratio being approximately twice that of the BIST all. The equity level, which is the same as that of BIST all, proves insufficient to cover fixed assets, and even the sum of equity and long-term debts falls short in covering fixed assets. Consequently, a portion of short-term debts is to be financed by fixed assets. Thus, this financial structure has weakened the liquidity power of the agricultural sector. Since the financial debt ratio is not provided in the DAP data, the sector's interest coverage ratio is negative.

Owing to the shorter collection period for receivables and inventory holding period compared to BIST all, the agricultural sector operates with an approximately 20-day shorter operating cycle. The asset turnover ratio is approximately half of that of BIST all, which is attributed to the sector's non-current asset-intensive asset structure. In the profitability ratio group, the most significant difference compared to BIST all is the low gross profit, so much so that it operates with a -8.3% operating loss, unable to cover operating expenses. When the financial expense ratio (as a percentage of revenues) of 12.2%, which is 2.3 percentage points higher than BIST all, is added, the net loss reaches approximately 15%. The growth rates of assets, sales, and net profit are slower than those of BIST all. Over the past seven years, there has been a change in favour of asset turnover rate and equity across BIST all. However, in the agricultural sector, while equity capital has strengthened over the seven-year period, asset turnover and profitability have weakened.

The fundamental financial issues of publicly traded agricultural sector companies include the utilization of short-term debt in financing fixed asset investments, inadequate gross profitability, high financial expenses, and ineffective asset utilization. Analysis of the change rates reveals a downturn tendency for liabilities over the analysis period, but asset turnover and profitability also show a declining trend.

3.3. Comparison of the BIST and CBRT Agriculture Sector Averages

Here, a third comparison is made between the sample of publicly traded agricultural sector companies (BIST_AGR) and the more comprehensive sample consisting of both publicly traded and privately held firms, which is the CBRT agricultural sector data (CBRT_AGR). This comparison can also be thought of as a comparison between relatively large-scale or more corporate companies (BIST) and relatively small-scale firms (CBRT).

While the fixed asset investment of BIST_AGR is 73%, the fixed asset ratio of CBRT_AGR is 40%. Although BIST_AGR firms, with their higher fixed and tangible fixed assets, operate with a stronger equity ratio compared to CBRT_AGR firms, their equity and long-term fund totals are insufficient to cover their fixed assets, leading them to transfer some of their short-term funds to fixed asset financing. This situation weakens the short-term debt repayment capacity and profitability of the BIST agriculture sector. Expressing the financing structure from the

CBRT window, although the equity ratio of the CBRT_AGR is lower, the sum of equity and long-term funds is capable of financing fixed assets and, even can invest some of its long-term funds into its operating activities. Thus CBRT_AGR can operate with stronger liquidity.

While the high fixed asset investment of BIST agricultural firms reduces the asset turnover rate, better inventory management compared to the CBRT_AGR lowers operating deficit. Since the accounts payable data is not available via DAP, CCC could not be compared. The operating expenses of the sector in the CBRT and BIST are almost equal, but due to the cost of sales, which is significantly higher in publicly traded companies, BIST bears agricultural operating losses. Since the financing expenses of BIST_AGR are approximately three times those of the CBRT_AGR, the net loss grows.

Examining the average annual change rates of the CBRT and BIST agricultural sectors in some accounts, the growth of the CBRT_AGR is faster in most accounts. While assets grow in the CBRT_AGR, the faster growth in debt, revenue, and net profitability positively affects the asset turnover and profitability and increases borrowing. While equity strengthens in BIST_AGR, asset turnover decreases and net profitability decreases due to declining sales.

Finally, small-scale agricultural enterprises (CBRT_AGR) resort to short-term borrowing, mostly in the form of financial debts, to finance cash deficits arising from the longer period required to liquidate their inventory. Large-scale agricultural companies (BIST_AGR) utilize short-term sources to finance a portion of their fixed assets.

3.4. Financial Analysis of the Selected Agricultural Company

This section firstly compares the 2016-2022 period averages of the selected BIST_AGR company with sector norms. Then, in the second subheading, the changes in the financial structure of the company over the 7-year period are interpreted.

3.4.1. Comparison of the Selected Company with the Industry (BIST_AGR) Norms

The 2016-2022 averages of the selected publicly traded agricultural company (YAPRK) are compared with the BIST_AGR that consists of companies of similar size and corporate structure, though the number of firms is lower. After a detailed comparison with the BIST_AGR, it is observed that the company is stronger than the CBRT_AGR in terms of all available ratios except the current ratio and acid-test ratio.

The company is stronger than BIST_AGR in every ratio group except cash flow ratios and, inventory management and thus operating cycle. While sector averages for cash flow ratios are not reached, cash flow power can be interpreted as weak compared to generally accepted standards, as it is unable to generate cash from its activities. As explained in the next section (heading 3.4.2), the main reason why the company cannot generate cash flow from its operations is the reconciliation of live asset valuation differences, which do not provide cash inflow, with profit.

With a total borrowing ratio of 41.3%, the company is less indebted than the sector and has a higher chance of reaching long-term funds. The company's total financial borrowing is approximately 18%, and its interest coverage ratio of 14.5 times is high compared to both generally accepted rates and industry norms. Its financing structure is balanced, with sufficient equity and long-term funds to cover the fixed asset investment that is close but three points lower than the sector. The tangible asset investment rate is above that of the sector. Although the current and liquidity ratio is above the sector, the quick ratio is below 1

due to high inventory investment. The ratio of covering short-term debts with cash is sufficient at 21%.

The company is more successful in working capital management than CBRT_AGR in terms of operating cycle (OC) and cash conversion cycle (CCC), but less successful than BIST_AGR when it comes to OC alone[4]. Despite a shorter accounts receivable collection period (13-14 days shorter), the longer inventory holding period results in the company having a 33-day longer operating cycle. Although the asset turnover rate is below one, it is still higher than the sector's average and shows an increasing trend.

In terms of profitability, all profitability ratios are above the sector as a result of high control power over cost of sales, operating expenses, and financial expenses. A 20% net profitability turns into 13.8% asset profit with an asset turnover ratio of 0.63. With the effect of the 1.7 equity multiplier, which corresponds to 41% debt usage, the ROA of 13.8 results in 24% ROE.

Looking at the growth rates, the company grows faster than the sector in each item. Assets grow by 37% on average within 7 years, and with the faster growing in sales, the asset turnover rate improves positively. The share of debts in asset financing becomes more pronounced. Profit growth (120%) is well above the negative change in the sector.

The company-level analysis results are consistent with the findings of Can Öziç et al. (2017) and Kara and Özbek (2020). Evaluating three companies in the BIST agriculture sector with multi-criteria decision-making methods, Can Öziç et al. (2017) (for 2015-2016) and Kara and Özbek (2020) (for 2015-2018) determine the Yaprak Süt (YAPRK) as having the best financial performance.

3.4.2. Financial Situation of the Selected Company for the Period 2016-2022

In 2022, the year in which the company experienced the biggest change in the 7 years examined, the company experienced significant increases in assets, sales, equity, and especially net profitability, which are reflected in growth rates. In 2022, the company's assets increased by 2.5 times, with the growth rate being 3.06 times for current assets and 2.23 times for fixed assets. Until 2022, the investment in live assets increased by an average of 21% annually, while in 2022, it increased to approximately 3 times (2.84 times) the previous live asset amount.

The most significant source of fixed asset growth in 2022 is the valuation differences arising from the fair value[5] of live assets. While the number of large cattle (female) classified in fixed assets increased by 241 units from 2,192 units in 2021 to 2,433 units in 2022, the fair value increased from 34.1 million TRY to 97 million TRY. The total valuation differences for short-term and long-term live assets[6] in 2022 amounted to 65.7 million TRY (64.1 million TRY for live assets, 1.6 million TRY for agricultural inventory). The share of current assets, which

[4] Since accounts payable turnover rate is not reported in DAP platform, cash conversion cycle could not be interpreted.

[5] In the financial statements of the company, live (biological) assets, financial assets and financial liabilities are recorded according to their fair values, and other accounts are recorded as historical costs. As of the balance sheet date, cattle are valued at fair value by deducting marketplace costs. Corn, vetch, barley and wheat, which are agricultural live (biological) assets, are valued at cost. Inflation adjustment has not been applied according to Turkish Accounting Standard (TAS) 29 (YAPRK, 2024).

[6] 97 million TRY of long-term live assets consist entirely of live cattle (female). 76% of short-term live assets are live cattle (male), and 26% are related to agricultural activities (corn, peas, barley, wheat).

started to increase after 2019, is affected by the financial asset investment of 7.9 million TRY in 2022 and growths in inventories, receivables and other current assets.

The years 2018-2019 are years of weakened liquidity power, but it improved to 1.37 in 2022. While the debt and short-term debt ratios are at similar levels within the capital structure, the share of financial debt in total liabilities and short-term debt within financial debts increased from 2020 onwards. Despite the increase in financial debt, increasing profitability is effective in the interest coverage ratio, which started to increase in 2021, reaching 48 times in 2022.

While the average gross profit, operating profit and net profit until 2022 are 34%, 29% and 12% respectively, the profitability in 2022 is well above previous years and 5-6 times the profitability of 2021, 92%, 88% and 67.4% respectively. While the fair value differences of live assets are on average 19% of the revenue each year, it was 65% in 2022 and is approximately 6 times that of 2021. The fair value gain income of 65.7 million TRY from live assets is effective in the high profitability rates of 2021 and especially 2022. The gains from the appreciation of live assets and agricultural products manifest in all profitability ratios and interest coverage ratios.

The total of previous year's profits and especially the period profit of 68.1 million for 2022, which is 92.2 million TRY, constitutes 84% of its equity capital, and the company has a high power to finance its activities with its internal resources. Because in 2021, its paid-in capital was doubled by making a 100% capital increase with internal resources.

The asset increase in 2022 is funded mainly by equity capital supported by a period profit of 68.1 million, financial debt of 42,103 million TRY, of which 25.3 million is short-term, and deferred tax liability of 17.7 million. The deferred tax liability arises from the valuation differences of live assets.

On the other hand, gains from the appreciation of live assets and agricultural products are incomes that do not provide cash inflow, occurring in amounts above or very close to the company's period profits during the analysis period. Therefore, these valuation incomes, as the item with the highest negative value in the period profit reconciliation in the cash flow statement, constitute the main reason why Yaprak Süt cannot generate cash from its activities.

In 2022, 34.1 million TRY of 42.1 million TRY financial debts are bank loans, and bank loans are mainly short-term. Bank loans consist primarily of agricultural business loans and agricultural investment loans. Agricultural business and investment loans are used at low interest rates[7] to support agricultural production and the average effective interest rate of the loans is 5.01% in 2022. In addition, it is stated in the financial statement footnotes that capacity expansion investments are financed with subsidized loans from the government (YPRK, 2024).

While accounts receivable collection periods are at similar levels during the analysis period, the inventory turnover rates increase, and inventory holding periods experience a shortening of 39 days compared to the beginning of the analysis period. As of 2022, there are no overdue trade receivables, all of which are payable within 1 month, and the low rate of

[7] The agricultural investments and operating loans with low interest rates are given by T.C. Ziraat Bankası A.Ş. and Agricultural Credit Cooperatives under the 'Presidential Decree Regarding the Provision of Low-Interest Investment and Operating Loans for Agricultural Production' (YPRK, 2024).

doubtful trade receivables (0.52%) indicates high collection capability. The inventories weigh heavily on raw materials consisting of various animal feeds, medications, and artificial seeds. The fact that a significant portion of the raw materials is self-produced or acquired through a contractual farming model and, is insured[8] under commercial risk insurance protects the stocks against market and commercial risks.

Accounts payment period[9], on the other hand, shows a decreasing trend during the period under review, 136 days in 2019 and 63 days in 2022. Until 2020, the company operated with an average CCC of 10 days, but in recent years, the decrease in trade payment periods increased the CCC to 27 days in 2021 and led to a cash deficit of 52 days in 2022. The cash requirement for 2022 is 10.4 million TRY, while there is a balance of 24.4 million TRY in cash and equivalents, mostly kept in bank deposits of up to 1 month in the cash and equivalents account. Having cash assets equal to the cash requirement is a feature that mitigates liquidity risk.

Approximately 89% of Yaprak Süt's 2022 revenue consists of raw milk revenue, 6.4% incentive revenue (6.5 million TRY) and the remaining 4.6% is derived from beef cattle farming (livestock sales revenue) and other sales revenue. In 2022, the company benefited from a total of 6.5 million TRY in government incentives and aid across six different areas. Additionally, the Group's long-term live assets are insured with a guarantee of 52.5 million TRY within the scope of state-supported agricultural insurance.

Furthermore, the company benefits from customs duty exemption, reduced corporate tax incentives and research and development incentives within the scope of investment incentive certificates related to investment expenditures (YPRK, 2024).

4. Conclusion

The agriculture, forestry and fishing sector ranked fourth in Türkiye's 2022 gross national product with a share of approximately six and a half percent of GNP. Despite its contribution to the national income, the sector's share in the real sector and stock market is relatively low in terms of both the number and scale of companies. The structural problems of the agricultural sector that hinder asset turnover, combined with sector's difficulties in accessing financing sources, pose significant obstacles to the sector's development. Therefore, a comprehensive financial analysis to address financial issues, including financing problems, is crucial for the sector.

This study aimed to analyse the financial situation of the agricultural sector at both the sector and firm levels and to evaluate possible financial reasons for its low share in the real sector and capital markets. To achieve this goal, financial analyses were conducted using sectoral ratios from the Central Bank of the Republic of Türkiye and the Data Analysis Platform for the 2016-2022 period. Additionally, a financial analysis for a company selected among two companies suitable for analysis classified in the agriculture, forestry and fisheries sectors in Borsa Istanbul was carried out for the same period.

[8] The Group's inventories are insured under commercial risk insurance with a coverage of 329,326 EURO (YAPRK, 2024).

[9] The 65% of trade payables are in the form of notes payables, with 87% of the note payables having a maturity of 0-3 months, 1% having a maturity of 3-6 months, and 3% having a maturity of 6-12 months.

The main financial factor why the agricultural sector receives a low share within the real sector and the stock market, disproportionate to its value added, is that it resorts to short-term borrowing due to limited access to long-term financing opportunities, in order to meet the need for external resources arising from low asset turnover rate and low operating profitability. In other words, the low asset turnover, operational profitability and insufficient long-term fund sources lead to a reliance on short-term borrowing, thereby exacerbating the sector's financial risk.

Small-scale agricultural enterprises (CBRT_AGR) resort to short-term borrowing, mostly in the form of financial debts, to finance cash deficits arising from the long period required to liquidate their inventory. Large-scale agricultural companies (BIST_AGR) utilize short-term sources to finance a portion of their fixed assets. Consequently, the use of short-term liabilities by the agricultural sector to finance its assets increases the sector's financial risk, weakens its liquidity power, and diminishes profitability within the sector. The company analyzed representing the agricultural sector (YAPRK) can reduce its borrowing cost and increase its profitability by combining its strong financial structure with incentives and aid that support agricultural production. Consequently, despite the risks it carries, the agricultural sector offers growth and profit opportunities for companies operating with a strong financial structure.

The primary issue identified is the sector's reliance on short-term borrowing, driven by difficulties in accessing long-term financing sources. Based on these findings, it is suggested that agricultural policies and incentives should aim to address the resource and funding challenges required for asset financing in the sector. The government should implement policies that facilitate access to long-term financing, and subsidies should be more strategically directed toward reducing the sector’s dependence on short-term debt. Government policies could encourage consolidation or the formation of agricultural cooperatives, given that many small-scale agricultural businesses struggle with financial instability. Furthermore, regulations that encourage agricultural companies to list on the stock market would increase the sector’s representation in the capital markets, allowing firms to access more diverse sources of capital and improve their financial standing. In conclusion, it is essential for agricultural policies and support mechanisms to effectively address the sector's financing needs. These measures can strengthen the sector's financial structure, promote sustainable growth, contribute to food security, and lay a more robust foundation for the Turkish economy.

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Extended Summary

Financing Challenges of the Agriculture: A Comprehensive Sectoral and Company-Level Financial Analysis for Türkiye

The agricultural sector, encompassing soil cultivation, animal husbandry, forestry, and fishing, remains vital for many economies, despite a global decline in its share relative to industry and services (Sağdıç & Çakmak, 2021). In Türkiye, it continues to significantly contribute to national income, foreign trade, employment, and its interactions with other sectors (Doğan et al., 2015; Ersoy & Özsoy, 2017; Gezer & Gezer, 2022). The agricultural sector's rank in Türkiye's gross national product (GNP) has improved from sixth to fourth among 17 sectors in recent years. Based on 7-year averages (2016-2022), it ranks fifth with a 6.2% share in GNP (TSI, 2023). During this period, it accounted for 1.39% of companies in the real sector (CBRT, 2024) and 1.1% of companies listed on BIST (DAP). Challenges like long production cycles and reliance on natural conditions lead to low capital turnover and increased short-term liabilities. Despite governmental support (Gezer & Gezer, 2022; Sağdıç & Çakmak, 2021; Tengiz et al., 2022; Tiryaki & Kandil Göker, 2020), the sector still faces financing difficulties. Limited access to finance remains a major barrier to the sector's development and production continuity (Ersoy & Özsoy, 2017; Gezer & Gezer, 2022). Financial analysis is essential for addressing these issues (Acar, 2003). Despite its contribution to Türkiye's value added, the agricultural sector's share in the real sector and capital market remains low.

This study aims to analyze the sector's financial situation at both the sector and firm levels to explore reasons for its low market share. The research focuses on sectoral financial difficulties and examines a single firm to identify potential differentiation from the sector. While sectoral analysis ensures generalizability, firm-level analysis highlights specific factors. However, the study is limited by the small number of publicly listed agricultural companies in Türkiye. To achieve the analysis objective, financial analysis was conducted using average sector rates from CBRT and DAP for 2016-2022. Additionally, a financial analysis was performed on Yaprak Süt ve Besi Çiftlikleri Sanayi ve Ticaret A.Ş. (YAPRK), selected from two suitable companies in the agriculture sector listed on Borsa Istanbul.

The sectoral comparative financial analysis is first conducted on a comprehensive sample of both publicly traded and privately held firms, as referred to by the CBRT. Key financial weaknesses of the CBRT agricultural sector (CBRT_AGR) compared to the real sector (CBRT all sector) include a longer operating and cash conversion cycle due to high inventory investments, reliance on short-term liabilities, and low asset turnover. The heavy use of short-term borrowing, mainly financial debt, increases risk and reduces profitability. The second sectoral comparison is performed within publicly traded companies (BIST). Key financial issues for publicly traded agricultural companies (BIST_AGR) compared to all BIST companies (BIST_All) include reliance on short-term debt for fixed asset investments, inadequate gross profitability, high financial expenses, and poor asset utilization. The third comparison between CBRT_AGR and BIST_AGR contrasts relatively small-scale firms (CBRT) with larger, more corporate companies (BIST). Small-scale agricultural enterprises (CBRT_AGR) rely on short-term borrowing, primarily financial debts, to cover cash deficits from long inventory liquidation periods. Large-scale agricultural companies (BIST_AGR) use short-term sources to finance part of their fixed assets.

The firm-level financial analysis first compares the 2016-2022 averages of the selected BIST_AGR company (YAPRK) with sector norms and then interprets changes in the company's financial structure over this period. A detailed comparison with BIST_AGR indicates that YAPRK is stronger than CBRT_AGR in most ratios, except for the current and acid-test ratios. Compared to BIST_AGR, YAPRK performs better in most ratio groups except cash flow and inventory management which affects its operating cycle (OC). The company struggles with cash flow due to the non-cash reconciliation of live asset valuation differences with profit. Despite a shorter accounts receivable collection period, the longer inventory holding period results in a 33-day longer operating cycle. In 2022, the year in which the company experienced the biggest change during the 7 years examined, the company experiences significant increases in assets, sales, equity, and especially net profitability, which are reflected in growth rates. The most significant source of fixed asset growth in 2022 is the valuation differences arising from the fair value of live assets. These non-cash gains of value appreciation manifest in all profitability ratios and interest coverage. The years 2018-2019 were years of weakened liquidity power, but it improved to 1.37 in 2022. Inventory turnover rates improved, but accounts payment periods decreased, causing to higher cash deficit in last years. The cash requirement for 2022 was 10.4 million TRY, while 24.4 million TRY in cash and equivalents, mainly short-term deposits, mitigates liquidity risk. Asset growth in 2022 was funded mainly by equity, financial debt, and deferred tax liabilities. Although total debt and short-term debt ratios remained similar, financial debt share within total liabilities increased from 2020 onwards. In 2022, 34.1 million TRY of 42.1 million TRY in financial debts were bank loans, primarily short-term agricultural business and investment loans. Capacity expansion investments were financed with government-subsidized loans (YPRK, 2024). Despite increased financial debt, rising profitability improved the interest coverage ratio to 48 times in 2022.The company's equity capital was bolstered by retained earnings and a 100% capital increase with internal resources in 2021.

In conclusion, the agricultural sector's low share in the real sector and stock market, despite its added value, is mainly due to its reliance on short-term borrowing. Limited access to long-term financing, coupled with low asset turnover and operational profitability, increases the need for short-term external resources, heightening financial risk. Small-scale agricultural enterprises (CBRT) use short-term borrowing to cover cash deficits due to prolonged inventory liquidation. Large-scale agricultural companies (BIST) also rely on short-term financing for fixed assets. This dependence on short-term liabilities heightens financial risk, weakens liquidity, and reduces profitability within the sector. The analyzed agricultural company (YAPRK) can lower borrowing costs and boost profitability by leveraging its strong financial structure alongside agricultural incentives and aid. Despite inherent risks, the sector provides growth and profit opportunities for financially robust companies. These findings suggest that agricultural policies and incentives should address the sector's asset financing needs. Effective measures can enhance financial stability, promote sustainable growth, and strengthen the Turkish economy.