



Citation: G. Dono, R. Buttinelli, R. Cortignani (2022). Financial performance of connected Agribusiness activities in Italian agriculture. *Bio-based and Applied Economics* 11(2): 147-169. doi: 10.36253/bae-12211

Received: October 24, 2021

Accepted: June 6, 2022

Published: August 30, 2022

Data Availability Statement: All relevant data are within the paper and its Supporting Information files.

Competing Interests: The Author(s) declare(s) no conflict of interest.

Editor: Simone Cerroni, Fabio Gaetano Santeramo.

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Paper presented at the 10th AIEAA Conference

Financial performance of connected Agribusiness activities in Italian agriculture

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Abstract. The Rural Development Policy combines measures that favour the growth of the productive dimension of farms and their specialization, and measures aimed at supporting diversification paths, with the expansion of the productive functions performed. The evaluation of the economic and financial results of farms engaged in activities of the second type can help to calibrate the intervention between the two options. To this end, we have studied a constant sample of FADN farms in the period 2014-2016, identifying the units engaged in organic farming or other forms of quality production, or engaged in direct sales or processing of their products or, again, in the management of farmhouses. We discuss the condition of financial sustainability of the farms involved in those activities by evaluating their ability to generate cash flows to offset for the depreciation of the farm production system. We used the ratio Free Cash Flow on Equity on Depreciation to compare the results of farms engaged in those activities and farms which are limited to conventional agriculture. The analysis of this comparison and of some structural, technical, and economic characteristics of the farms involved in those types of activities resulted in various considerations on their characteristics and conditions of financial sustainability. Our attention has focused above all on the financial results of farms within the sectors of Italian agriculture in greater financial difficulty. The main objective was, in fact, to verify whether to diversify the farm's commitment with these activities has contributed to improving the financial sustainability in those agricultural sectors. Various considerations have arisen that can help fine-tune policies to support the types of diversification examined in this study.

Keywords: depreciation, Free Cash Flow on Equity, farm financial sustainability, agribusiness, organic farming, agricultural products processing, direct sale of agricultural products, quality agricultural products, farmhouses.

JEL Codes: Q13, Q14.

1. INTRODUCTION

Rural development policy was introduced as the second pillar of the CAP as part of the Agenda 2000 reform. Since then, with the aim of protecting rural heritage and creating new jobs, it has also been dedicated to supporting multifunctionality and the diversification of agricultural activities. The focus on diversification increased in the 2007-2013 period, with Axis 3

(quality of life in rural areas and diversification of the rural economy), as well as in the 2014-2020 programming period, extended up to 2023 and 2025 for many RDP projects, with priorities 2 (Farm Viability and Competitiveness) and 6 (Social inclusion and economic development).¹ In the latter period, the Italian Regions allocated 624 million euros, 3.2% of the entire RDP budget, for sub-measures 6.2 (Aid for start-up of non-agricultural activities in rural areas) and 6.4 (Investments to create and develop non-agricultural activities). The budget has been reduced in 2020 over the same period in 2018, linked to the COVID-19 crisis, especially for activities such as agritourism, educational farms. Yet, requests for support for operations related to diversification have been substantial, making funding insufficient in many cases (ISMEA, 2020).

In the period 2010-2019 the trend to diversify agricultural activities has notably grown and in 2019 about one fifth of the total value of agricultural production (€ 12.5 billion) came from secondary and support activities. Among others, the first-stage processing of agricultural products increased from 1.5 to 2.4 billion euros in the whole period, while direct selling of farm products grew by 4.3% in 2018-2019 (CREA PB, 2021; ISTAT, 2020). Farms engaged in related or secondary activities are concentrated in the Centre-North of Italy, which indicates an imbalance in the development of these activities but also a great potential for further expansion.

The scientific literature treats the intensification and propagation of these activities as the effect of a change in EU agricultural policies and in the choices of farmers seeking to stabilize and supplement their incomes. In this regard, an important line of analysis examines the factors influencing farmers' decision to diversify or undertake other activities besides conventional agriculture (Mishra et al., 2004; Rivaroli et al., 2017; Barbieri, 2010). A wide debate therefore concerns the influence of the farmer's age and education, the presence of female labour, the degree of production specialization and the operational size of the farm. McNamara and Weiss (2005) and Meraner et al. (2015) claim that larger farms diversify; in contrast, Mishra et al. (2004) claim that larger farms tend to specialize instead. For tourism-related activities, the influence of other factors is also considered, such as public support or the environmental characteristics of the area where the farms are located (De Rooij et al., 2014; Boncinelli et al., 2018; Biczkowski et al., 2021). Proximity to urban areas and

consumers is also shown to play a key role, especially in terms of direct selling (Zasada et al., 2015; Pölling and Mergenthaler, 2017). Conversely, it is also highlighted that farms far from urban areas can be pushed to diversify due to the lack of alternatives (Bartolini et al., 2014; Arias et al., 2015). At the same time, the repercussions of these activities on the development and social and environmental well-being of one's own territory are also considered (Arfini et al., 2019a, 2019b; Raimondi et al., 2018; Belletti et al. 2017; Heringa et al., 2012; Lange et al., 2013).

The analysis also concerns the production, economic and financial results obtained by the farms that are dedicated to these activities. Studies have investigated the impact of these activities on farm work (Chaplin et al., 2004; Raimondi et al., 2018), on technical efficiency (Lakner et al., 2018, Arru et al., 2019) and on income (Barbieri, 2013; Barnes et al., 2015; Salvioni and Fontanella, 2013). Khanal and Mishra (2014) study the financial situation of these farms and state that the income of agritourism families is higher than other agricultural households. According to Joo et al. (2013) agritourism has a positive effect on financial sustainability only on small farms. Salvioni et al. (2020) conclude that diversification also has a positive impact on the financial performance of Italian farms.

Below we focus our attention on the financial condition of the farms engaged in these activities. We study their cash flows which, according to Fazzari et al (1988) and Kaplan and Zingales (2000), measure the firm's dependence on internal funds, helping to explain its investment choices, the ability to obtain credit and, hence, to finance investments. Our analysis follows the approach of Dono et al. (2021) which frame financial sustainability in the ability to offset the depreciation of the production system with cash flows. Specifically, these authors evaluate the ratio between Free Cash Flow on Equity (FCFE) and the value of depreciation (F/D index) in a constant sample of FADN farms over the period 2014-2016, and show that F/D is higher than 1 in most types of specialized farms, while it is less than 1 in non-specialized types.

Dono et al. (2021) examine the financial condition of the ensemble of Italian farms, focussing on the different technical-economic orientation sectors. Here we deepen the study of their FADN sample by examining the financial condition in the farms that diversify their activities. In this regard, we focus on *first processing* and *direct selling* of farm products, as well as on *farmhouse*. These activities require more profound changes in entrepreneurial performance, unlike the electricity production, the provision of farm subcontracting services and

¹ Focus Area 2A "Improving the economic performance of all farms and facilitating farm restructuring and modernisation" and 6A "Facilitating diversification, creation and development of small enterprises as well as job creation".

the land leasing, which are excluded from our analysis. We also consider *organic farming* that, while managing typical agricultural practices, modifies the classic profile of the farm and its productions, abandoning the conventional approach. Finally, we include the supply of *quality products* that, with the single farm, often involves other units in areas where productions with typical and homogeneous attributes are made².

For convenience we call *Agribusiness* the whole of these activities, considering that they are an attempt to search for market niches by enriching the range of goods and services provided to users of the typical farm products. The analysis compares the financial results of the farms conducting these 5 activities with the results of farms that conduct only conventional farming activities, which we call *simple farming*. We first examine the financial condition of the FADN sample farms involved in at least one of the 5 based on the F/D ratio, named *sustainability index*, as done by Dono et al. (2021).. Structural, commercial, and economic characteristics that can influence the financial results of the farms involved in the 5 *agribusiness* are hence identified. Comparisons are made with the financial results of the farms that are limited to conventional agricultural management. The analysis is exploratory and looks for clues on the contribution of these activities to the financial sustainability of Italian farms, focusing on the agricultural sectors that Dono et al. (2021) indicate as in difficult financial conditions. This study is, therefore, preliminary to a modelling, econometric or mathematical programming, of the contribution of these activities to the financial sustainability of Italian agriculture.

The next paragraph presents the materials and methods, framing the contribution of the financial analysis, the sequence of operations to calculate cash flows and the indicator used to express the financial sustainability of farms. The section on the results reports the general characteristics of the sample of farms, with the representativeness and weight of the 5 agribusiness activities on the total. Subsequently, the levels of FCFE and depreciation are described to compare the condition of the farms that only deal with typical agriculture and

those involved in the 5 agribusinesses. This analysis is conducted by single activity, by technical-economic sector and by size class of farms. The discussion and conclusion sections follow.

2. MATERIALS AND METHODS.

2.1 General characteristics of the sample of farms

We analyse the financial sustainability of Italian farms based on the constant sample of FADN data used by Dono et al. (2021). The FADN was established by the Reg. 79/65/EEC, updated by Reg. CE 1217/2009, and annually collects technical and economic data of a large farms sample following a similar approach in the European Union countries. The more than 86,000 FADN farms represent nearly 5 million farms in the EU, 90% of the Utilized Agricultural Area (UAA) and 90% of Standard Production. Currently the Italian sample is based on about 11,000 farms and covers 95% of the UAA, 97% of the value of Standard Production, 92% of the Work forces and 91% of the Livestock Units. About 1,000 variables are recorded for each farm in the sample, more than 2,500 for the Italian FADN. The FADN sample only includes professional and market-oriented farms and is stratified by region, size class and technical-economic orientation [OTE as Italian acronym, Type of Farm (TF) according to Reg. CE n. 1242/2008, henceforth TF]. Based on these data, Dono et al. (2021) obtain three years of financial statements (2014-2016) for a constant FADN sample consisting of 4.612 Italian farms, for a total of 13,836 observations.

Here we divide the FADN sample considering the farms involved in the 5 most diffused *agribusiness*: namely *organic farming* (thereafter *organic*), *processing*, *direct selling* (*selling*), *quality production* (*quality*), and *farmhouses*. Of these groupings, the weight on the total sample of some key variables, structural (Gross Capital, UAA, Working Units) and economic [Gross Saleable Production (GSP), Operating Income], as well as their average value is calculated. This provides a representation of the importance and the operational and economic dimension of these activities. The next paragraph illustrates how the cash flows for each farm are calculated in each of the three years considered.

2.2 The calculation of cash flows

Table 1 shows how the cash flow of each farm is computed. The procedure begins by subtracting the tax component from the Operating Result, then adds depre-

² Dealing with diversification and multifunctionality would require referring to consolidated scientific classifications that generally lead back to the concepts of deepening, expansion and regrouping. (Van der Ploeg et Roep, 2003). Yet, the scientific literature agrees that referring to a unique classification could create confusion and complicate the comparison between results obtained from different studies (Sardone et Monda, 2019; Henke et Salvioni, 2011). Even referring to regulations does not always solve the problem of classification. National accounting divides into *support activities* and *secondary activities* contributing to the agriculture production. Eurostat distinguishes *Processing of agricultural products* and *other production of goods and services*. Italian legislation is based on Article 2135 of the Civil Code (OECD, 2009).

Table 1. FCFE Calculation: formulas and FADN Databases (FDB) used.

Income and cash flow items	FDB	Note
<i>Operating income</i>	IS	
- Taxes		
+ Depreciation		
+ Other provisions	BS	Δ (employee leaving indemnity fund + other funds)
± Δ Net working capital	BS	Δ (debts + credits + product stock + raw materials stocks)
- Investments		
<i>Cash Flow From Operations (CAFFO)</i>		
± Principal portion	BS	Δ medium/long term debt
- Interest portion	IS	
+ Public aid		EU second pillar aid and other national aid
+ Other receipts		
<i>Free Cash Flow + Compensation to Farmer resources (CAFFE)</i>		
- Payment to capital	BS	% of net capital
- Compensation to managerial work	IS	% of gross marketable output
- Compensation to manual labor	Lab	hourly wages for hours of family work
<i>Free Cash Flow to Equity (FCFE)</i>		

(IS) = Income Statement; (BS) = Balance Sheet; (Lab) = Labor file; Δ = variation over the year.

ciation, provisions for severance pay and for risks and other expenses. The *variation of net working capital*, as made up of operating receivables with customers and operating payables with suppliers is hence added, as well as *investments*, obtained as increase of inventories net of their depreciation. This generates the *Cash Flow from Operations*. Once the cash flow of the operating activity has been obtained, the financial balance of relationships with the financiers of the farm is considered: where paying interest and principal on debts falling due in the year reduces liquidity, while obtaining new loans increases it. Public aid from the second pillar of the CAP and other national measures also increase liquidity, as well as revenue from other current accounts or other income, such as financial assets or divestments. Paying fines and repaying other loans reduces liquidity. This sequence generates a monetary liquidity variable that still includes payments to work, and the capital resources provided by the farmer. The final cash flow is obtained by subtracting cash withdrawals to pay for the farmer's resources: Dono et al. (2021) estimated these latter payments at opportunity cost values to obtain the *Free Cash Flow to Equity* (FCFE). We use the same approach, although it is an approximation as the farmer does not necessarily collect the opportunity cost payments for the resources provided as, moreover, as is the case with the distribution of corporate dividends (Chay & Jungwon Suh, 2009).

Financial sustainability is considered as achieved when FCFE is greater than the depreciation of produc-

tive capital, even by a margin that can also repay a debt service provided at a subsidized rate. This indicator can be traced back to the financial analysis of the debt of the company that Bonazzi and Iotti apply to the tomato processing industry, aquaculture, and dairy cattle breeding in Italy (Bonazzi and Iotti, 2014a, 2014b, 2015; Iotti and Bonazzi, 2015). These authors calculate the financial sustainability of investment debt by relating its cost to the cash flows generated by various level of the operating activities³. Yet, these indicators can be calculated only in relation to specific investment programs that are in place only in a part of the FADN farms. To carry out a financial sustainability analysis in all cases, as in Dono et al. (2021), we assess whether the final monetary liquidity surplus given by FCFE is sufficient to balance the residual implicit costs, i.e., the depreciation of technologies and provisions for risks or other funds. The index does not check whether the farms will reproduce the initial capital or not. Depreciation, in fact, is calculated at historical cost, which in the case of old plants can make the current restoration cost even very different from that associated with depreciation. Furthermore, new market, policy support and production technology conditions may not induce farmers to restore the original system. Thus, the index verifies a minimum sustainability condition, defined as *weak*, which reveals whether farms are generating additional cash flows at the same rate at

³ Bonazzi and Iotti (2014b) consider, among others, the Operating Cash Flow, and the Unlevered Free Cash Flow, which subtracts the investment and adds the divestment to the former.

which their technological system depreciates. Moreover, unlike the economic valuation indices, the financial components allow this ratio to also embody the investment efforts of farms, as well as their commercial and financial relationships. Dono et al. (2021) calculate the index for the whole sample and for 18 TFs that aggregate the original FADN TFs.

The following analysis compares the economic-financial situation of farms dedicated exclusively to agriculture (*simple farming*), and those involved in at least one of the 5 activities listed above as *agribusiness*. Specifically, the analysis concerns basic structural, commercial, and economic characteristics of the farms in those groups, as well as their values of FCFE, Depreciation and FCFE/Depreciation Ratio (F/D), calculated as in Dono et al. (2021). The comparison is carried out within each Type of Farming (TF), whose index values of *simple farming* are used as reference for assessing the condition of the farms involved in *agribusiness*. After a first general analysis in the whole sample and in each of its TFs, the farms' financial results in each of the 3 years of the sample are examined. This generates three groups of different stability in the financial result: *agribusiness* farms with always better results than *simple farming* (*better*); farms with alternating results (*alternating*); and farms whose results are always worse than *simple farming* (*worse*). This aggregation changes the numbers in *simple farming* and *agribusiness* because includes in the latter also farms engaged in these activities for only one or two of the three years considered, i.e., that are in the start-up or disinvestment phase.

Finally, the results of these three groups are presented by size classes to reduce the influence of the operational scale on the comparison between *agribusiness* and *simple farming*. These classes are obtained by dividing into three equal segments the variation range of the farm's gross saleable agricultural production (GSP) in each TF. Therefore, for instance, expressed in thousands of euros, the small dairy cattle have a GSP of less than € 1.025, the medium between € 1.025 and € 2.044, the large between € 2.044 and € 3.063. Particular attention is paid to the results in the TFs whose F/D value is below the financial sustainability threshold, to assess whether their agribusiness farms show better results or share this difficult situation.

3. RESULTS

Table 2 shows structural and economic features on the constant sample of FADN farms in the period 2014-2016. The two sections of the table distinguish

the cases only involved in *simple farming* and the cases also engaged in the 5 *agribusiness*. The latter are shown both for their general aggregate (*agribusiness*), and for each of the 5 activities. The first section of the table reports the percentage of each group for each variable that are Gross Capital, Utilized Agricultural Area (UAA), Family Work Units, Gross Saleable Production (GSP), Operating Income and the number of cases. Note that the sum of *simple farming* and *agribusiness* is 100, while the sum of the 5 activities exceeds the total of *agribusiness*, because of cases engaged at the same time in more of these activities. The second section of the table reports the average value of those variables, and the average value of ROI calculated net of from the first pillar CAP payments.

The two sections of the table show that, despite an average area analogous to *simple farming*, the farms with *agribusiness* operate in average with lower Gross Capital, employ fewer Family Work Units and generate lower Production Values and Operating Income. Differences emerge for *organic*, whose Production Value is higher than in *simple farming*. *Farmhouses* prevails for Gross Capital invested and employed Family Work, although not in terms of Production Value. The ROI values indicate that overall, the efficiency of these farms is relatively lower than in the *simple farming* units. The *farmhouse* is an exception because it obtains its income, albeit lower, with greater efficiency than simple agriculture.

Table 3 presents the results of the FCFE and Depreciation, as well as the F/D sustainability index, calculated for the whole of the three years on the individual observations in each group.⁴

The F/D index of *simple farming* is higher than the sample average (1.84 vs 1.57) and the entire *agribusiness* (1.15). This worse result of *agribusiness* is mainly due to the lower cash flow production (-42.1% compared to *simple farming*) than to a different level of depreciation (-9.5%). *Organic* is the exception given the +0,31% of FCFE and the -13,2% of Depreciation compared to *simple farming*. *Processing* is in a weaker situation but exceeds the financial sustainability threshold of 1.15 used by Dono et al. (2021). The other *agribusinesses* show average unviable conditions depending on low (*selling*) or negative FCFE values (*quality* and *farmhouses*), and on an average high level of Depreciation (*farmhouses*).

⁴ The table shows the levels of statistical significance of the differences between FCFE values and between Depreciation values but not between F/D values. This happens because the F/D index in the tables are not the average of the farms' values in the individual groups but the ratios between the sum of the FCFE and Depreciation in each group. This kind of calculation does not change the general relationships among groups but prevents from performing the test of the differences between the values of the different groups.

Table 2a. Structural and economic features of FADN farms - percentage weight on the total.

	Gross Capital	UAA	Working Units	GSP	Operating Income	Number
<i>Simple farming</i>	59.0	48.5	50.8	54.1	60.8	48.9
<i>Agribusiness</i>	41.0	51.5	49.2	45.9	39.2	51.1
<i>Organic</i>	14.1	15.9	13.3	20.0	13.2	15.0
<i>Processing</i>	29.2	38.1	37.6	34.5	27.7	39.2
<i>Selling</i>	14.9	19.5	18.1	14.0	12.4	17.6
<i>Quality</i>	5.1	5.7	4.7	5.2	4.5	5.3
<i>Farmhouses</i>	4.6	3.8	4.9	2.5	3.2	4.0

Table 2b: structural and economic features of FADN farms - average value

	Gross Capital	UAA	Working Units	GSP	Operating Income	ROI
<i>Simple farming</i>	1,032,498	32.2	1.36	117,717	64,829	- 0.040
<i>Agribusiness</i>	703,715	32.7	1.26	95,254	39,931	- 0.056
<i>Organic</i>	832,688	34.4	1.16	141,639	45,878	- 0.060
<i>Processing</i>	659,383	31.5	1.25	93,408	36,805	- 0.059
<i>Selling</i>	750,580	35.9	1.34	84,297	36,625	- 0.039
<i>Quality</i>	844,165	34.5	1.16	103,918	44,375	- 0.055
<i>Farmhouses</i>	1,021,023	30.4	1.61	64,896	41,244	- 0.023
Total sample	885,714	32.4	1.31	106,227	52,094	- 0.047

Source: Our elaboration of FADN data.

Table 3. FCFE, Depreciation and financial sustainability index over the entire three-year constant sample.

	FCFE	Depreciation	F/D
<i>Simple farming</i>	19,643	10,825	1.81
<i>Agribusiness</i>	11,283***	9,792***	1.15
<i>Organic</i>	19,703	9,396***	2.10
<i>Processing</i>	11,312***	8,708***	1.30
<i>Selling</i>	10,231***	10,638*	0.96
<i>Quality</i>	-4,440***	9,494**	-0.47
<i>Farmhouses</i>	-3,238***	19,468***	-0.17
Total sample	15,553	9,897	1.57

Difference with *Simple farming* - statistical significance: *** P = 0.99, ** P = 0.95, * P = 0.90.

Source: Our elaboration of FADN data.

Table 4 shows the number of farms in the sample, the percentage of farms by TF, by *simple farming* and by each of the 5 *agribusiness*, and the value of the financial sustainability index for each group. It is noted that the presence of *agribusiness* farms in many TFs is appreciable: in order, in *processing*, *organic* and *direct sales*. In various TFs the presence of *quality* (vineyards), of *farmhouse* (mixed crops and livestock, dairy cattle) is also relevant. *Agribusiness* farms have an F / D index value higher than the value in *simple farming*

in several TFs (in bold-italics and in larger font in the table). 5 of the 7 TFs that are below the financial sustainability threshold for their farms as a whole, have an F/D index value higher than that threshold for their respective *organic* farms. Important results are also found for *quality* (in 3 out of 7 TFs in financial crisis), *farmhouse* and *selling* (in 2 out of 7) and *processing* (in 1 out of 7). No *agribusiness* exceeds the sustainability threshold in dairy cattle; rather, the F/D of all dairy cattle farms involved in *agribusinesses* are lower than *simple farming*.

3.1 Results by stability of financial conditions and by operational size

Table 5 compares the results of *agribusiness* and *simple farming* based on the stability of the results achieved in the single years of the examined period. As before, the comparison is carried out within the Types of Farming (TF) and considers three groups: *agribusiness* farms that in all three years achieved *better* results than *simple farming*; those with always *worse* outcomes; those with *alternating* results. The asterisks in *worse* and *alternating* indicate the statistical significance of the differences between their FCFE and Depreciation and the corresponding values for *better*; the asterisks in *better* refer to the difference with *simple farming*.

Table 4. Number of farms (sample), percentage of farms (by TF, *simple farming* and *agribusiness*), value of the financial sustainability index (by groupings).

Types of farming (TFs)	number of farms Sample	percentage of farms						F/D						
		SIFA	ORG	PRO	DIS	QUA	FAR	SMP	SIFA	ORG	PRO	DIS	QUA	FAR
Mixed Crops and Livestock	447	49.4	11.9	38.3	16.1	2.0	10.1	-0.08	0.09	2.75	-0.02	-0.80	1.16	0.02
Extensive Beef Cattle	828	47.9	17.0	40.3	9.4	1.1	4.6	0.10	-0.29	1.23	0.28	-0.25	-1.45	1.51
Mixed Crops	840	39.3	16.2	49.6	15.7	2.6	6.8	0.38	0.43	1.71	0.00	0.36	4.04	-0.50
Mixed Fruits	1.491	53.4	17.2	36.6	9.9	4.4	2.5	0.80	0.49	3.25	2.11	1.95	-1.50	-1.18
Arable Crops	3.039	66.2	7.5	26.1	7.6	1.7	1.9	0.82	0.77	2.71	0.08	0.40	5.63	0.52
Sheep	720	47.4	23.2	33.3	12.1	0.8	2.1	0.87	0.98	0.94	0.78	1.12	6.35	1.23
Dairy Cattle	1.209	67.0	6.4	22.2	8.1	2.2	8.0	1.15	1.71	-0.11	0.52	0.35	-0.98	-2.19
Vineyards	1.683	45.5	9.4	44.4	14.1	9.5	4.2	1.19	-0.29	1.46	2.08	1.25	-3.08	0.49
Mixed Livestock	297	50.5	10.8	39.1	10.1	1.3	4.0	1.42	0.32	9.28	0.37	2.41	7.32	-1.26
Greenhouse Vegetables	126	73.8	7.1	14.3	9.5	2.4	0.0	1.44	1.91	1.67	-0.94	-3.50	2.02	
Olive Growing	531	5.3	49.9	86.4	17.1	6.8	5.6	2.08	-4.87	2.49	2.84	2.16	3.35	0.32
Swine	252	77.4	1.2	19.0	5.2	0.0	2.4	2.42	2.54	5.91	1.63	2.29		-7.13
Other	849	65.6	5.8	24.3	9.8	1.4	1.4	2.65	3.62	1.81	1.05	0.79	-2.24	4.90
Poultry	336	74.7	6.3	19.3	4.2	0.3	0.0	3.90	3.80	0.81	4.82	3.92		
Citrus Fruits	222	16.2	55.4	61.3	9.9	1.8	0.0	4.12	1.75	5.24	4.94	3.22	0.79	
Open Field Vegetables	624	65.5	9.0	26.3	8.3	1.9	2.4	4.48	5.00	1.72	3.41	6.96	2.78	-0.12
Fruits in Shell	114	69.3	20.2	18.4	0.0	0.9	0.0	6.86	4.39	9.12	10.58		32.31	
Intensive Beef Cattle	228	82.9	7.0	10.1	3.1	1.3	3.1	7.08	7.78	-0.47	-2.36	-0.30	-5.77	-0.76
Total	13.836	55.4	13.1	34.5	10.2	3.1	3.6	1.57	1.81	2.10	1.30	0.96	-0.47	-0.17

Total sample (SMP), Simple farming (SIFA), organic (ORG), processing (PRO), selling (DIS), quality (QUA), farmhouses (FAR).
Source: our elaboration of FADN data.

The table shows that 32.4% of *organic* farms performs *better* than *simple farming*. The percentage is much lower in other *agribusiness*, 17-22%, where instead 40% of farms always obtain worse results than *simple farming*. The gap between the F/D in the three groups is considerable for all activities, with very high average values for *better*. The average F/D in *alternating* is close to the sustainability threshold (1.15) in *organic* and *processing*. In the other activities F/D is less than 1, close to 0 in *farmhouses*. For each *agribusiness* high CV values for FCFE and low values for depreciation emerge, suggesting that the differences in F/D mainly depend on the different values of the cash flows.

Table 6 reports the F/D values of the three groups with relevant structural and economic variables at farm level. The latter include depreciable capital, which affects both the denominator of the F/D index, increasing the depreciation value, and its numerator, adding liquidity to FCFE. The average value of investments over the three years, which certainly influences the productivity level of other resources in the future, but immediately subtracts liquidity from FCFE. Aid from the CAP II pillar adds liquidity to FCFE and includes public funding

to support investments as well as agribusiness management activities. Gross Saleable Production (GSP) reflects the operational size of farms and directly contributes to generating operating income, which adds liquidity to FCFE. The Net change in working capital (ΔWCC) adds, or subtracts, liquidity to FCFE as the result of all commercial relationships with customers, suppliers, and banks. Finally, Return on Investments (ROI) calculated net of the CAP aid of the first pillar, as an indicator of farm efficiency. The data are reported for *simple farming* and *agribusiness*, and for *better*, *alternating*, and *worse* groups. The asterisks indicate the statistical significance of the differences between *better* and the groups *worse* and *alternating*; between *better* and *simple farming*; finally, between total *agribusiness* and *simple farming*.

The average endowment of depreciable, the value of investments, GSP and ROI of *agribusiness* are significantly lower than *simple farming*. *Agribusiness* activities are instead more supported by CAP II aid. There is no significant difference in ΔWCC .

Differences with *simple farming* emerge for the individual groups. *Better* also displays a significantly lower endowment of *depreciable* in *organic*, *processing* and

Table 5. farms with *better*, *alternating*, or *worse* results – percentage, F/D index, FCFE and Depreciation, coefficient variation (CV). Statistical significance of differences among the various groups (*).

Variables		Better	Alternating	Worse	CV = s/m
Percentage weight	Organic	32.4	37.3	30.3	0.11
	Processing	21.8	35.3	42.9	0.32
	Selling	21.4	35.0	43.6	0.34
	Quality	21.1	37.8	41.1	0.32
	Farmhouses	17.3	41.1	41.6	0.42
F/D index	Organic	8.54	1.10	-1.45	1.90
	Processing	5.98	1.20	-2.14	2.43
	Selling	5.89	0.60	-2.02	2.70
	Quality	5.76	0.70	-1.95	2.60
	Farmhouses	4.51	0.20	-1.71	3.19
FCFE	Organic	74,933 ***	8,745 ***	-17,859 ***	2.18
	Processing	61,763 ***	10,432 ***	-16,270 ***	2.13
	Selling	64,150 ***	6,577 ***	-19,028 ***	2.47
	Quality	41,972 ***	6,260 ***	-21,997 ***	3.67
	Farmhouses	65,614 ***	3,355 ***	-39,724 ***	5.43
Depreciation	Organic	8,777 ***	8,167	12,343 **	0.23
	Processing	10,325	8,829 **	7,594 ***	0.15
	Selling	10,882	10,763	9,437	0.08
	Quality	7,283 ***	9,255 *	11,259 ***	0.21

Statistical significance of differences: *** P = 0.99, ** P = 0.95, * P = 0.90.

Source: Our elaboration of FADN data.

quality activities, while it is higher in *farmhouse*. The activities in *better* all make less investments than *simple farming*, while they benefit from significantly greater CAP II aid. They also display a higher ROI and, more important, positive even net of CAP I aid. Conversely, these activities show non-statistically significant differences for GSP and Δ WCC, even if with positive values and higher than *simple farming*.

Statistically significant differences emerge among the three groups in *agribusiness*. *Alternating* and *worse* show significantly higher endowments of depreciable than *better*, as well as lower levels of ROI, Δ WCC and GSP⁵. Since the GSP values in *better* are close to *simple farming*, the GSP levels of *worse* and *alternating* are also lower than this group's values. Conversely, *alternating*, and *worse* show significantly higher investments levels compared to *better*; despite this greater commitment, *worse* receives significantly smaller CAP II aid.

An in-depth analysis may concern the position of the *better*, *alternating*, and *worse* groups, in the individual TFs and also by dimensional classes. The next paragraph presents the results of this analysis by focusing on

the TFs whose F/D value is below the financial sustainability threshold.

3.1.1 Stability of financial conditions by TFs and by operational size

Tables 7 and 7bis report various information relating to the three financial result groups, better (BET), alternating (ALT) and worse (WOR), in each *agribusiness* and for *simple farming* in the TFs whose F/D value is below the financial sustainability threshold.

Table 7 shows, first, the relevance of the three groups with different financial results in terms of percentage of *agribusiness* farms placed in them. The ALT group is on average pre-eminent in all cases, and in most of them it is closely followed by WOR. The percentage of farms in BET is close or above WOR only in *organic*.

The table presents in bold-italics and with a larger font the TFs cases whose F/D *agribusiness* values are greater than *simple farming*. In all cases, the F/D values of *better* are well above the financial sustainability threshold and the value of *simple farming*. *Alternating* also presents many cases above *simple farming*, albeit only a few well above the sustainability threshold (*quality* in sheep and mixed crops - livestock). The F/D values

⁵ Some variables are distributed in the farms of alternating and worse with a high variability; this makes the differences in their average values compared to *better* statistically insignificant, although appreciable.

Table 6. *Simple farming*, total and single agribusinesses in the 3 financial result groups - percentage of farms on total sample, F/D index; per farm 000 € of depreciable, investments, CAP II aid, GSP, DWCC; ROI.

	%	F/D	depreciable (€ 000)	investments (€ 000)	CAP II (€ 000)	GSP (€ 000)	Δ WCC (€ 000)	ROI
Simple farming	48.9	1.84	87.0	19.4	2.9	182.5	-0.2	-0.04
Agribusiness	51.1	1.24	76.7***	13.7***	5.0***	101.9***	-0.8	-0.06***
<i>Better</i>								
Organic	4.9	8.54	54.8 ***	5.2 ***	10.1 ***	176.3	4.5	0.01 ***
Processing	8.6	5.98	69.9 ***	7.7 ***	6.4 ***	173.7	2.5	0.01 ***
Selling	3.8	5.89	76.5	8.9 ***	6.0 ***	184.1	2.3	0.02 ***
Quality	1.1	5.76	49.4 ***	7.9 ***	5.5 ***	144.9 *	0.4	-0.04
Farmhouses	0.7	4.51	140.4 ***	10.6 ***	8.4 ***	162.5	-1.1	0.01 ***
<i>Alternating</i>								
Organic	5.6	1.07	66.0 *	17.0 **	9.6	102.7 ***	-0.6	-0.04 ***
Processing	13.9	1.18	77.8	15.3 ***	5.6	105.6 ***	-2.1 ***	-0.03 ***
Selling	6.2	0.61	108.5 ***	16.1 ***	6.4	102.9 ***	-1.6	-0.02 ***
Quality	2.0	0.68	87.8 ***	23.5 ***	7.0	104.3 *	-3.5	-0.02 *
Farmhouses	1.6	0.22	202.8 ***	25.4 ***	7.7	97.7 **	-2.4	-0.01 *
<i>Worse</i>								
Organic	4.6	-1.45	114.1 ***	19.8 ***	6.9 ***	64.5 ***	-4.1	-0.15 ***
Processing	16.8	-2.14	72.6	10.3 *	2.8 ***	46.0 ***	-2.1 ***	-0.13 ***
Selling	7.7	-2.02	96.3 *	12.3 ***	3.2 ***	56.0 ***	-3.7 ***	-0.08 ***
Quality	2.2	-1.95	110.8 ***	34.6 ***	5.9	118.2	-7.2 ***	-0.08
Farmhouses	1.7	-1.71	286.2 ***	44.8 ***	5.9 *	69.8 ***	-8.3	-0.06 ***

Statistical significance of differences: *** P = 0.99, ** P = 0.95, * P = 0.90.

Source: Our elaboration of FADN data.

of *worse* are all below the sustainability threshold and below the average result of *simple farming*.

The ability to generate cash flows (FCFE) appears crucial in determining the F/D result, as suggested by the extent of the values in *better*, which in all TFs and *agribusiness* are higher than *simple farming*. Similar evidence is found in *alternating*, notably in sheep and mixed crops - livestock. Conversely, FCFE is always negative and inferior to simple farming in *worse*.

Depreciation contributes to determining the value of F/D by increasing both the denominator and the numerator of the index. This makes his specific discussion less interesting and, given the exploratory nature of this study, it was decided not to include his data in Table 7 and to make them available in the tables in Appendix A.

Table 7bis reports some variables that influence the amount of cash flow. In this case, values of *agribusiness* that are above *simple farming* are marked with a bold italic font.

The level of gross saleable production (GSP) directly affects operating income, that is one of the main components of FCFE. In this case it is noted that in most cases in *better* GSP is higher in *agribusiness* farms than in *simple farming*, while the opposite happens for all the

farms in *worse*. Here too we find very high GSP values in the sheep TF in *alternating*.

Furthermore, the ROI, here taken as an indicator of efficiency, assumes average positive values in *agribusiness* farms, while in simple farming it always assumes average negative values. *Agribusiness* farms have higher ROI also in many TFs in *alternating*. Yet, in these cases the indicator mainly maintains negative values. Even in *worse* there are TFs whose ROI is higher in *agribusiness* than in *simple farming*, even if always with a negative sign.

Finally, the table shows the investments (INV), which subtract liquidity from FCFE, and the II pillar aid of the Common Agricultural Policy (CAP II), which add it often applying measures to support the former. Those data show that the value of the investments in *agribusiness* is lower than in *simple farming* in almost all TFs. The opposite happens for *alternating* and *worse*, where investments of some TFs are even 6-7 higher than in *better*. Above all, it is interesting to note that, despite this investment discrepancy, CAP II aid are mostly greater in *better* than in *alternating* and *worse*.

The last in-depth study of this exploration concerns the distribution of *agribusiness* farms among the three

Table 7. Percentage of farms, F/D, FCFE in each financial result group in each agribusiness by TF; comparison F/D and FCFE in *simple farming*.

Type of farming (TFs)	Farms % Agribusiness					F/D					FCFE (000 €)						
	ORG	PRO	DIS	QUA	FAR	SIF	ORG	PRO	DIS	QUA	FAR	SIF	ORG	PRO	DIS	QUA	FAR
Mixed Crops - Livestock BET	34.0	15.8	16.7		15.6	0.09	5.32	5.83	5.01		6.53	0.9	109.2	88.9	35.3		50.0
Extensive Beef Cattle	30.5	21.3	15.4	11.1	26.3	-0.29	4.45	3.63	6.70	2.02	5.32	-2.4	40.6	54.7	45.5	15.2	107.8
Mixed Crops	21.3	13.2	19.7	18.2	5.3	0.43	7.14	7.66	8.05	7.04	28.12	2.8	90.4	56.6	48.9	192.9	26.1
Mixed Fruits	35.9	25.5	23.6	23.1	13.5	0.49	8.24	7.48	10.58	4.61	6.24	4.2	55.4	54.6	99.5	48.0	38.3
Arable Crops	31.0	17.9	16.8	37.3	19.3	0.77	9.36	6.50	5.47	13.9	7.79	6.7	83.7	43.1	57.4	59.5	59.8
Sheep	26.9	13.3	21.8		40.0	0.98	6.42	5.34	4.17		4.50	7.2	52.5	81.6	93.2		261.7
Dairy Cattle	13.0	16.4	19.4	3.7	6.2	1.71	6.41	4.98	6.39	2.32	2.48	38.3	73.9	88.9	79.0	36.1	50.3
Mixed Crops - Livestock ALT	50.9	36.3	40.3	33.3	60.0	0.09	1.18	0.12	0.24	5.66	0.13	0.9	17.1	1.5	4.6	125.8	3.3
Extensive Beef Cattle	43.3	43.1	47.4	44.4	52.6	-0.29	0.39	-0.57	-0.24	-1.60	-0.33	-2.4	3.9	-6.1	-3.8	-21.6	-5.8
Mixed Crops	52.2	44.1	51.5	50.0	63.2	0.43	1.15	0.56	0.09	0.58	0.50	2.8	7.0	2.9	0.6	2.9	3.8
Mixed Fruits	37.9	32.8	34.5	41.5	37.8	0.49	1.02	1.29	-0.42	-1.79	-0.38	4.2	7.7	6.4	-4.1	-23.7	-10.5
Arable Crops	36.2	30.7	29.7	37.3	33.3	0.77	1.20	0.01	0.03	1.23	0.71	6.7	5.4	0.0	0.2	5.0	10.3
Sheep	40.7	40.0	37.9	100.0	20.0	0.98	1.06	1.10	1.09	6.35	1.69	7.2	11.5	14.2	15.3	49.2	62.2
Dairy Cattle	39.0	39.2	32.7	11.1	23.7	1.71	0.79	0.89	0.89	-6.07	-0.74	38.3	15.8	12.4	15.7	-175.2	-15.1
Mixed Crops - Livestock WOR	15.1	48.0	43.1	66.7	24.4	0.09	-4.02	-7.39	-8.29	-5.04	-4.68	0.9	-24.5	-30.8	-38.3	-40.6	-38.3
Extensive Beef Cattle	26.2	35.6	37.2	44.4	21.1	-0.29	-2.69	-4.15	-4.64	-2.99	-6.07	-2.4	-13.8	-17.8	-20.8	-8.8	-11.9
Mixed Crops	26.5	42.7	28.8	31.8	31.6	0.43	-1.82	-2.19	-1.60	-4.04	-0.76	2.8	-25.1	-20.5	-23.3	-9.7	-56.5
Mixed Fruits	26.2	41.7	41.9	35.4	48.6	0.49	-4.46	-3.83	-3.33	-6.52	-2.99	4.2	-12.6	-13.4	-16.7	-48.0	-49.3
Arable Crops	32.8	51.4	53.4	25.5	47.4	0.77	-1.71	-2.30	-2.08	-8.12	-0.39	6.7	-18.9	-14.1	-12.7	-15.2	-10.5
Sheep	32.3	46.7	40.2		40.0	0.98	-0.70	-0.86	-0.66		-0.15	7.2	-16.6	-12.3	-13.5		-21.0
Dairy Cattle	48.1	44.4	48.0	85.2	70.1	1.71	-1.37	-0.85	-0.59	-0.52	-3.17	38.3	-37.7	-21.2	-23.1	-19.0	-59.5

Better (BET, alternating (ALT), worse (WOR), simple farming (SIFA), organic (ORG), processing (PRO), selling (DIS), quality (QUA), farmhouses (FAR).

Source: our elaboration of FADN data.

GSP size classes and the financial result groups. Table 8 allows this assessment for TFs with F/D values below the *financial sustainability threshold (FIST)*, and for the group above it.

The first section of the table shows that most of the *agribusiness* farms are in the small dimensional class: 98.2% in the TFs with F/D under FIST, 96.9% in the other TFs. *Agribusiness* farms in BET are always a minority share; in TFs below FIST their percentage is even lower, 20.5%, while the financial result of more than 40% of those farms is worse than *simple farming*.

The second part of the table shows the F/D index values of each group⁶. A gap emerges between the F/D values in *better*, which confirm the figures of the previous tables, and those in *alternating* and *worse*. The prevalence of cases in the latter groups greatly reduces

the average values of F/D both for the total *agribusiness* and for the small farms. The impact is greater in TFs in financial difficulty, to the point that their F/D index value is below the FIST both in the general average and in small farms.

4. DISCUSSION

More than half of our FADN observations manage activities that we have called *agribusiness*. Yet, their weight on the sample's income is much lower, and when compared to *simple farming* the average operating income of *agribusiness* is a lower fraction of both gross invested capital and family work units. We found that these activities are carried out on farms that have smaller GSP, and in large part also worse financial results than *simple farming* in their respective TFs. Yet, a group, albeit a minority, of *agribusiness* farms achieves better financial results than *simple farming*; and it is interesting to note that most of these farms are classified in TFs

⁶ In the group *large* the F/D value of *alternating* is lower than in *worse* because the comparison is carried out within each TFs, and given the low number of large farms in *alternating* and *worse*, this implies comparing the results of diverse TFs.

Table 7bis. GSP, ROI, Investments and CAP II aid per farm in *simple farming* and in each financial result group of each *agribusiness*.

	GSP (000 €)										ROI										INV (000 €)										CAP II (000 €)									
	SIF	ORG	PRO	DIS	QUA	FAR	SIF	ORG	PRO	DIS	QUA	FAR	SIF	ORG	PRO	DIS	QUA	FAR	SIF	ORG	PRO	DIS	QUA	FAR	SIF	ORG	PRO	DIS	QUA	FAR										
Mixed Crops - Livestock	BET	169,8	313,3	224,3	123,8	107,2	-0,04	0,04	0,04	0,00	0,04	0,04	23,0	9,6	6,8	0,2	2,8	4,0	8,6	4,7	3,5	1,4	4,0	8,6	4,7	3,5	1,4													
Extensive Beef Cattle	BET	105,4	116,4	160,3	98,8	38,6	378,9	-0,07	-0,02	0,02	0,02	-0,03	0,02	11,3	5,5	8,1	5,4	7,6	16,3	4,5	11,1	9,4	4,5	11,1	9,4	4,5	11,0	8,5												
Mixed Crops	BET	89,1	172,5	156,4	147,4	501,1	107,2	-0,13	0,06	0,05	0,04	-0,03	0,01	7,3	3,0	1,3	1,0	1,1	1,2	1,8	7,1	3,5	4,8	8,9	7,4	7,4	7,4	7,4												
Mixed Fruits	BET	95,2	155,1	155,3	311,8	129,2	66,4	-0,01	0,03	0,03	0,03	0,01	0,04	18,7	3,3	2,8	5,2	11,4	7,2	1,4	8,0	4,1	6,6	5,3	2,8	2,8	2,8	2,8												
Arable Crops	BET	115,2	216,6	124,3	155,8	166,2	93,2	-0,08	0,04	-0,02	0,00	0,02	0,01	18,4	4,1	4,4	8,8	0,2	15,0	3,8	12,7	7,9	7,8	6,9	14,0	14,0	14,0	14,0												
Sheep	BET	67,8	118,9	205,6	241,2	662,4	-0,03	0,02	0,07	0,05	0,03	0,03	9,4	6,6	9,6	8,2	20,5	5,5	19,8	10,6	5,5	17,0	17,0	17,0	17,0	17,0	17,0	17,0												
Dairy Cattle	BET	269,5	188,5	251,5	203,6	221,4	107,6	0,00	0,04	0,04	0,05	0,00	0,00	34,2	12,3	17,5	11,8	0,0	17,7	5,3	10,6	8,5	12,2	0,0	28,3	28,3	28,3	28,3												
Mixed Crops - Livestock	ALT	169,8	86,2	85,5	103,0	118,0	132,6	-0,04	0,00	-0,01	0,00	0,10	0,01	23,0	15,2	14,5	21,4	8,1	29,2	4,0	10,9	7,0	8,7	2,7	10,6	10,6	10,6	10,6												
Extensive Beef Cattle	ALT	105,4	65,0	79,9	80,2	63,4	103,1	-0,07	-0,04	-0,03	-0,03	-0,03	-0,02	11,3	12,7	17,1	21,5	0,1	20,1	4,5	12,4	5,5	9,2	19,4	12,6	12,6	12,6	12,6												
Mixed Crops	ALT	89,1	95,3	68,3	72,5	51,3	40,7	-0,13	-0,12	-0,06	-0,01	-0,03	0,01	7,3	6,0	8,4	11,1	4,1	7,7	1,8	8,3	4,7	6,7	9,0	5,3	5,3	5,3	5,3												
Mixed Fruits	ALT	95,2	87,4	72,9	78,4	108,4	109,6	-0,01	-0,03	-0,01	-0,02	-0,03	0,00	18,7	14,5	10,7	17,6	63,3	46,4	1,4	8,6	3,8	4,2	3,1	2,2	2,2	2,2	2,2												
Arable Crops	ALT	115,2	61,2	60,9	67,6	56,4	118,2	-0,08	-0,04	-0,05	-0,03	-0,06	-0,03	18,4	6,2	10,9	7,2	7,0	13,3	3,8	8,8	3,1	5,7	4,4	11,0	11,0	11,0	11,0												
Sheep	ALT	67,8	80,9	107,7	91,1	108,0	67,4	-0,03	-0,01	-0,02	-0,02	-0,03	0,00	9,4	13,4	22,1	12,6	1,2	0,1	5,5	12,4	12,8	14,0	7,3	23,3	23,3	23,3	23,3												
Dairy Cattle	ALT	269,5	209,3	143,5	154,1	116,2	127,4	0,00	0,00	0,00	0,00	-0,02	0,01	34,2	45,1	25,5	18,6	210,1	63,4	5,3	24,6	14,2	15,8	64,7	10,5	10,5	10,5	10,5												
Mixed Crops - Livestock	WOR	169,8	60,5	38,0	32,9	45,8	15,4	-0,04	-0,18	-0,12	-0,10	-0,02	-0,18	23,0	11,0	13,3	21,3	26,6	28,1	4,0	3,6	1,4	1,4	2,6	1,5	1,5	1,5	1,5												
Extensive Beef Cattle	WOR	105,4	32,4	38,4	40,2	20,1	16,7	-0,07	-0,11	-0,09	-0,10	-0,18	-0,14	11,3	11,7	5,5	8,5	1,8	1,7	4,5	5,5	1,8	2,8	3,9	3,4	3,4	3,4	3,4												
Mixed Crops	WOR	89,1	42,7	30,6	42,9	20,4	80,8	-0,13	-0,24	-0,17	-0,11	-0,39	-0,19	7,3	49,5	18,4	15,5	1,0	59,2	1,8	4,2	1,6	0,8	1,9	4,6	4,6	4,6	4,6												
Mixed Fruits	WOR	95,2	27,8	27,0	32,6	73,0	71,2	-0,01	-0,22	-0,16	-0,11	-0,06	-0,01	18,7	2,7	4,2	5,9	50,7	78,4	1,4	2,9	1,0	1,6	1,2	0,7	0,7	0,7	0,7												
Arable Crops	WOR	115,2	51,1	36,5	43,1	21,2	55,4	-0,08	-0,13	-0,14	-0,08	-0,06	-0,07	18,4	24,3	7,4	8,4	3,1	8,2	3,8	5,5	1,8	2,2	1,1	3,5	3,5	3,5	3,5												
Sheep	WOR	67,8	53,6	41,7	45,6	151,2	-0,03	-0,08	-0,09	-0,07	-0,04	-0,04	9,4	17,9	7,9	9,2	37,9	5,5	9,9	3,4	6,6	18,8	18,8	18,8	18,8	18,8	18,8	18,8												
Dairy Cattle	WOR	269,5	94,9	102,5	159,5	237,5	74,0	0,00	-0,02	-0,03	-0,02	-0,01	34,2	42,5	22,1	30,6	67,7	76,3	5,3	18,1	14,3	20,3	27,0	9,7	9,7	9,7	9,7													

Better (BET), alternating (ALT), worse (WOR), simple farming (SIFA), organic (ORG), processing (PRO), selling (DIS), quality (QUA), farmhouses (FAR).
 Source: Our elaboration of FADN data.

Table 8. Percentage distribution of agribusiness farms by financial result groups, size class and by groups of TFs, with relative value of the F/D index.

		% on agribusiness farms				F/D value			
		BET	ALT	WOR	TOTAL	BET	ALT	WOR	TOTAL
F/D < FIST	SMALL	19.2	37.6	41.4	98.2	5.68	0.28	-1.76	0.21
	MEDIUM	0.9	0.4	0.0	1.4	8.70	4.81		7.67
	LARGE	0.4	0.02	0.02	0.4	7.83	-5.07	1.12	6.94
	TOTAL	20.5	38.1	41.4	100.0	6.25	0.39	-1.74	0.60
F/D > FIST	SMALL	24.5	37.9	34.6	96.9	3.06	1.31	-0.99	1.00
	MEDIUM	1.3	1.2	0.1	2.6	3.71	-0.24	0.83	2.34
	LARGE	0.4	0.03	0.1	0.5	10.34	1.00	3.18	8.64
	TOTAL	26.2	39.1	34.7	100.0	3.75	1.22	-0.89	1.34

Source: our elaboration of FADN data.

whose average F/D value is below the financial profitability threshold. The ability to produce liquidity is the most important factor in determining the financial sustainability differential between farms in *simple farming* and those engaged in the various types of *agribusiness*. Among the latter, *organic* shows the best situation, with analogous share of the three groups and the lowest percentage of farms in *worse*. *Processing* remains above the sustainability threshold even in *alternating*. *Selling, quality* and *farmhouses* do not share this condition and show an average unsustainable condition. *Farmhouses* shows the largest percentage of cases in *unstable* and *worse*.

The results on the structural and economic variables provided interesting insights into the conditions linked to the different levels of financial sustainability in the various groups.

High values of the F/D index are associated with high levels of GSP and ROI. The group *better* reaches values of 3-4 times higher for these variables than the *unstable* and *worst*. *Better* achieves greater sustainability even than *simple farming*. Its higher level of GSP suggests that the link between the operational dimension and financial difficulties of *agribusiness* farms should be studied. The literature deals extensively with this topic. Meraner et al. (2015) claim that an increase in the economic dimension affects the likelihood of undertaking transformation activities. McNamara and Weiss (2005) also argue that as farm size increases, on-farm income diversification is more likely since the decline of marginal yields favours the allocation of farm resources towards more profitable activities. Ilbery (1991) and McNally (2001) reach the same conclusion. According to García-Arias et al. (2015) this happens because larger farms have more resources to devote to non-typical activities. Lakner et al. (2018) note that in Austria and

Switzerland, diversification increases farm production, which in turn strengthens the stability of agricultural production. Instead, diversification negatively affects technical efficiency in some territories, while it improves it in others. Clearly, the commitment to new activities other than simple agriculture also involves profound changes in the corporate structure and organization, as indicated by Salvioni et al. (2020). This suggests that many *agribusiness* farms might still be in an evolutionary phase that does not yet allow for significant levels of production, efficiency, and profitability. In our sample the farms engaged in *agribusiness* are mostly small and most of them obtain worse results of the same type in simple farming. This gap is more marked in TFs in financial difficulty, while in other TFs even small farms with *alternating* results are financially sustainable. Large farms are in a clear minority, even if in the group *better* their sustainability is very high. This picture of limited financial sustainability of small farms engaged in *agribusiness* is in partial contrast to the results of the studies cited above.

The greater commitment in *investments* does not correspond to greater public aid. The amount of *CAP II* payments is, in fact, significantly lower for *alternating*, *worse*, and *simple farming*, despite the greater investments undertaken. This divergence could be due to the time gap between the time of the investment expenditure and the reimbursement provided for by the *CAP II* aid mechanisms, whose payments are linked on project progress. Still, our analysis is based on a three-year time frame; hence, even in the presence of that time gap, it should capture at least a part of the aid associated with these investments. In any case, the condition of greater financial difficulty of the farms in the stage of investments raises the question of the effectiveness of this

support system, which does not appear to contribute to financial sustainability in that specific phase. The issue needs to be investigated also by examining in detail the composition of the *CAP II* aid, which includes support for activities that do not require investing in depreciable capital. In any case, this evidence agrees with the conclusions of Boncinelli et al. (2018) that highlight the absence of any relationship between RDP payments and diversification.

Higher endowments of depreciable are found precisely in the groups *alternating* and *worse* in which the FCFE values are lower or even negative. Instead, for all agribusiness activities, the group *better* shows lower endowment of these capital, along with lower depreciation levels which reduce the denominator of F/D. On the other hand, there is the impact of higher depreciation levels in increasing the numerator of the F/D ratio, favouring greater generation of FCFE. Dono et al. (2021) concluded that in the studied period these capitals show little capacity to increase farms financial sustainability. Our evidence seems to agree with those conclusions, which suggests that in acquiring new capital it will be useful to verify their impact on the productivity. This is mainly true for *organic*, *quality* and *farmhouse* whose endowments of depreciable in *worse* and *alternating* are much higher than in *better*, but negative differences in FCFE are also greater.

The literature also deals with the conditions for the development of commercial relationships with buyers, suppliers, and banks: in the cash flows analysis they also contribute to transforming the value of production into greater liquidity through the Δ WCC. In this regard, Pölling and Mergenthaler (2017) claim that in *direct sales* activities an important role is played by proximity to urban centres, although with differences due to the farm size and technical-economic orientation. Besides, the wide variability in the results agrees with the statements of Bauman et al. (2018) on US farms engaged in *direct selling* that show how results vary under different management conditions, types of market and farm location areas. Our study did not consider the location of the farm which, especially in disadvantaged areas, far from the most dynamic agricultural markets, could lead to less intensive activities or activities related to tourism, such as *farmhouses*. In this regard, a third of the farmers interviewed by De Rooij et al. (2014) believes that multifunctionality is best located in areas “without a future for conventional farming”.

The literature on farm diversification pays close attention to the performance of the *farmhouses*. Bagi and Reeder (2012), show that the global net income of the average agritourism farm was small relative to all

other farms in 2007. Mastronardi, et al., (2011) claim that the profitability of *simple farming*, especially when specialized in tree crops, is more than double than in *farmhouses*. Still, according to Giaccio et al. (2018a; 2018b) *farmhouses* can increase their income also engaging in other activities such as *selling*, *organic* and typical foods production, catering and wine tasting services, access to environmental assets, such as forest areas, and provision of leisure services, such as cultural and sport activities. Dries et al. (2012) and Khanal (2020) also claim that there are synergies between structural and farm diversification activities. On the contrary, Khanal and Mishra (2014) affirm that small farms obtain better results by undertaking both farmhouse and off-farm work⁷. Giaccio et al. (2018a) show that farm income decreases significantly as the number of family members employed on the farm increases. At the same time, according to Lupi et al. (2017) farms that employ more (non-family) work are more likely to invest in agritourism businesses.

We have not explored the links between diverse *agribusiness* activities due to the limited number of observations with more integrated activities in the studies FADN sample. Our evidence agrees with these results as we found the most difficult situations in *farmhouses* and *quality*, which are in less favourable condition even when they get the best results, as in *better*. Moreover, in the latter activity there is a strong push towards technological innovation that requires great changes and investments that put the farms in difficulty at least momentarily. An example is the Parmigiano Reggiano supply chain, cited by Arfini et al. (2019a). We believe that our conclusions are consistent with these considerations, as they depict a very dynamic situation, characterized by investments that have not yet reimbursed the costs incurred and are not yet fully operational.

5. CONCLUSION

We have found that the studied activities in the examined period constitute a dynamic group in which the farms with negative or unsustainable results are not doomed to bankruptcy. In fact, many of the *agribusiness* farms are engaged in major investments which, on the one hand, subtract liquidity from the cash flow and,

⁷ Yet, this aspect should be investigated by remembering that the Italian legislation on the subject is very different from that of other countries and the farm is considered an agricultural activity and can only be carried out by a farmer “through the use of his own farm in term of the connection of the farming, forestry and livestock raising activities within the holding” (Law number 96/2006).

on the other, take time to express their potential or even become operational. All this outlines a situation in evolution, perhaps even rapid, therefore, to be verified with further in-depth studies in a short time. In this perspective, it should also be deepened that farms that approached agribusiness in the middle of the last decade, investing or in a growth phase in this period, have had probably a major stop due to the COVID-19 crisis. This could have strongly affected their growth precisely at the moment of entry into operation of many of their investments.

Still, the evidence of financial difficulty faced by *agribusiness* farms that make more investments suggests that it would be useful to modulate financial aid in a different way. This could be partially disbursed at the beginning of the investment process to reduce the financial difficulties associated with its activation. In any case, it is also interesting to explore the perspectives of the group *better* that, at the moment, is investing less than the others. In particular, it can be asked whether these farms will be able to generate sufficient financial resources to renew their technologies when their capital runs out of payback.

The situation of the farms in *agribusiness* deserves further investigation especially about the situation of the mixed and more extensive TFs that appear to be in financial difficulty according to Dono et al. (2021). It is of interest to deepen the investigation on the possible contribution of *agribusiness* in improving the financial condition of these TFs. To investigate these aspects, given the scarcity of observations for activities such as *quality* and *farmhouses*, it would be desirable to increase the FADN sample, especially of *agribusiness* relevance. Another aspect of interest concerns the results deriving from the aggregation of these activities: it leads to investigate the issues of the integration of functions along the value chain by farms.

ACKNOWLEDGEMENT

This research was carried out in the context of two projects funded by MIUR (MInistry for Education, University and Research): Department of Excellence project (law 232/2016), and SMARTIES project (PRIMA 2019, section 2 – multi-topic). The funders had no role in the study design, data collection and analysis, decision to publish or manuscript preparation.

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APPENDIX A

The following tables report key variables for the three financial result groups (*better, alternating, worse*) in each *agribusiness*, in each TF. The reported variables are: FCFE, Depreciation (DEPR), F/D, Amortizable Capital (AMOC), Investments (INVES), CAP II aid, Gross saleable production (GSP), Working capital Variation (DWCC), Return on investment (ROI), percentage of farms in the financial result group over the farms of the agribusiness activity in the TF (% N).

Organic <i>better</i> than <i>simple farming</i>	FCFE	DEPR	F/D	AMOC	INVES	CAP II	GSP	DWCC	ROI	%N
Mixed Crops and Livestock	109,193	20,512	5.32	97,967	9,569	8,579	313,256	36,987	0.04	34.0
Extensive Beef Cattle	40,575	9,127	4.45	17,596	5,544	11,069	116,419	45	-0.02	30.5
Mixed Crops	90,421	12,672	7.14	95,509	2,992	7,090	172,464	553	0.06	21.3
Mixed Fruits	55,440	6,725	8.24	36,501	3,319	7,997	155,074	-380	0.03	35.9
Arable Crops	83,680	8,941	9.36	54,566	4,148	12,742	216,572	4,252	0.04	31.0
Sheep	52,541	8,187	6.42	24,724	6,644	19,846	118,887	977	0.02	26.9
Dairy Cattle	73,903	11,531	6.41	86,511	12,323	10,593	188,461	3,414	0.04	13.0
Vineyards	91,709	11,499	7.98	52,548	8,244	7,651	191,196	3,901	0.04	28.5
Mixed Livestock	261,754	8,091	32.35	84,251	5,194	20,724	333,967	110,174	-0.01	53.1
Greenhouse Vegetables										0.0
Olive Growing	26,066	6,528	3.99	61,104	1,055	8,475	77,641	-182	-0.06	54.3
Swine										0.0
Other	133,535	9,695	13.77	21,941	4,129	2,325	391,676	-23,171	0.05	16.3
Poultry	39,353	0		300	569	2,265	40,998	20,243	0.07	14.3
Citrus Fruits	68,206	6,085	11.21	21,609	1,786	16,400	161,915	66	0.04	34.1
Open Field Vegetables	23,688	2,409	9.83	28,860	576	3,787	99,397	-848	0.05	12.5
Fruits in Shell	172,103	15,461	11.13	123,239	77,055	13,213	277,489	5,340	0.09	39.1
Intensive Beef Cattle										0.0
TOTAL	66,164	8,491	7.79	50,585	5,039	10,724	156,493	5,096	0.03	32.1

Organic <i>alternating</i> over <i>simple farming</i>	FCFE	DEPR	F/D	AMOC	INVES	CAP II	GSP	DWCC	ROI	%N
Mixed Crops and Livestock	17,108	14,524	1.18	177,659	15,166	10,894	86,153	4,563	0.00	50.9
Extensive Beef Cattle	3,911	10,062	0.39	46,070	12,727	12,435	65,036	514	-0.04	43.3
Mixed Crops	6,956	6,039	1.15	56,972	6,006	8,263	95,321	1,840	-0.12	52.2
Mixed Fruits	7,679	7,539	1.02	62,409	14,549	8,610	87,370	1,661	-0.03	37.9
Arable Crops	5,383	4,480	1.20	63,378	6,181	8,822	61,184	-1,476	-0.04	36.2
Sheep	11,527	10,850	1.06	68,431	13,368	12,379	80,934	-1,659	-0.01	40.7
Dairy Cattle	15,776	19,906	0.79	159,685	45,105	24,557	209,309	10,287	0.00	39.0
Vineyards	25,842	14,839	1.74	141,147	28,124	5,819	193,831	-8,474	0.01	28.5
Mixed Livestock	-68,795	15,394	-4.47	77,632	249,670	36,338	393,577	-2,658	0.00	46.9
Greenhouse Vegetables	122,678	60,799	2.02	419,479	17,667	0	359,083	3,897	0.15	33.3
Olive Growing	-5,363	2,672	-2.01	20,878	9,710	5,419	36,509	-1,268	-0.14	39.2
Swine	34,723	5,878	5.91	29,567	2,053	1,985	167,743	4,831	0.01	100.0
Other	20,961	11,101	1.89	48,417	16,005	5,753	233,513	4,194	0.00	36.7
Poultry	26,326	8,207	3.21	45,290	5,827	2,551	204,896	3,705	0.03	42.9
Citrus Fruits	26,762	5,297	5.05	34,080	3,034	9,998	110,320	-2,812	0.01	33.3
Open Field Vegetables	51,623	8,086	6.38	73,211	10,473	12,217	245,748	-8,365	0.03	33.9
Fruits in Shell	39,010	7,066	5.52	33,545	7,974	6,738	110,803	-432	0.00	39.1
Intensive Beef Cattle	-7,387	0		0	642	15,644	52,139	-3,383	-0.14	12.5
TOTAL	9,528	8,450	1.13	67,821	17,894	9,961	106,017	-260	-0.02	38.9

<i>Organic worse than simple farming</i>	FCFE	DEPR	F/D	AMOC	INVES	CAP II	GSP	DWCC	ROI	%N
Mixed Crops and Livestock	-24,513	6,102	-4.02	61,924	11,036	3,562	60,453	-7,029	-0.18	15.1
Extensive Beef Cattle	-13,761	5,122	-2.69	46,679	11,651	5,525	32,360	152	-0.11	26.2
Mixed Crops	-25,102	13,788	-1.82	138,688	49,515	4,201	42,735	28,541	-0.24	26.5
Mixed Fruits	-12,582	2,821	-4.46	22,869	2,697	2,878	27,796	-921	-0.22	26.2
Arable Crops	-18,884	11,045	-1.71	102,593	24,338	5,509	51,088	8,300	-0.13	32.8
Sheep	-16,554	23,816	-0.70	111,819	17,869	9,912	53,587	-2,268	-0.08	32.3
Dairy Cattle	-37,685	27,452	-1.37	474,224	42,490	18,110	94,878	-16,880	-0.02	48.1
Vineyards	-39,157	8,966	-4.37	96,108	30,606	3,415	64,375	-12,851	-0.05	43.0
Mixed Livestock										0.0
Greenhouse Vegetables	-10,333	220	-46.90	894	258	183	47,574	-19	-0.38	66.7
Olive Growing	-8,468	374	-22.65	11,419	8,935	3,535	9,704	2,177	-0.92	6.4
Swine										0.0
Other	-20,669	11,293	-1.83	80,328	14,388	1,848	90,521	-1,975	-0.07	46.9
Poultry	-18,823	17,204	-1.09	202,599	52,103	3,644	33,280	378	0.03	42.9
Citrus Fruits	3,003	7,647	0.39	41,900	1,836	17,079	106,604	-14,695	-0.40	32.5
Open Field Vegetables	2,845	18,155	0.16	138,296	18,838	19,757	189,140	-6,639	-0.03	53.6
Fruits in Shell	-1,628	928	-1.75	4,789	125	3,000	14,635	-21	-0.11	21.7
Intensive Beef Cattle	-5,473	13,965	-0.39	98,120	16,923	5,106	112,462	5,760	-0.02	87.5
TOTAL	-18,154	11,666	-1.56	109,610	20,448	7,465	64,853	-1,511	-0.18	29.0

<i>Processing better than simple farming</i>	FCFE	DEPR	F/D	AMOC	INVES	CAP II	GSP	DWCC	ROI	%N
Mixed Crops and Livestock	88,889	15,258	5.83	92,144	6,792	4,745	224,278	27,380	0.04	15.8
Extensive Beef Cattle	54,724	15,065	3.63	80,792	8,082	9,412	160,292	-2,011	0.02	21.3
Mixed Crops	56,630	7,389	7.66	56,618	1,340	3,526	156,402	-1,734	0.05	13.2
Mixed Fruits	54,591	7,294	7.48	48,466	2,822	4,134	155,289	112	0.03	25.5
Arable Crops	43,136	6,641	6.50	51,009	4,379	7,940	124,253	885	-0.02	17.9
Sheep	81,562	15,263	5.34	63,739	9,630	10,553	205,572	-1,497	0.07	13.3
Dairy Cattle	88,913	17,848	4.98	100,811	17,456	8,491	251,492	1,010	0.04	16.4
Vineyards	130,368	20,798	6.27	129,997	20,506	6,817	341,806	5,144	0.05	17.6
Mixed Livestock	67,981	5,452	12.47	27,026	4,052	5,068	135,264	620	-0.01	18.1
Greenhouse Vegetables	110,337	13,041	8.46	71,338	206,941	0	1,227,583	5,195	0.11	5.6
Olive Growing	31,199	7,360	4.24	62,558	2,783	5,216	90,941	696	-0.04	51.6
Swine	247,597	15,465	16.01	241,610	19,139	0	529,816	19,945	0.11	8.3
Other	48,088	4,520	10.64	39,468	3,838	3,098	155,421	1,625	0.05	16.5
Poultry	148,415	6,282	23.62	53,552	1,453	231	235,666	14,281	0.12	26.2
Citrus Fruits	91,413	7,872	11.61	25,833	2,573	19,427	202,941	35	0.07	20.6
Open Field Vegetables	174,734	7,233	24.16	27,483	2,742	1,369	495,664	3,379	0.09	6.7
Fruits in Shell	166,380	15,417	10.79	129,450	78,364	3,473	294,791	2,920	0.14	42.9
Intensive Beef Cattle										0.0
TOTAL	66,637	10,455	6.37	69,550	7,589	6,320	178,136	1,936	0.05	21.0

<i>Processing alternating over simple farming</i>	FCFE	DEPR	F/D	AMOC	INVES	CAP II	GSP	DWCC	ROI	%N
Mixed Crops and Livestock	1,509	12,893	0.12	160,760	14,463	7,049	85,496	2,624	-0.01	36.3
Extensive Beef Cattle	-6,135	10,803	-0.57	80,844	17,070	5,465	79,945	-1,816	-0.03	43.1
Mixed Crops	2,881	5,140	0.56	44,313	8,425	4,711	68,257	387	-0.06	44.1
Mixed Fruits	6,407	4,980	1.29	36,882	10,723	3,819	72,857	-1,894	-0.01	32.8
Arable Crops	42	6,118	0.01	60,493	10,900	3,119	60,893	1,152	-0.05	30.7

Sheep	14,242	12,995	1.10	74,768	22,056	12,770	107,724	-3,697	-0.02	40.0
Dairy Cattle	12,447	14,022	0.89	89,683	25,468	14,158	143,487	-508	0.00	39.2
Vineyards	25,015	12,530	2.00	117,510	23,602	5,170	181,251	-12,605	0.01	42.8
Mixed Livestock	1,135	8,505	0.13	78,242	2,182	6,276	88,829	-1,986	-0.02	36.2
Greenhouse Vegetables	-7,503	5,057	-1.48	85,363	2,561	0	117,605	-7,652	-0.01	66.7
Olive Growing	-744	3,262	-0.23	22,515	11,398	3,499	52,342	1,257	-0.09	38.8
Swine	49,173	20,570	2.39	276,229	19,019	2,062	242,757	8,139	0.02	54.2
Other	35,606	11,939	2.98	82,981	12,388	6,543	172,322	5,783	0.02	27.2
Poultry	35,497	7,733	4.59	98,844	2,797	1,534	80,597	1,523	0.00	32.3
Citrus Fruits	27,544	5,886	4.68	65,145	6,392	4,045	114,355	9,471	-0.01	39.0
Open Field Vegetables	57,435	9,656	5.95	109,927	22,290	8,926	221,115	8,717	0.00	34.8
Fruits in Shell	28,272	2,908	9.72	3,838	219	3,750	58,413	-179	0.06	42.9
Intensive Beef Cattle										0.0
TOTAL	11,414	8,762	1.30	76,789	15,010	5,592	107,373	-1,630	-0.01	37.5

<i>Processing worse than simple farming</i>	FCFE	DEPR	F/D	AMOC	INVES	CAP II	GSP	DWCC	ROI	%N
Mixed Crops and Livestock	-30,766	4,162	-7.39	50,886	13,321	1,401	38,041	-759	-0.12	48.0
Extensive Beef Cattle	-17,789	4,285	-4.15	32,949	5,524	1,766	38,418	-1,616	-0.09	35.6
Mixed Crops	-20,487	9,369	-2.19	91,870	18,435	1,588	30,619	-3,812	-0.17	42.7
Mixed Fruits	-13,401	3,499	-3.83	32,768	4,228	989	27,011	-784	-0.16	41.7
Arable Crops	-14,127	6,130	-2.30	62,271	7,419	1,776	36,535	-108	-0.14	51.4
Sheep	-12,270	14,348	-0.86	85,963	7,892	3,407	41,673	-1,627	-0.09	46.7
Dairy Cattle	-21,153	24,952	-0.85	282,835	22,067	14,251	102,464	-10,187	-0.03	44.4
Vineyards	-24,222	6,449	-3.76	51,764	15,298	2,139	53,581	-6,794	-0.11	39.6
Mixed Livestock	-23,110	3,962	-5.83	47,854	9,918	2,213	26,977	-1,301	-0.08	45.7
Greenhouse Vegetables	-19,794	1,997	-9.91	8,296	406	0	58,705	569	-0.10	27.8
Olive Growing	-11,929	1,032	-11.56	13,684	5,385	1,698	12,250	2,167	-0.72	9.6
Swine	-38,069	20,761	-1.83	230,148	46,772	2,109	160,185	2,501	-0.06	37.5
Other	-17,727	5,854	-3.03	47,832	12,962	862	50,489	-733	-0.08	56.3
Poultry	694	15,298	0.05	201,017	16,952	2,256	36,209	5,410	-0.02	41.5
Citrus Fruits	-5,130	4,089	-1.25	29,133	1,843	973	48,743	191	-0.08	40.4
Open Field Vegetables	1,764	9,804	0.18	75,356	3,663	7,373	96,405	-3,077	-0.10	58.5
Fruits in Shell	-1,818	70	-25.98	106	25	0	18,359	0	-0.16	14.3
Intensive Beef Cattle	-20,623	8,736	-2.36	74,741	10,050	3,116	70,165	-6,733	-0.05	100.0
TOTAL	-16,819	7,773	-2.16	73,071	10,756	2,772	46,686	-2,456	-0.13	41.5

<i>Selling better than simple farming</i>	FCFE	DEPR	F/D	AMOC	INVES	CAP II	GSP	DWCC	ROI	%N
Mixed Crops and Livestock	35,287	7,037	5.01	74,201	156	3,464	123,840	2,181	0.00	16.7
Extensive Beef Cattle	45,472	6,787	6.70	23,718	5,356	4,513	98,766	9,022	0.02	15.4
Mixed Crops	48,920	6,080	8.05	48,530	983	4,791	147,406	-1,565	0.04	19.7
Mixed Fruits	99,538	9,407	10.58	67,452	5,219	6,639	311,843	-261	0.03	23.6
Arable Crops	57,363	10,489	5.47	100,370	8,764	7,837	155,844	2,277	0.00	16.8
Sheep	93,209	22,328	4.17	116,462	8,212	5,513	241,199	4,961	0.05	21.8
Dairy Cattle	79,037	12,365	6.39	108,252	11,794	12,155	203,553	6,852	0.05	19.4
Vineyards	102,697	18,920	5.43	103,390	25,351	5,488	278,632	-1,037	0.04	19.4
Mixed Livestock	46,498	5,996	7.76	40,998	3,541	2,829	82,530	1,758	-0.01	33.3
Greenhouse Vegetables										0.0

Olive Growing	42,654	8,014	5.32	83,858	4,107	5,035	74,964	8,167	-0.08	36.3
Swine										0.0
Other	49,953	4,162	12.00	30,663	1,804	4,469	180,961	-1,480	0.05	16.9
Poultry	161,001	24,526	6.56	259,482	20,481	74	678,060	20,830	0.11	21.4
Citrus Fruits										0.0
Open Field Vegetables	194,439	9,224	21.08	24,137	3,369	1,387	352,758	2,538	0.10	13.5
Fruits in Shell										0.0
Intensive Beef Cattle										0.0
<i>TOTAL</i>	<i>74,090</i>	<i>11,319</i>	<i>6.55</i>	<i>81,060</i>	<i>8,886</i>	<i>5,867</i>	<i>200,362</i>	<i>2,534</i>	<i>0.03</i>	<i>13.4</i>

Selling <i>alternating</i> over <i>simple farming</i>	FCFE	DEPR	F/D	AMOC	INVES	CAP II	GSP	DWCC	ROI	%N
Mixed Crops and Livestock	4,607	19,509	0.24	247,712	21,364	8,659	102,997	5,499	0.00	40.3
Extensive Beef Cattle	-3,772	15,679	-0.24	143,830	21,522	9,174	80,176	1,901	-0.03	47.4
Mixed Crops	627	7,283	0.09	73,373	11,085	6,722	72,529	1,919	-0.01	51.5
Mixed Fruits	-4,144	9,923	-0.42	82,349	17,562	4,156	78,367	1,076	-0.02	34.5
Arable Crops	220	7,754	0.03	92,019	7,242	5,674	67,567	-858	-0.03	29.7
Sheep	15,267	14,061	1.09	83,027	12,610	13,965	91,058	-3,390	-0.02	37.9
Dairy Cattle	15,707	17,615	0.89	115,054	18,623	15,793	154,130	-1,080	0.00	32.7
Vineyards	12,873	14,236	0.90	152,928	25,930	2,989	123,473	-6,559	0.01	42.6
Mixed Livestock	6,127	7,771	0.79	76,646	4,548	5,763	63,373	-689	0.00	46.7
Greenhouse Vegetables	-4,362	10,754	-0.41	187,712	25,215	0	168,187	-16,972	0.01	66.7
Olive Growing	-6,734	3,398	-1.98	30,025	6,773	5,150	28,368	1,733	-0.18	52.7
Swine	121,918	36,840	3.31	445,716	27,693	0	251,157	28,730	0.03	38.5
Other	32,057	6,662	4.81	64,538	12,007	7,889	157,321	26,134	0.02	25.3
Poultry	32,180	8,342	3.86	86,852	5,633	0	85,363	557	0.07	42.9
Citrus Fruits	29,781	5,581	5.34	108,196	5,901	3,713	171,767	2,741	0.02	59.1
Open Field Vegetables	133,639	9,781	13.66	158,482	24,991	19,066	209,821	21,826	-0.01	25.0
Fruits in Shell										0.0
Intensive Beef Cattle										0.0
<i>TOTAL</i>	<i>9,991</i>	<i>11,094</i>	<i>0.90</i>	<i>112,224</i>	<i>15,716</i>	<i>6,768</i>	<i>97,772</i>	<i>913</i>	<i>-0.01</i>	<i>38.9</i>

Selling <i>worse</i> than <i>simple farming</i>	FCFE	DEPR	F/D	AMOC	INVES	CAP II	GSP	DWCC	ROI	%N
Mixed Crops and Livestock	-38,334	4,625	-8.29	74,060	21,312	1,353	32,919	2,468	-0.10	43.1
Extensive Beef Cattle	-20,787	4,480	-4.64	38,884	8,490	2,845	40,152	-2,870	-0.10	37.2
Mixed Crops	-23,301	14,588	-1.60	143,512	15,459	785	42,938	1,432	-0.11	28.8
Mixed Fruits	-16,718	5,026	-3.33	52,699	5,905	1,581	32,579	-4,254	-0.11	41.9
Arable Crops	-12,714	6,106	-2.08	58,620	8,409	2,195	43,063	1,480	-0.08	53.4
Sheep	-13,503	20,539	-0.66	83,448	9,164	6,633	45,650	-1,265	-0.07	40.2
Dairy Cattle	-23,088	39,004	-0.59	505,291	30,591	20,348	159,536	-17,221	-0.02	48.0
Vineyards	-26,399	6,910	-3.82	63,210	14,062	2,123	71,003	-7,539	-0.06	38.0
Mixed Livestock	-15,415	3,513	-4.39	41,835	3,207	1,080	20,246	-436	-0.07	20.0
Greenhouse Vegetables	-97,845	8,949	-10.93	90,302	86,673	0	52,271	-789	-0.07	33.3
Olive Growing	-12,421	1,736	-7.15	39,410	8,004	2,295	15,975	2,542	-0.23	11.0
Swine	-14,009	4,143	-3.38	53,040	472	0	95,932	-14,341	-0.08	61.5
Other	-21,773	4,463	-4.88	52,850	13,770	637	65,308	-2,486	-0.07	57.8
Poultry	-20,796	4,459	-4.66	62,483	3,657	394	101,142	-6,458	-0.08	35.7
Citrus Fruits	-597	5,124	-0.12	46,463	141	1,358	83,520	81	-0.03	40.9
Open Field Vegetables	-9,758	6,521	-1.50	56,911	3,699	3,409	51,962	-514	-0.11	61.5
Fruits in Shell										0.0

Intensive Beef Cattle	-4,999	16,758	-0.30	166,096	6,388	2,163	126,560	-813	-0.03	100.0
<i>TOTAL</i>	-19,564	9,891	-1.98	101,629	12,343	3,594	59,592	-3,133	-0.08	41.5

<i>Quality better than simple farming</i>	FCFE	DEPR	F/D	AMOC	INVES	CAP II	GSP	DWCC	ROI	%N
Mixed Crops and Livestock										0.0
Extensive Beef Cattle	15,209	7,518	2.02	2,166	7,601	11,000	38,631	1,766	-0.03	11.1
Mixed Crops	192,871	27,399	7.04	190,015	1,103	8,943	501,130	-3,392	-0.03	18.2
Mixed Fruits	47,970	10,407	4.61	42,141	11,370	5,263	129,228	3,026	0.01	23.1
Arable Crops	59,543	4,271	13.94	30,696	166	6,920	166,162	333	0.02	37.3
Sheep										0.0
Dairy Cattle	36,092	15,578	2.32	36,714	0	0	221,359	27,069	0.00	3.7
Vineyards	26,027	5,422	4.80	26,669	13,031	4,845	75,352	2,660	-0.07	8.1
Mixed Livestock	37,945	5,186	7.32	84,275	3,997	4,880	182,175	22	0.00	100.0
Greenhouse Vegetables										0.0
Olive Growing	28,106	4,756	5.91	31,899	2,606	4,326	79,933	3,562	-0.01	61.1
Swine										0.0
Other										0.0
Poultry										0.0
Citrus Fruits	11,382	1,126	10.11	52	0	6,000	52,523	1,912	-0.31	25.0
Open Field Vegetables	11,133	1,417	7.86	19,101	1,545	0	41,033	29	0.09	16.7
Fruits in Shell	20,227	626	32.31	0	0	0	48,803	-262	0.06	0.0
Intensive Beef Cattle										0.0
<i>TOTAL</i>	46,217	6,872	6.73	41,423	5,199	5,312	132,653	2,189	-0.02	19.5

<i>Quality alternating over simple farming</i>	FCFE	DEPR	F/D	AMOC	INVES	CAP II	GSP	DWCC	ROI	%N
Mixed Crops and Livestock	125,751	22,201	5.66	240,691	8,127	2,691	118,021	63,436	0.10	33.3
Extensive Beef Cattle	-21,557	13,448	-1.60	41,514	111	19,373	63,367	-11,508	-0.03	44.4
Mixed Crops	2,914	5,055	0.58	47,622	4,142	8,960	51,327	-925	-0.03	50.0
Mixed Fruits	-23,707	13,275	-1.79	145,448	63,341	3,119	108,437	8,922	-0.03	41.5
Arable Crops	4,981	4,064	1.23	54,145	7,018	4,438	56,443	2,780	-0.06	37.3
Sheep	49,173	7,746	6.35	49,055	1,221	7,326	107,976	9,335	-0.03	100.0
Dairy Cattle	-175,232	28,851	-6.07	280,639	210,096	64,672	116,180	-11,380	-0.02	11.1
Vineyards	-914	6,345	-0.14	69,216	27,918	928	78,265	-9,769	0.01	45.0
Mixed Livestock										0.0
Greenhouse Vegetables	122,678	60,799	2.02	419,479	17,667	0	359,083	3,897	0.15	100.0
Olive Growing	-6,572	4,817	-1.36	21,661	15,822	6,380	52,196	-59	-0.35	27.8
Swine										0.0
Other	44,401	8,571	5.18	8,025	17,449	0	761,955	3,593	0.08	25.0
Poultry	-1,599	0		0	166	0	261,351	3,218	-0.02	0.0
Citrus Fruits	5,680	1,755	3.24	12,835	0	1,500	42,782	-893	0.00	25.0
Open Field Vegetables	112,228	7,696	14.58	65,191	4,999	15,734	264,272	24,885	0.04	41.7
Fruits in Shell										0.0
Intensive Beef Cattle										0.0
<i>TOTAL</i>	2,868	8,917	0.32	85,271	28,871	4,770	103,062	-625	-0.02	39.5

<i>Quality worse than simple farming</i>	FCFE	DEPR	F/D	AMOC	INVES	CAP II	GSP	DWCC	ROI	%N
Mixed Crops and Livestock	-40,620	8,060	-5.04	116,804	26,607	2,615	45,815	-1,637	-0.02	66.7
Extensive Beef Cattle	-8,802	2,948	-2.99	17,765	1,836	3,929	20,100	-665	-0.18	44.4

Mixed Crops	-9,655	2,392	-4.04	31,950	1,015	1,889	20,353	-489	-0.39	31.8
Mixed Fruits	-48,012	7,367	-6.52	68,521	50,730	1,171	72,980	1,249	-0.06	35.4
Arable Crops	-15,208	1,874	-8.12	27,857	3,053	1,051	21,169	-4	-0.06	25.5
Sheep										0.0
Dairy Cattle	-19,023	36,746	-0.52	538,991	67,693	26,983	237,489	-12,790	-0.02	85.2
Vineyards	-42,756	5,680	-7.53	36,530	41,608	927	60,935	-2,871	-0.06	46.9
Mixed Livestock										0.0
Greenhouse Vegetables										0.0
Olive Growing	-9,662	163	-59.46	676	135	7,174	9,261	-358	-1.64	11.1
Swine										0.0
Other	-79,015	25,764	-3.07	245,432	92,080	1,777	294,073	-64,573	-0.01	75.0
Poultry										0.0
Citrus Fruits	-3,535	4,852	-0.73	32,999	4,715	0	92,400	6,772	-0.02	50.0
Open Field Vegetables	-4,704	31,944	-0.15	237,877	32,417	4,251	355,549	-3,144	-0.01	41.7
Fruits in Shell										0.0
Intensive Beef Cattle	-43,921	7,617	-5.77	36,872	57,418	1,617	165,490	9,123	-0.05	100.0
<i>TOTAL</i>	-35,660	11,303	-3.16	124,412	41,558	4,863	101,302	-6,058	-0.21	40.9

<i>Farmhouse better than simple farming</i>	FCFE	DEPR	F/D	AMOC	INVES	CAP II	GSP	DWCC	ROI	%N
Mixed Crops and Livestock	49,983	7,658	6.53	84,241	2,807	1,406	107,202	-499	0.04	15.6
Extensive Beef Cattle	107,815	20,280	5.32	107,942	16,347	8,544	378,880	-7,073	0.02	26.3
Mixed Crops	26,066	927	28.12	8,842	1,211	7,410	107,226	-3,954	0.01	5.3
Mixed Fruits	38,252	6,127	6.24	118,149	7,232	2,794	66,355	-1,215	0.04	13.5
Arable Crops	59,830	7,684	7.79	144,572	15,041	13,981	93,245	-4,904	0.01	19.3
Sheep	261,716	58,210	4.50	276,053	20,478	17,014	662,378	6,050	0.03	40.0
Dairy Cattle	50,293	20,315	2.48	188,155	17,720	28,265	107,586	11,629	0.00	6.2
Vineyards	143,257	18,216	7.86	125,046	9,352	3,561	341,652	-50,443	0.07	7.0
Mixed Livestock	44,940	9,433	4.76	137,639	2,510	2,841	44,754	695	0.02	50.0
Greenhouse Vegetables										0.0
Olive Growing	7,107	8,913	0.80	125,718	2,291	6,944	31,462	1,726	-0.03	73.3
Swine										0.0
Other	141,020	18,546	7.60	274,564	12,067	170	245,407	15	0.08	41.7
Poultry										0.0
Citrus Fruits										0.0
Open Field Vegetables										0.0
Fruits in Shell										0.0
Intensive Beef Cattle										0.0
<i>TOTAL</i>	70,640	14,907	4.74	142,460	9,187	8,668	171,327	-2,907	0.03	17.2

<i>Farmhouse alternating over simple farming</i>	FCFE	DEPR	F/D	AMOC	INVES	CAP II	GSP	DWCC	ROI	%N
Mixed Crops and Livestock	3,293	25,083	0.13	372,873	29,246	10,591	132,646	3,529	0.01	60.0
Extensive Beef Cattle	-5,787	17,719	-0.33	143,984	20,068	12,585	103,071	-3,036	-0.02	52.6
Mixed Crops	3,753	7,523	0.50	98,239	7,717	5,268	40,742	5,328	0.01	63.2
Mixed Fruits	-10,534	27,722	-0.38	280,899	46,421	2,188	109,643	5,422	0.00	37.8
Arable Crops	10,323	14,586	0.71	168,903	13,273	11,008	118,242	2,503	-0.03	33.3
Sheep	62,237	36,748	1.69	146,030	92	23,333	67,419	1,860	0.00	20.0
Dairy Cattle	-15,110	20,433	-0.74	380,562	63,411	10,528	127,419	12,472	0.01	23.7
Vineyards	15,204	15,159	1.00	201,807	26,725	2,057	110,558	-23,815	0.01	62.0
Mixed Livestock	57	10,535	0.01	97,329	3,796	7,089	25,627	-2,911	-0.01	41.7

Greenhouse Vegetables										0.0
Olive Growing	-8,316	1,612	-5.16	4,956	276	2,930	33,794	-120	-0.29	20.0
Swine	-8,855	1,853	-4.78	15,738	1,082	357	104,530	-4,545	-0.02	50.0
Other	22,456	1,943	11.56	26,156	9,904	19	159,023	-5,203	0.08	33.3
Poultry										0.0
Citrus Fruits										0.0
Open Field Vegetables	41,056	7,097	5.79	173,061	14,071	138	55,430	16,973	0.10	40.0
Fruits in Shell										0.0
Intensive Beef Cattle										0.0
TOTAL	9,991	11,094	0.90	112,224	15,716	6,768	97,772	913	-0.01	42.1

<i>Farmhouse worse than simple farming</i>	FCFE	DEPR	F/D	AMOC	INVES	CAP II	GSP	DWCC	ROI	%N
Mixed Crops and Livestock	-38,318	8,179	-4.68	144,514	28,072	1,474	15,361	-495	-0.18	24.4
Extensive Beef Cattle	-11,946	1,968	-6.07	14,096	1,697	3,379	16,722	-3,706	-0.14	21.1
Mixed Crops	-56,520	74,737	-0.76	752,915	59,157	4,630	80,847	-96,498	-0.19	31.6
Mixed Fruits	-49,275	16,497	-2.99	244,037	78,449	689	71,227	-10,382	-0.01	48.6
Arable Crops	-10,529	27,052	-0.39	424,340	8,171	3,452	55,426	-3,555	-0.07	47.4
Sheep	-20,992	144,062	-0.15	337,282	37,894	18,848	151,222	-21,282	-0.04	40.0
Dairy Cattle	-59,479	18,757	-3.17	324,263	76,349	9,700	73,979	5,278	-0.01	70.1
Vineyards	-39,324	14,267	-2.76	178,816	21,264	1,334	135,022	-8,476	-0.03	31.0
Mixed Livestock	-411,154	2,993	-137.37	443,043	396,241	588	7,831	3,001	-0.03	8.3
Greenhouse Vegetables										0.0
Olive Growing	-19,688	1,619	-12.16	71,543	35,615	9,272	10,903	11,799	-0.19	6.7
Swine	-17,262	1,811	-9.53	9,367	1	0	5,320	-736	-0.27	50.0
Other	-23,333	15,840	-1.47	351,705	10,590	0	27,534	-23,596	-0.02	25.0
Poultry										0.0
Citrus Fruits										0.0
Open Field Vegetables	-28,544	5,396	-5.29	90,163	20,090	57	30,692	913	-0.02	60.0
Fruits in Shell										0.0
Intensive Beef Cattle	-6,447	8,521	-0.76	51,330	13,644	6,124	126,006	-4,896	-0.04	100.0
TOTAL	-42,442	25,121	-1.69	305,184	47,696	5,402	72,568	-10,259	-0.09	40.7