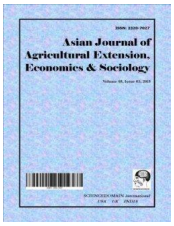

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Comparative Analysis of the Agriculture Land Price Assessment in Albania

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Authors' contributions

This work was carried out in collaboration between all authors. Author AT has written the first draft of manuscript based on the study methodology. The methodology of the study has been prepared by author BM as part of Alda's Ph.D. thesis. Authors AK and AD helped find the literature and compile graphs of comparing agricultural land prices, while author EV has played a role in graphical presentation of the GIS maps of study regions and statistical analyzes. Authors JM and SS have made a review of the document in the scientific and linguistic plan. All authors read and approved the final manuscript.

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ABSTRACT

The common worldwide practice for agricultural land valuation is based on average market prices of the similar plots, close to the land being evaluated. However, the land valuation based on average market prices requires the functioning of a well-developed market for land sale/purchase transactions. Several reasons have limited the number of transactions which could serve as a base for setting a price for agricultural, pasture and forest land in many parts of Albania. In the absence of a land market, during a period of time (between 1990 and 2012), it was advisable to apply indirect land evaluation methodologies in the country. The principle of this method is net profit capitalization

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for which some parameters need to be calculated. The profit was calculated based on the yield, the cost of production and income of the unit surface. The direct land valuation method which is more commonly used in Albania since 2012, is based on the market value – a method used in developed countries where the high number of transactions and relative transparency of price are considered the most important. This study is focused in finding the differences and gaps between the direct and indirect methods of land valuation taking into account the numerous variables of climate and land, including the land use, agronomic potential expressed in the categories of land, commodity agricultural prices, rent, yield, crop structures, social issues and economic policies.
To find the gaps and the advantages of different methods of land price in Albania this survey analyzed and compared the prices based on three well known international methods: directly-based on market price method, indirectly-based on ground rent and net profit capitalization.
Comparing the values between regions the three methods showed many differences; the value of agricultural land prices were higher in Fier and Korça while it was lower in Berat according to net profit and rent capitalization methods. Farmland prices were the highest when market price method was applied, followed by rent capitalization method and lower for net profit method. The values according to three methods were higher than average land prices in the EU countries. The land values in Albania varied between 20,000 and 37,000 Euros ha^{-1}.

Keywords: Albania; land valuation; agro climatic zones; rent capitalization; net profit; market price.

1. INTRODUCTION

The value of agricultural land is often considered as the price of land. It is expressed through the ability of land for agricultural production and is conditioned by both internal (biological, chemical and physical attributes) and external factors (climate, cultivation techniques and technologies). The price of agricultural land is based on market demand and offer at a particular point of time. In a market economy, agricultural land will profit its exchange value through its production potential [1].

When the market is missing or weakly developed, an alternative method needs to be applied and there are two basic questions such as: what determines the agricultural land price? How to determinate the reference price? These questions have been raised for more than 200 years from economists in developed countries and have also been an important research topic in agricultural economics throughout the last decades [2,3].

Economists believe that the most important factors that influence the price of agricultural land are those that have the greatest weight in a transaction purchase/sale case (over a settled period of time). Contrary, for agronomists, the price of agricultural land is determined by the ability to produce seeing that the link between price and the capacity of soil is stable over time, independent of products price on the market. Analyzing the prices of agricultural land in EU countries, according to Swinnen et al. [4] the key drivers of farmland sales prices are agricultural commodity prices, infrastructural expansion, urban pressures, the subsides, farm size and coupled subsidies. According to the same authors the role of agricultural productivity is weaker in driving agricultural land prices. On average, the agricultural productivity impact on agricultural land values is negligible to weak. According to the FAO (2003) the inherent production potential and destination (or option) of use, and a combination or derivation of them, are two main determinants of the value and price of land. In addition to these underlying factors, supply and demand and the perception of future benefit also affect the price formation of land in a functional market.

The price of land in countries with developed market is based on demand and offer of the free market. For different purposes and for full coverage of agricultural land, some countries have indirectly developed methods to approach the price in terms of sale/purchase transactions of land. The determination of the market price of land is derived from three basic attitudes creating the basis of the current method of land evaluation: the cost method, the comparison method and the income method [5]. New studies have analyzed links that exist between economic variables and the price of agricultural land such as income, rent of land and other factors e.g. subsidies which provide effective validating/calibrating methods for determining the price of agricultural land [6,7,8,9]. Other studies analyzing the determinants of land sale prices either refer to the net present value (NPV)

method or to the hedonic pricing approach as a base of their work [10].

Albania enjoyed only a short period of time (1928-1939) during the XX century where the conditions of free market enabled several thousands of transactions in agricultural land. In the remaining period of the twentieth century the free market was abolished in Albania and consequently the sale/purchase events of agricultural land were inexistent. During the last century there were three reforms on agricultural land in Albania: (i) the first agrarian reform in 1945 which spread equal plots of land between the villagers, (ii) nationalization and collectivization of land in the period of time from 1953 to 1967 and (iii) redistribution of land in equal parts by number of resident in rural households [11]. Under such conditions even after the major political changes in the 1990s until now, the transactions are small in number, and the transaction values are unrealistic (with large deformations) due to false declaration of value.

In the absence of reliable values from the free market transactions during the last decade in Albania, two methods have been applied to land valuation. For the period from 2005 until 2013 the net profit capitalization method [12]. FAO was used as reference value in case of expropriation surfaces for the purpose of public works construction [13]. The application of this method in Albania was modified adding the soil categorization [14,15]. Since 2013 the value of land based approach on free market was applied based on the decision of the Council of Ministers. This method defines the methodology of the data analysis from the sale of land (all types of land: agriculture, pastures, forests and urban land) in all Albania's regions [16].

The basic hypothesis is based on whether the application of the two indirect methods for land valuation – namely ground rent and capitalization rate – provide accurate values for the price of agricultural land, or does the market price ignore the fertility of soils and is more prone to socio-economic status and development level of a country.

The contribution of the authors in this paper consists in pinpointing the issues and problems that associate the indirect methods of agricultural land valuation through a comparative analysis of land in three eco-climatic regions of Albania, collaborative work in reviewing results and arriving to commonly accepted conclusions. The results reported in the present study are subject to certain limitations [17]. First of all, as in any empirical analysis, one should keep in mind data limitations when interpreting the presented results presented. In particular, data on land transactions are scarce for the period when the study is carried.

2. METHODOLOGICAL APPROACH

From the three climate and terrestrial locations in central Albania, three indirect methods of calculations were selected for the calculation of the value of agricultural land (Fig. 1).

All the methods below have served mainly to compensate the value of land in case of construction of infrastructures with high public interest and application of expropriation [18].

1. The first method of calculation is based on several elements of the land value which is applied in the absence of a developed market for land transactions.

The principle of this method consists in calculating the price of agricultural land based on the capitalization of net profit on certain climate conditions, land, infrastructure level, and used technologies. In fact, the net profit is related directly through two land key features, namely land capability and suitability, which determinate the net profit.

The land suitability is assessed and classified with respect to specified kinds of use. This principle embodies recognition of the fact that different kinds of land use have different requirements. The areas in the study show that two crops prevail different incomes: olive for Mediterranean and hilly areas (Fier and Berat, respectively) and apples for the continental Mediterranean areas (Korça).

The net profit is calculated (income - costs) in Euros, according to the main categories of land types divided into two sub groups: with irrigation and without irrigation. The net profit is calculated as sum of net profit for each crop individually and multiplied with the percentage of the crops in a specific area, according to the formula:

$$\textit{Net Profit} = [(\textit{net profit of crop}_1 \times \textit{Percentage of crop}_1) + (\textit{net profit of crop}_2 \times \textit{Percentage of crop}_2) + (\textit{net profit of Crop}_n \times \textit{Percentage of Crop}_n)]$$

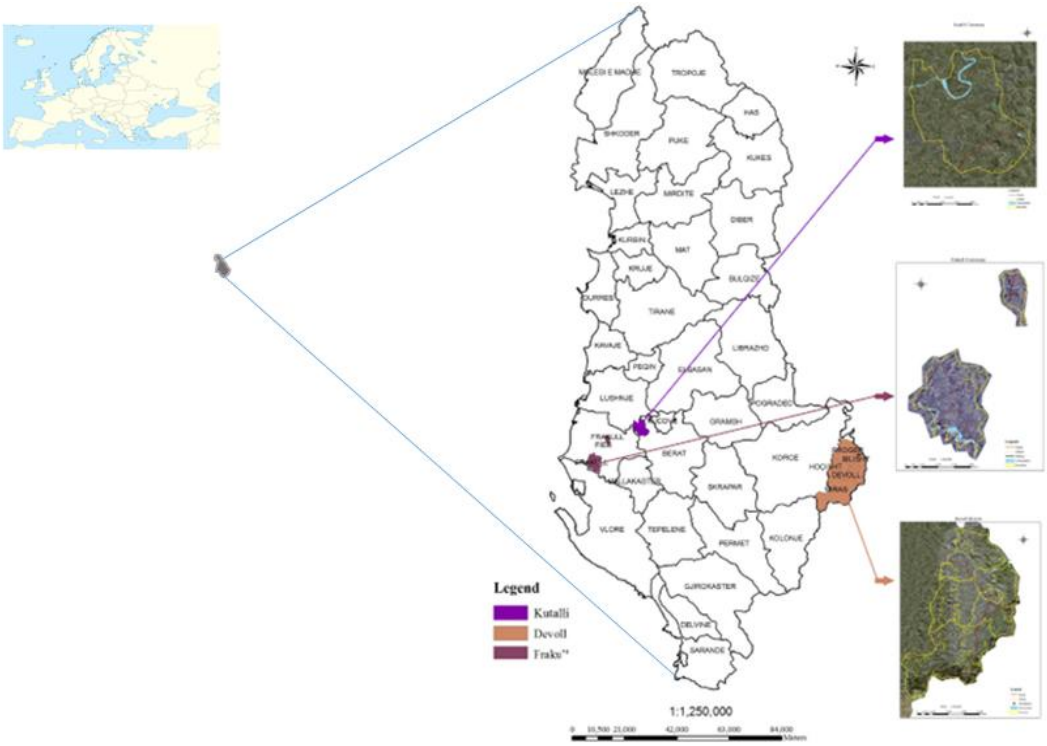


Fig. 1. Map of three terrestrial locations in central Albania

The land values are calculated by using the following formula:

*Land value = [(100*Net Profit)/% of Bank interest]*

2. The second indirect method for calculation of agricultural land price was that of rent capitalization [19,20] the so called *Ground Rent Capitalization Method*. This method is used when the land rent and market price of land are available. For calculation of land price, we use the following formulas:

Capitalization rate (MK) = Land rent/Market price of land

Market price of land = (Land rent – Land tax) / Capitalization rate

Land rent = Market price of land. Capitalization rate + Land tax

In fact, this calculation is based on the relationship that exists between rent and prices and the study was conducted by analyzing data from the EU countries. This approach is taken bearing in mind the very few data available on land rent and the market price of agricultural land for areas of central Albania to calculate the capitalization rate through transposing in our study areas (that do not have data on market price) through its recalculation. It is emphasized that rent in the three analyzed regions is presently much higher than the price because the agricultural land is not sold but due to large demographic movements (migration and immigration) the land left without the opportunity to be used by the owners was annually rented over for a period of more than one year.

3. The third method of calculation is based on the calculations of the average price of agricultural land transactions. Decisions of Council of Ministers of Albania No. 658, on data 26.9.2012 "*On approval of methodology of immoveable proprieties evaluation in Republic of Albania*" [21] establishes that the determination of the price of agricultural land is based on the data collected by the sale purchases in the "Immovable Proprieties Registration Office (IPRO)" in each of the 12 regions of Albania. For each region it's calculated (i) the minimum and maximum price sales contracts for each category of property in the cadastral area; (ii) the calculation of the average sale contracts for a specific category of property in the relevant cadastral area; (iii) ignore the top 5% highest and lowest contracts (if after

this exclusion the immovable property value cannot be calculated, it is followed by excluding the values 10% lowest and highest of sales contracts); (iv) the mode is calculated for each category of property in a cadastral area, according to the total number of contracts (mode is the value that is mostly repeated); (v) the price of the unit surface (in m^2) for each cadastral area.

3. RESULTS

The three surveyed agricultural land areas belong to the Mediterranean climatic condition (Fier), Sub-continental Mediterranean climate (Berat), Continental Mediterranean climate (Korça) and were respectively 2553 and 3478 and 2310 hectare (Table 1). For the three areas, the Arenosol soil types occupied larger areas with approximately 30% of the total area of agricultural land, followed by the Fluvisolet types and Luvisol. Being suitable for most crop cultivation, the Arenosol and Fluvisol soils are generally part of the I^{st}, II^{nd} or III^{rd} category according to capability and suitability classification. The other lands belong to the categories higher than III^{-rd} and have lower potential production compared with Arenosol and Fluvisolet soils. The Cambisols and Regosols soils are the lowest productive lands in the surveyed areas, limited by the erosion phenomenon on high scale, low content of macro-elements nutrients, and inappropriate drainage. Usually they have a large slope and relatively not deep profile.

3.1 Soil Price by Three Methods

3.1.1 Net profit capitalization method

The agricultural land prices according to the net profit capitalization method were calculated based on five main crops in the abovementioned zones, according to the efficiencies realized over a 10 year period (2004-2014) and local markets prices on administrative centers (Fier, Berat and Korça) for 2014. The level of Bank Interest ratio was 2.35% [22]. Data calculated on this basis are presented in Table 2.

Variations in net profit and agriculture land prices (in Euro), for all land categories are grouped in this order: Fier > Korça > Berat. Lower prices were observed in Berat and the land relations between the first group and second group for three zones were 1.6; 1.8 and 1.9 for Berat, for Korça and for Fier respectively.

3.1.2 Ground rent capitalization method

In the absence of land transactions in study areas the ratio between rent and price were observed in the border regions which lands were similar from fertility point of view in all regions in the study. This requires rather large information about the land purchase and lease transactions. The central area of Albania (Tirana, Durres, Lushnja) due to greater development, density of population and business interest was considered the reference area for finding the rent/price ratio (Table 3). Due to the limited data calculated in our study area, grouping all available land categories in two groups of agriculture land: the first group comprising categories from I to III (high productivity) with irrigation and without irrigation and the second group comprising categories from IV to X (low productivity) with irrigation and without irrigation and natural pastures. The data for the central regions of Albania are obtained by Immovable Proprieties Registration Office [23].

Based on the rent/price ratio for already carried out transactions in the central part of Albania and rent data by the study areas, the agricultural land prices according to three groups are provided in the table below (Table 4).

The rent/price Ratio ranges from 0.8 to 2.5 for all group categories of agriculture land and pastures. The highest value of this ratio is on agricultural lands without irrigation while for the same category of irrigated agriculture land the values were 50% and 25% lower for the lands of the first and second group respectively. The value of rent for the same agriculture land category is not differentiated between with and without irrigation conditions, thus reducing the value of the rent/price ratio.

3.2.3 Direct market value method

Based on the data of immovable property values [24], a method which is based on the land market price for the study areas, the agricultural land and pasture values are presented in the table below (Table 5). In these figures there is no separate value for irrigated and not irrigated land due to the small number of transactions.

Table 1. The three studied areas the agricultural land surfaces (Fier, Berat and Korça) pursuant the type of soils

Locations/ parameters	Mbrostar (Fieri region)				Kutalli (Berati region)				Devoll (Korça region)			
Dominant Type soils	Arenosol	Fluvisol	Vertisol	Luvisol	Arenosol	Fluvisol	Cambisol	Regosol	Arenosol	Fluvisol	Luvisol	Cambisol
Surface according each soil	1120	432	128	630	934	813	604	202	1430	947	413	688
Profile depth (in cm)	120-150	>150	>150	100-120	120-150	120-150	70-120	-90	-120	120-150	-120	-100
Slope (in %)	1-6	1-12	1-6	1-18	1-6	1-12	6-12	6-18	1-6	1-12	6-12	6-12
Irrigation (in % of total surface)	72	56	60	18	65	52	22	16	100	85	32	16
Drainage (three class*)	Perfectly	Moderate	Imperfectly	Moderate	Perfectly	Moderate	Perfectly	Imperfectly	Perfectly	Moderate	Moderate	Perfectly
Grit/gravel (average % in soil profile)	1-10	1-5	1-5	1-15	1-10	1-5	1-20	1-20	1-10	1-5	1-10	1-20
pH (KCl)	7.2	6.5	6.6	7.4	7.1	6.6	6.4	6.6	7.6	6.5	7.2	6.8
Total C g kg^{-1} soil	52.1±8.3	62.7±10.2	71.7±14.7	45.3±8.8	48.7±9.1	55.2±7.9	36.6±4.8	28.8±10.2	76.3±14.3	77.8±16	89.8±22	39.5±6.8
Total N g kg^{-1} soil (average)	2.32	2.23	2.74	1.61	1.86	2.02	1.27	0.97	3.74	3.87	3.44	1.62
Total P mg kg^{-1} soil	725	614	872	574	458	614	504	411	812	867	889	514

**. According the Soil Science Institute of Albania the drainage is categorized in three classes: imperfectly, moderate and perfectly or III, II and I.*

Table 2. Agricultural soil price (Euro/ha^{-1}/y^{-1}) calculated according Net profit capitalization method

Soil group categories	Fier		Berat		Korça	
	Net profit	Price ha^{-1}	Net profit	Price ha^{-1}	Net profit	Price ha^{-1}
I-III	634	26,979	432	18,383	532	22,638
III-X	326	13,872	267	11,362	288	12,255
Pasture	138	5,872	96	4,085	117	4,978
Average price		15,574		11,277		13,291

Table 3. Assessment of ratio rent/price in the central Albania area with the available data

Category group soil	Samples (*n*)	Where	Price (in euro)	Rent	Ratio Rent/Price
I-III	36	Tirana, Durres	14,785.00	342	2,3
I-III Irrigated	42	Tirana, Durres, Lushnje	18,950.00	230	1,2
III-X	18	Kruje, Tirana	12,422.00	309	2,5
III-X Irrigated	7	Tirana, Lushnje	11.370.00	212	1,9
Pastures	29	Korçe	4,318.00	34	0,8

Table 4. Agricultural soil price according the ground rent capitalization

Category group soil	Ratio rent/price	1) Mediterranean weather (Fier)		(2) Mediterranean Sub-continental (Berat)		(3)Mediterranean Continental(Korça)	
		Rent	Price (capitalization rent)	Rent	Price (capitalization rent)	Rent	Price (capitalization rent)
I-III	2,3	294	12710	244	10548	282	12191
I-III Irrig	1,2	321	26448	290	23893	323	26612
III-X	2,5	270	10809	220	8807	210	8407
III-X Irrig	1,9	278	14978	234	12607	265	14278
Pastures	0,8	42	5334	28	3556	19	2413

Table 5. Agricultural land prices according to the figures of immovable proprieties in Albania (March 2013)

Soil group categories	Fier	Berat	Korça
I-III	37,600	19,700	29,300
III-X	24,640	12,100	24,400
Pasture	19,300	7,500	13,600
Average Price	27,180	13,100	22,433

Although the values presented on the register maintain the same rankings among the regions, compared to other methods, as between categories of land within regions were less differentiated. In Fier the values on the land of the second group were 35% lower compared to the values of the first group, while this difference was approximately 39% on Berat and 17% on Korça.

4. DISCUSSION

4.1 Direct Method *versus* Ground Rent Capitalization Method

The price comparison for agricultural land and pastures according to direct market method and indirect ground rent capitalization method, indicated that in Fier (Fig. 2, a) they are clearly differentiated for the three categories of land groups. According to the market method the values were 42%, 65% and 3.6 times higher than the values found by rent capitalization method for agriculture land of the first and second group as well as pastures, respectively. The ratio rent/price varied from 0.8 to 2.5 within the range of this ratio on European countries. Differences up to twice higher for this report were between the irrigated lands and those without irrigation. Strelecek et al. [25] analyzed the rent capitalization method for EU countries and found out that the ratio variation rent price was in the range of 0.83 (Belgium) and 4:26 (Sweden), and that a high bond correlation (r = 0.71) existed between rent and price. In this study the analysis of the relationship between price and rent indicate a correlation between rent and price but it appears that the agriculture land rent has no major variation between categories of agricultural land, while their respective prices are with big differences especially within the same category of agriculture land for the criteria with or without irrigation. The inability in finding the correlation between rent and price is likely due to the fact that the figures for rent are not enough to arrive at this conclusion.

Price differentiation from these two methods was higher passing from the category of lands with high capability (category I, II and III) into land with low capability (pastures), for the Fier region. The highest difference (3.6 times higher) is seen between the two methods of assessment in the case of the pastures market which indicates that the market method overvalues this land category.

In Berat the average value of agricultural land by both methods was almost the same (13.233 versus 13.352 euro ha^{-1}) (Fig. 2, b). Land values

for the first group were higher by rent capitalization method compared to market method with 21% higher, while for the second group of agriculture land values were only 4% higher while maintaining the same hierarchy. For pastures the values were inverse: by the market method they were about 2 times higher compared with capitalization rent method.

In Berat price differences between the two methods compared with land values are smaller inside categories and among categories of land compared to the differences found in Fier.

In Korçe for the three land categories the highest prices were according to the market prices method compared with rent capitalization method and the average price was significantly higher in the market method compared with the rent capitalization method (22.433 versus 14.434-Euro ha^{-1}) (Fig. 2, c).

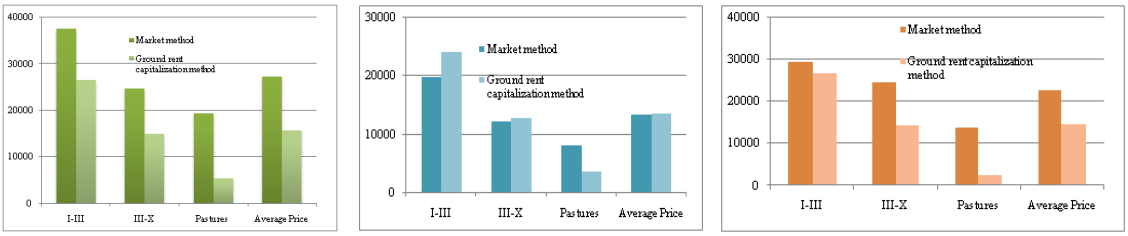
As in the case of Fier, the price differences by categories in Korça grow with the reduction of potentialities production (capability of) moving from the I-st category toward the pastures. The compared values between the two methods were 9%, 41% and about 5 times higher, respectively for the first group, second group and pastures according to the direct method.

4.2 Market Method Price versus Net Profit Method

While the land rent value expressed the land value in a certain time period and is based on the land usefulness for over a year and it is comparable to the annual profit or net profit they should be approximate to each-others.

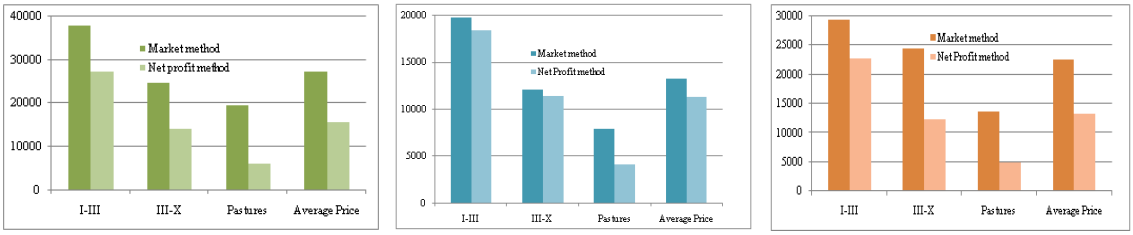
In Fier the comparison of land values under the market method and net profit method showed that the average values for the three land categories set by market method were 75% higher compared to direct method, while differences by group categories were more variable. They were 39, 78 and about 3 times higher under the direct method for the first group, second group and pastures respectively (Fig. 3, a). With the reduction of production potential the differences increase.

The differences between the two methods in Berat were different compared with Fier region; they were too low for agricultural lands (6 and 7% higher in the direct method) and low to average values (17% higher by the direct method). The difference with 93% higher according to the same method was only for pastures (Fig. 3, b).



a) b) c)

Fig. 2 (a, b, c). Comparison of the agricultural land prices between market and ground rent capitalization methods (Fier, Berat and Korça regions)



a) b) c)

Fig. 3 (a, b, c). Comparison of the values according to the market and net profit methods in three region (a-Fier, b-Berat and c-Korça)

The same hierarchy prices are maintained even for Korça; Land values for the direct method in all categories of land were higher than those measured pursuant the net profit method. The differences between the methods were 23%, 50% and 63% for the first group, second and pastures (Fig. 3, c).

For the three areas the agricultural land values were higher by direct method compared with net profit method and the differences were greater in the region of Fier and smaller in the Berati region. This is explained by the fact that in areas with intensive agriculture (Fier and Korça) and especially with the prospect agriculture development due to intensive cultivation of vegetables in greenhouses (Fier) and apple intensive cultivation technologies (Korça) the current land sale prices are higher (direct method) while net profit is still underestimated. On the other hand, the acquisition and sale of agricultural land on the side of the national road connected with large urban centers (Fier and Korça) is also used for other purposes (industry, commerce, greenhouses and orchards intensive) thus increasing their land price.

4.3 Net Profit Method *versus* Rent Capitalization Method

The comparison of the two indirect methods shows that in the Fier region the values were almost the same; in absolute values the differences were quite high and ranging from -531, +1106 and -538 Euro under the net profit method compared to the rent method for the first group and the second group and pastures respectively (Fig. 4). The percentage differences were 1 to 8%, according to categories of land. This shows that the rent and net profit are visible (apparent) because the percentage of arable land in this region is high (> 90%). In Berat the values by the two methods were different; they were higher approximately 20 and 10% for arable land according to the rent method compared to net profit method and about 10% lower in the case of pastures. In Korça the trend values were similar with those of Berat; they were 15-20% higher according to the rent method for agriculture land and about 50% lower for pastures compared to net profit method.

However, the differences between the rent and net profit methods were almost two times smaller than the differences between market method and each indirect method, for the reason that the basis of calculating the price of agricultural land is based in the same philosophy: the value of rent (applied) and annual net profit calculated according with a representative for a crop structure over a certain given period of time.

4.4 Comparison of Agricultural Land Rent and Sale Price of the Studied Area in Albania with Those of European Countries

The average rent values in the study areas were 290, 247 and 270 Euro/ha^{-1}/year^{-1} respectively in Fier, Berat and Korça with the highest variability among categories with irrigation or without irrigation lands (around 10%). The pastures values for rent varied between 19 Euro/ha^{-1}/year^{-1} for Korça to 42 Euro/ha^{-1}/year^{-1} for Fier. In EU countries the differences on rent values have a wide variation range due to geographical and socio-economic conditions; they vary from 15 Euros/ha^{-1}/year^{-1} for free small ruminants grazing

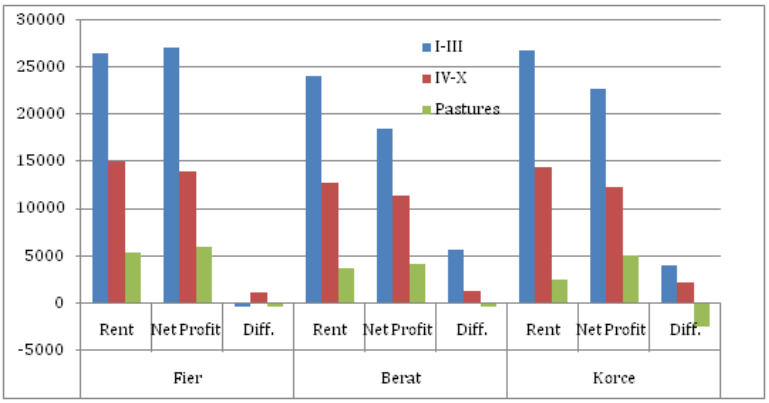


Fig. 4. Agricultural soils prices according to indirect methods and respective differences

on 250 Euro/ha^{-1}/year^{-1} for the cultivation of conventional agriculture crops up to 1500 Euro/ha^{-1}/year^{-1} for the cultivation of flowers [26].

The values expressed in Euro/ha^{-1}/year^{-1} for net profit varied from 350 (Berat), 410 (Korça) up to 480 (Fier) due to differential fertility of agricultural lands and their productivity. Between the two agricultural land categories the differences were visible; the agriculture land of the first group ranged from 80% (for Berat) up to close to two times higher in Korça and Fier compared to the second agriculture land group. Compared to the net profit values in European countries (for Mediterranean countries they vary from 250 to 350 Euro/ha) the values in areas of study were in the range of 25-30% higher.

Average prices of agricultural lands in the EU countries were smaller than 20,000 Euro/ha in most EU agricultural lands except the Netherlands and Malta [27], while in Albania these values were in the range between 20,000 and 35,000 Euro/ha according to the land market method for first category of agriculture land, comparable to the Mediterranean EU countries. Also according to the ground capitalization method the prices for the same category of agriculture land were between 24,000 and 27,000 Euro/ha. According to the abovementioned methods the agriculture land prices in the areas of study were higher than the European average prices for land with similar agronomic potentialities. They were comparable to the prices in the Netherlands.

5. CONCLUSIONS

Prices of the agricultural land in the study area based on property sales transactions indicated a great variability from one area to another. They varied between 19,700 (Berat), 29,000 (Korça) and 37,600 Euro/ha^{-1} (Fier), quite higher than the land prices in most EU countries. Under this method the values were higher than the ground rent capitalization method and even higher than net profit capitalization method. The highest differences in prices calculated by the two indirect methods were noted in lower fertility lands. The pastures land values by this direct method were from two up to five times higher than indirect methods, and much higher than the values in the EU Mediterranean countries.

The net profit capitalization method is an indirect method, which tries to reflect the land suitability and capability, but it is not capable of reflecting the social-economic status and economic development level of a country. Values found by this method were generally higher compared to EU countries; they varied from 18, 400 Euro/ha in Berat up to 27,000 Euro/ha in Fier. These values were lower compared to those calculated by the direct method. The prices of agricultural land by ground rent capitalization method were in the range of values between 24,000 and 26,000 Euro/ha, thus higher than the values found by net profit and direct method.

The prices of agricultural land in the study areas were variable and generally higher than the prices of similar agriculture land in EU countries. Compared to neighboring countries (FYROM and Greece) they were higher as well.

Gaps in the direct method arise from the fact that the land market in Albania is not developed, it often can be considered deformed due to (i) the number of transactions is relatively small on the study areas and averaging them to find the value of the median according to the methodology is not statistically within the range of trust, (ii) the purchase of agriculture land in most cases is done for non-agricultural uses thus increasing its price and (iii) the transposition of the average value found by methodology cannot be transposed in the micro eco-climatic and physio-geographic zones with specific features.

Gaps in the indirect method of rent capitalization are mainly from the fact that the rent capitalization ratio is calculated in the central part of Albania and applied in the study areas which has brought an unrealistic ratio if we take into consideration that prices and rent in these developed areas with intensive agriculture are not the same as those in the study areas.

The indirect method by net profit is very dependent on the crop structure, yield and agricultural commodity, which are dynamic variables and cause serious differences in agriculture land prices from one period to another.

The land valuation is a complex process because the same attributes can often have different uses, and thus different values. The rapid rate of urbanization and other social and economic factors are substantially affecting land valuation far beyond normal valuation processes for agricultural lands. Further research in the land evaluation and soil price should continue to study the correlations between inherent production

potential vis-à-vis its land use destination. Studying and evaluating the weight of others variables driving the land prices such as security of land, agriculture policy, land taxation, land policy and zoning, as well as land speculation may all be legitimate and important questions for further research.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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