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To Contract or not Contract: Implications for Farmer–Buyer Trading Relation Performance

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ABSTRACT

The paper analyses the value chain coordination of greenhouse vegetables in Albania, which has a strong export orientation. Based on a structured farm survey, the study contributes to the value chain literature of the vertical coordination of agricultural products by addressing the question of how chain governance modes differ in terms of exercised power and farmers' satisfaction (an indicator of performance) with the trading relationship. The results point out that farmers operating with agreements show higher levels of satisfaction with the trading relationship than do farmers selling on the spot market. On the other hand, those operating with agreements are under higher levels of exercised power over product quality.

Keywords: contract farming; intermediary power; agrifood value chains; relationship performance; Albania.

1 Introduction

Transition countries are characterized by inefficient formal institutions and weak law enforcement, resulting in a lack of contractual enforcement, which thus discourages contracts' usage. Imami *et al.* (2013) point out that written contracts (formal contract farming) are uncommon, while verbal agreements (informal contract farming) are more frequent and spot market transactions dominate the mode of exchange between farmers and buyers. Indeed, the retail sector, similar to the other nodes of the chain, has been highly fragmented in Albania, and the role of supermarkets (which typically emphasize contracting) has been insignificant. Also, exporters have had a negligible impact on improving chain coordination. However, the recent consolidation of supermarket chains, combined with the sharp increase of exports for various agrifood subsectors (including greenhouse vegetables, which is the best performing agrifood value chain in terms of exports), is expected to affect the structure and governance of value chains (Skreli and Imami, 2018).

The restructuring of value chains in developing/transition countries, including the expansion of large agrifood companies, especially supermarket chains, makes market access for smallholders more difficult due to the lack of quality standards, certification and volumes. Considering that most Albanian farmers are smallholders, it becomes imperative to understand the effects that the restructuring of the chain and the emergence of contract farming (CF) as a governance mechanism could have on smallholders' business. This is relevant not just for Albania but also for other transition countries with agricultural systems based on small-scale farmers that are facing restructuring of their food value chains due to the entrance of large agrifood companies.

A critical issue to governance of the chain is how buyers exercise their power. The phenomenon of power in food value chains has received considerable attention from researchers, practitioners and policymakers. The main reason for the degree of interest in the topic is that power in an inter-organizational business relationship involves inducing change in the other organization's behaviour. As Gaski (1996, p. 64) notes, "what could be more useful to an agent of the supply chain than the ability to get customers or suppliers to comply with its preferences?" Furthermore, understanding how power is exercised in a trading relationship is imperative because power affects relationship formation (e.g. trust, commitment and satisfaction), relationship and chain performance, value distribution, risk sharing, chain members' behaviour and participation in the chain (Batt, 2003; Benton and Maloni, 2005; Brown *et al.*, 1995). Yet, research on power for the upstream part of food value chains is limited. In this context, the contribution of this paper to the vertical coordination literature is in addressing the questions of how intermediaries exercise their power over farmers and how this exercise of power differs among governance modes (i.e. spot market transactions, verbal agreements and written contracts).

The remainder of the paper is as follows: Section 2 provides an overview of the Albanian agrifood sector in general and the greenhouse subsector specifically, including trends and challenges. Section 3 outlines the literature on contract farming, while Section 4 describes the methodology and Section 5 provides the empirical results. These sections are followed by discussion and conclusions.

2 Sector overview

Agriculture is one of the most important sectors contributing to the Albanian economy – it contributes about one-fifth of the gross domestic product. Agriculture also remains the largest employer in Albania. About half of employed people are engaged in the agricultural sector (MARDWA, 2016). Despite the socioeconomic importance and recent growth, the agriculture sector faces serious challenges. One of the major challenges is high fragmentation; the average farm size is small – around 1.2 ha – and there is large presence of (semi-)subsistence farms. Small farm sizes result in low economic efficiencies and market access constraints in the context of continuous trade liberalization, evolution of consumer behavior and retail market changes.

Greenhouse vegetables is one of the most important and dynamic agrifood sectors, and it is the leading agrifood export sector in Albania. The land area covered by greenhouses has more than doubled since 2005 (Table 1). The increase of greenhouse area, coupled with improved production technologies, has resulted in a significant increase of production, enabling a surplus for the key vegetables produced under greenhouses.

Table 1.
Evolution of greenhouse vegetables production.

Category	2000	2005	2010	2015	2016
Protected/greenhouse crops surface (ha)	462	650	828	1,243	1,405
Greenhouse vegetable production (metric tonnes)	39	59	66	108	119

Source: INSTAT (2018)

The tomato is the most important greenhouse vegetable, in terms of share of the total greenhouse vegetable production and exports, followed by the cucumber. While Albania has a substantial trade deficit for agricultural products, it has a positive trade balance for tomatoes (USD 24.6 million) and cucumbers (USD 6.5 million). Import prices are quite higher than export prices; export prices of tomatoes have been about half of the import prices. There are several facts that support this point. Albanian production is not standardized and is rarely certified (e.g. GlobalGAP), and most greenhouse vegetables are sold in the region in countries with low purchasing power, such as Western Balkan countries or new European Union countries such as Bulgaria and Romania. Despite legal and institutional changes, many farmers still lack information or awareness related to standards. Indeed, a recent study reports cases from shipments of greenhouse vegetables being returned by European Union countries due to high residual content, causing significant financial damage to the involved traders and exporters (Skreli and Imami, 2018). While production is constantly increasing, it is becoming increasingly imperative to improve the quality and ensure traceability (in other words, to improve value chain coordination) to increase competitiveness in the export markets.

3 Literature review on contract farming

In the literature on food value chain coordination, it emerges that one of the mechanisms most employed to achieve coordination is contract farming. FAO (2013) defines contract farming as “agricultural production carried out according to an agreement between a buyer and farmers, which establishes conditions for the production and marketing of a farm product or products.” Contract farming lies “somewhere” in between spot market transactions and vertical integration, encompassing the advantages of both modes (e.g. strict quality control, high coordination, flexibility, lower specific investments, etc.) (Prowse, 2012).

Contract farming, in the context of developing countries, has received considerable attention from both practitioners and researchers. One of the reasons for this degree of popularity is that contract farming can help farmers commercialize their products. Well-managed contract farming may lead to higher incomes for small-scale farmers thanks to increased productivity and to the modernization of the agricultural sector due to the introduction of innovations. And if it reaches scale, this can contribute to rural and national economic development (Key and Runsten, 1999; Maertens and Swinnen, 2009; Miyata *et al.*, 2009; Bellemare, 2012). A number of authors (Grosh, 1994; Katchova and Miranda, 2004) argue that contract farming can serve as an institutional solution to problems of market failures in access to services such as credits and insurance, as well as to information. As a result, this form of relationship governance solves a number of productivity constraints for small-scale farmers, including reduced market risks and access to credit, inputs and information.

Most of the literature on contract farming focuses on the impact of contract farming on farm performance, especially on welfare, measured generally by farmers’ income. A large part of the empirical research reports a positive impact of contract farming on farmers’ incomes (Simons *et al.*, 2005; Miyata *et al.*, 2009; Bellemare, 2012). It is generally argued in these studies that the increase in farmers’ incomes from contract farming could be attributed to several sources, including access to high value commodity chains (Simmons *et al.*, 2005; Masakure and Henson 2005) and the provision of services (such as credit, insurance, market information, etc.) and inputs (Zhu and Wang, 2007; Michelson *et al.*, 2013).

Despite the large interest in the topic of contract farming, the number of empirical studies on this issue in Albania is limited. Transition countries often are characterized by inefficient formal institutions and weak law enforcement, resulting in a lack of contractual enforcement and thus discouraging the wide use of contracts. According to Imami *et al.* (2013), most farmers state that one of the main reasons for not using formal contracts is that their clients do not prefer them. Moreover, the domestic retail sector is highly fragmented and does not use contracts to coordinate supply, while exports, as mentioned above, are oriented to cheaper European markets that are less demanding in terms of standards. Thus, coordination for the export market is still mostly in the form of the spot market. The lack of trust in contract enforcement from the courts is another major reason that farmers avoid entering into formal contracts (*ibid.*).

4 Methods and procedures

4.1 Data

Following the literature review, 35 in-depth interviews were carried out with agrifood value chain actors and agrifood sector experts. Additionally, three focus groups/group meetings were held with farmers in the horticulture sector. The objective of these in-depth interviews and focus groups was to identify the main challenges and issues in the sector, including value chain coordination. The information and insight obtained served as background for the questionnaire design.

A structured farm survey took place during November and December 2016 in the most productive greenhouse vegetable areas in Albania – namely, Berat and Lushnja. For the survey, 242 famers were randomly interviewed by well-trained postgraduate students. The margin of error, based on the current sample size, is 6.3 percent, with a confidence interval of 95 percent. The questionnaire was designed to operationalize the constructs discussed in the rest of this paper.

Table 2.
Socioeconomic characteristics of study sample.

	Mean	Median	Std. Deviation
Age	43.9	45	11.8
Education*	Na	2	Na
Main employment for head**	Na	4	Na
Experience in farming (years)	17.1	20	10.1
Experience in tomato cultivation (years)	8.1	5.5	6.3
Total area (dynym***)	14.5	12	11.4
Area under greenhouse tomatoes (dynym)	2.8	2	2.3

*Education: 2 corresponds to lower secondary education (nine years of education) in a range of 1 (no education) and 5 (university diploma); **Main employment of head: 4 corresponds to self-employment in own farm; ***dynym = 0.1 ha.

The average age of household heads engaged in greenhouse tomato production is 43.9 years (Table 2). Farmers are characterised by low education levels, as supported by a median of 2 corresponding to lower secondary education (nine years of education). Farmers with no education and with university diplomas are also represented in the sample. Farming is the main employment for the majority of farmers in the sample; these farmers have, on average, 17.1 years of experience in farming and 8.1 years of experience in the cultivation of greenhouse tomatoes. The average farm size is 14.5 dynyms (1.45 ha); this adequately represents the average farm size in Albania, which is about 1.2 ha, according to MARDWA (2014). The average area under greenhouse cultivation is 2.8 dynyms (0.28 ha).

4.2 Measurement development

It needs to be noted that the literature on contract farming and governance of agrifood value chains has limited empirical research on the issue of how market power is used by intermediaries as a mechanism to extract rent or to coordinate the chain. Here, the measure of power is derived from farmers' perception of intermediaries' power over them. To derive measures of power, 12 activities important to farmers' business were chosen based on semi-structured interviews with farmers. These activities were: manner and time of harvest, manner of product delivery, product selection criteria, variety selection, pesticide and fertilizer selection, price of product, agreement terms, amount to be paid, in-farm investment, and production plan. The extent of intermediary influence was captured for each activity by using a five-point Likert scale, ranging from 1 (no influence) to 5 (major influence). To get our measure of power, the level of intermediary influence for each activity was multiplied by a weight representing the perceived level of importance of each activity to the farmer. This level of importance of each activity to the farmer was also measured using a Likert scale, ranging from 1 (no importance) to 5 (major importance). The main reason for multiplying the influence level by the importance of the activity to the farmer was to get the directional element of power. Power is not just influence, it is influence in a direction that favours the one who exercised it (the intermediary) and in which direction the one over whom power was exercised (the farmer) would not have freely tended. In this context, one can exercise influence without exercising power (El-Ansary and Stern, 1972; Wilkinson, 1974; Dawson and Shaw, 1990).

This method of deriving a measure of the power variable was used by El-Ansary and Stern (1972), Butaney and Wortzel (1988), Collins (2007) and Xhoxhi *et al.* (2014). Table 3 shows the results of exploratory factor analysis using principal components applied to the 12 activities important to the farmers' business outlined above (i.e. each activity's importance to the farmer is multiplied by the intermediary's influence level) and to measures capturing the latent factors of farmers' satisfaction with the trading relationship and improvement of product quality due to the trading relationship. The analysis revealed six latent factors, which explain the structure of the data set, accounting for 63.4 percent of the total variation. Bartlett's test of sphericity (chi-square = 1230: df = 171; $p < .000$) and the Kaiser-Meyer-Olkin test of sampling adequacy (.69) confirm the appropriateness of the factor analysis (Field, 2009). All factor loadings are higher than Stevens' (2002) recommended value of .40, providing evidence of constructs convergent validity. In addition, each item significantly loads into a specific factor (only in one case is there cross-loading), providing support for construct discriminant validity.

The Cronbach's α value for four variables exceeds the cut-off value of .70, giving evidence of constructs reliability (Nunally, 1981). In the case of the intermediaries' power over margin and power over farm development, the α value is smaller than the recommended value of .70. However, for exploratory research, the minimum accepted α value is .60 (Field, 2009). Lastly, composites were generated with the regression method for getting measures for the variables of interest.

4.3 Estimation procedure

Analysis of variance (ANOVA) is employed for comparing different governance modes (i.e. spot market transaction, verbal agreements and written contracts) over the way intermediaries exercise their power and farmers' satisfaction with the trading relationship and improvements in product quality due to the trading relationship. Analysis of variance shows, firstly, for what variables the differences are significant, and then a post hoc test (Bonferroni) is employed to explore in more depth the location of the differences. The following section shows the results of the analysis.

5 Results and Discussion

5.1 Descriptive results

Written agreements are still not very common (they were present in 10 percent of the sample of farmers) in the Albanian agriculture sector; informal (verbal) agreements are more common (present in 36.4 percent of the sample). However, still, most farmers rely on spot market without any type of agreement (53.7 percent of the sample of farmers). In addition, the majority of farmers sell to different buyers (70.1 percent of the farmers surveyed), which provides support to the point that they rely on spot market transactions. As Table 7 in the appendix shows, the most important reason for selling to the same buyer is market security, followed by fair prices. The third reason appears to be timely payment.

Table 3.
Exploratory factor analysis and reliability analysis.

	Cronbach's α	Component					
		1	2	3	4	5	6
1. Satisfaction with the trading relationship	0.719						
SAT3 I am satisfied with the offered price by my main buyer		0.730					
SAT2 I am satisfied with the market information offered by my main buyer		0.701					
SAT4 The trading relationship with my main buyer offers me satisfactory profits		0.701					
SAT1 I am satisfied with the payment correctness of my main buyer		0.692					
2. Power over product quality	0.712						
Power over manner of harvest			0.857				
Power over manner of delivery			0.763				
Power over time of harvest			0.591	0.400			
Power over product selection criteria			0.532				
3. Power over input selection	0.716						
Power over pesticide selection				0.840			
Power over variety selection				0.718			
Power over fertilizer selection				0.718			
4. Power over margin	0.661						
Power over amount of money to be paid					0.814		
Power over agreement terms					0.747		
Power over price					0.694		
5. Product quality improved due to relationship	0.7						
QU1 The trading relationship with my main buyer has improved the product quality						0.889	
QU2 The trading relationship with my main buyer has improved the product safety						0.878	
QU4 The trading relationship with my main buyer has improved the cultivation technology						0.447	
6. Power over farm development	0.6						
Power over in-farm investments							0.794
Power over production plan							0.791

Note: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

On the other hand, the main form of guaranteeing quality from the buyer are eye control/inspection upon buying and in the field, followed by personal trust (Table 4). Despite the strong export orientation of the greenhouse vegetables, lab controls are not yet that diffused. However, markets that are demanding in terms of standards require traceability systems in place, with regular lab controls; this is often reflected in certification, such as GlobalGAP certification. Lack of traceability and proper (including lab) control practices exposes traders to high risk (as highlighted above, resulting in returned shipments) and orients traders towards lower-price market segments that are less concerned about standards certification(s.)

Table 4.
Manners in which buyers assess product quality and standards.

	Yes	Percent
Prior inspection in the field	78	33.80%
Inspection before/during purchase	186	80.50%
Lab analysis	16	6.90%
Guaranteed through the intermediary	16	6.90%
Personal trust	65	28.10%

5.2 ANOVA results

As can be seen from the ANOVA analysis, significant differences among agreement types are observed at the variables farmers’ satisfaction with the trading relationship, intermediaries’ power over product quality activities, and intermediaries’ power over farmers’ margin. To explore more in-depth where these differences are located, a post hoc Bonferroni test is conducted only for the variables where differences among groups are significant. In addition, Levene’s test of homogeneity of variance is performed, since ANOVA requires the assumption of homogeneity of variance (Table 8 in the appendix).

As the post hoc test shows (table 6), farmers engaged in an agreement with the buyer (either written or verbal) enjoy higher levels of satisfaction with the trading relationship than do farmers operating on spot market transactions (i.e. with no prior agreement), which indirectly is a measure of relationship performance. The differences between both type of agreements with regard to trading relationship satisfaction are not significant. This implies that contract farming – with either written or verbal agreements – as a mechanism of vertical coordination leads to higher trading relationship performance, which is in line with the literature on contract farming.

It could be argued that the increased performance of the trading relationship could be due to how intermediaries exercise their power. The results of the analysis show that intermediaries’ exercising of power over farmers’ activities related to product quality is higher on farmers who are operating on prior agreements than on farmers who are operating on the spot market. It can be deducted that the influence exercised by intermediaries over product quality directly affects relationship performance, because farmers would produce products following intermediaries’ specifications, which are based on what the market requires. As a result, the product would sell for a higher price, and due to due to higher coordination, the loss would be minimal. On the other hand, intermediaries provide higher prices to farmers for following their specifications.

Regarding intermediaries’ power over farmers’ margins, the result is that only the farmers operating on verbal agreements are under more pressure over profit margins than farmers operating on spot market transactions. This could mean that intermediaries “expropriate” more rent from farmers operating on verbal agreements than from those selling on the spot market.

Table 5.
ANOVA – factor agreement types.

Dependent Variable		Sum of squares	df	Mean square	F	Sig.
SAT	Between groups	22.248	2	11.124	12.208	0.000
	Within groups	207.752	228	0.911		
	Total	230	230			
POPQ	Between groups	31.259	2	15.629	17.93	0.000
	Within groups	198.741	228	0.872		
	Total	230	230			
POIS	Between groups	0.631	2	0.315	0.314	0.731
	Within groups	229.369	228	1.006		
	Total	230	230			
POM	Between groups	22.149	2	11.075	12.148	0.000
	Within groups	207.851	228	0.912		
	Total	230	230			
Prod Qual	Between groups	0.057	2	0.029	0.028	0.972
	Within groups	229.943	228	1.009		
	Total	230	230			
POFD	Between groups	0.048	2	0.024	0.024	0.977
	Within groups	229.952	228	1.009		
	Total	230	230			

Note: The variables are standardized; SAT – Satisfaction with the trading relationship; POPQ –Power over product quality; POIS – Power over input selection; POM – Power over margin; Prod Qual – Product quality; POFD – Power over farm development.

Table 6.
Post hock Bonferroni test – multiple comparisons.

DV	(I) Agreement Type	(J) Agreement Type	Mean Difference (I-J)	Std. Error
SAT	Written contract	Verbal agreement	0.352	0.225
		No agreement	0.866*	0.217
	Verbal agreement	Written contract	-0.352	0.225
		No agreement	0.514*	0.135
	No agreement	Written contract	-0.866*	0.217
		Verbal agreement	-0.514*	0.135
POPQ	Written contract	Verbal agreement	0.116	0.22
		No agreement	0.825*	0.212
	Verbal agreement	Written contract	-0.116	0.22
		No agreement	0.710*	0.132
	No agreement	Written contract	-0.825*	0.212
		Verbal agreement	-0.710*	0.132
POM	Written contract	Verbal agreement	-0.395	0.225
		No agreement	0.27	0.217
	Verbal agreement	Written contract	0.395	0.225
		No agreement	0.665*	0.135
	No agreement	Written contract	-0.27	0.217
		Verbal agreement	-0.665*	0.135

Note: * The mean difference is significant at 0.05 level.

6 Conclusions

Throughout the transition, the Albanian agrifood sector as a whole has been facing problems with creating market institutions, establishing marketing and distribution channels, meeting national and European Union standards (such as with food safety and phytosanitary standards, for example). This is particularly the case for export-oriented value chains. Export markets, particularly lucrative EU markets, are highly demanding in terms of standards. Standards, including traceability, can be achieved, improved and maintained only through efficient vertical and horizontal coordination.

This paper analyses the value chain coordination of greenhouse vegetables (namely, tomatoes) by focusing on the differences among governance modes in terms of exercised power and trading relationship performance. The paper adds to the debate on food value chain coordination by pointing out that governance modes differ in terms of exercised power and performance. More specifically, we find that agreements (verbal or written) contribute to farmers' higher levels of satisfaction with the relationship, which serves as a proxy measure of trading relationship performance. In addition, farmers engaged in agreements (verbal or written) face higher levels of intermediaries' exercised power over activities related to product quality.

While research on the impact of contract farming on farmers' welfare (such as performance, income and more) is extensive and in line with our results, studies analysing the association between intermediaries' power and contract farming are limited. Thus, our results point to an interesting link connecting governance mode, exercised power and relationship performance, which has implications for both policy and business, considering that agreements (verbal or written) are related to higher performance levels yet are not frequently used due to the lack of a contract enforcement system and the presence of a costly and untrusted judicial system. In this view, policymakers should build an enabling environment for farmers and contractors to thrive.

In the authors' view, an enabling environment for the Albanian context means the development of a legal framework that addresses contract farming issues, which currently are treated under the civil code as standard contracts. In addition, the development of successful and sustainable contract farming would require the establishment of an agency that specialises in contract farming issues and that builds awareness among and provides knowledge to small-scale farmers on making informed choices when entering into a contract. The agency also could serve as a mediator when problems arise – as a mechanism that attempts to solve issues before involving the courts, which is expensive and takes more time.

From a business perspective, the results imply that both farmers and intermediaries would be better off if they were to coordinate their activities through an agreement prior to the harvest season. The mechanism that would serve the purpose of coordination is intermediaries' power over product quality. When the intermediary does not have such a power or is not interested in getting high-quality products or specific product characteristics (which could be due to intermediaries' lack of access to high-end markets or to markets that require specific quality and safety standards), then the benefits of agreements might not be achieved.

The results of our approach are limited because we do not test for causality, which would back up our deductive arguments. Moreover, the analysis focuses only on one subsector in a particular country, because the strong export market orientation of the selected sector represents an interesting case study. However, in-depth comparative analysis across sectors and countries could yield more contribution to the literature, which should be addressed in future research work.

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Appendix

Table 7.
Reasons given by farmers for selling to same buyer.

	Reason	Yes	Frequency
1	Market security	136	59%
2	Fair prices	115	50%
3	Input supply	11	5%
4	Loan or loan guarantee	4	2%
5	Information and training	9	4%
6	Trust	93	40%
7	Habit	35	15%
8	Distance	87	38%
9	Contract	21	9%
10	Timely payment	93	40%

Table 8.
Test of homogeneity of variances.

	Levene statistic	df1	df2	Sig.
SAT	0.695	2	228	0.500
POPQ	0.841	2	228	0.433
POIS	0.952	2	228	0.388
POM	1.78	2	228	0.171
Prod Qual	2.401	2	228	0.093
POFD	0.347	2	228	0.707