Title: Trade competition and loss of exclusivity in tobacco contract farming in Brazil

Abstract

Purpose: This paper aims to identify both the level and the reasons of the increasing loss of exclusivity in the transactions between tobacco growers and tobacco processors.

Design/methodology/approach: Semi-structured interviews were held with growers and companies' directors, and a structured questionnaire was designed to collect information from a representative sample of 381 tobacco growers of the Rio Pardo Valley, Brazil. Indicators of exclusivity considered the number of both formal contracts and off-contract sales each grower has undertaken.

Findings: The research found that 55% of growers are actually exclusive. The number of growers with more than one contract was increasing, jeopardizing the centrally coordinated supply chain adopted by major companies. Changes in market competition were among the main reasons for loss of exclusivity. Most companies have adopted procurement strategies which disturbed the traditional centralized coordination.

Practical implications: The article shows how a competitive centrally coordinated supply chain can be threatened by competition. Increasing competition introduces uncertainty, higher costs and unknown consequences to competitiveness. These are exactly the undesirable conditions that a centrally coordinated model tries to overcome. There are practical implications for both companies' supply chain strategies and governments' market regulation policies.

Originality/value: The article brings about two important questions. How to sustain competitiveness based on a centrally coordinated supply chain in an environment of increasing competition for suppliers? How to sustain this kind of competitiveness under market regulations and anti-trust polices that attempt to make companies act in a competitive manner? Answers for these questions require further research to bridge the gaps between supply chain coordination, trade competition and competitiveness.

Article type: Research paper

Keywords: supply chain, contracts, competitive strategy, competitiveness, value chain, agricultural products.

1. Introduction

Recent evolution of the world tobacco market has been conditioned by an unfavourable institutional environment and constraints of various kinds, such as government restrictions on production, sales and advertising, declining social acceptance of smoking and smuggling (WHO, 2008). The tobacco market has undergone structural changes associated with this unfavourable institutional context, changing habits of customers and the strategies adopted by the main companies to deal with the situation, among other factors. The demand for higher quality tobacco increased, thus requiring tighter control of suppliers and production processes through the entire chain, from growers to final customers.

Brazilian tobacco industry has undeniably achieved a leading position in the new context of the world market. While the other two main producers of high-grade tobacco, U.S.A. and Zimbabwe, face difficulties to sustain their level of production, the Brazilian industry was able to run a highly competitive agrisystem. In the U.S.A., restrictions on production and low government support determined the gradual decline in the production of high-grade tobacco to supply the international market. In Zimbabwe, the civil war and land reform led to a severe breakdown in tobacco growing since the beginning of the 1990s. Meanwhile, production has increased steadily in Brazil, which became the largest exporter since 1993, when it overtook the U.S.A. In 2005, Brazilian exports reached 616,5 thousand metric tons. Its share of total world exports increases from 8%, in 1996, to 16%, in 2005 (FAO, 2009).

The coordination of the supply chain adopted in Brazil by most tobacco companies is pointed out as a platform from which it was possible to build up Brazilian leadership in the international market for high-grade tobacco (see Buainain and Souza Filho, 2008). The structure of this supply chain comprises a number of agents and institutions with different profiles, sizes, specialties and functions. The central roles are played by leaf processing companies, which coordinate their own network of suppliers (mostly small family farmers) by setting volumes and production conditions, buying predetermined amounts of tobacco leaves at predetermined minimum prices, guaranteeing credit for growers and carrying out exports. There are also organizations representing the interests of growers and processing companies, regulatory bodies and technical and/or political discussion forums.

Transactions between growers and processing companies are ruled by contracts setting up overall production and trade conditions. Traditionally, these contracts were based on ad hoc no written exclusivity, which is essential for companies' control of flows and quality, and to reduce the cost of selection and monitoring. Also, it enables appropriation of a quasi-rent by companies and recovering of dedicated assets. Loss of exclusivity would certainly have an impact on both costs and effectiveness of the supply chain in the medium term. From the standpoint of processing companies, control of production process would weaken and risk would increase. Therefore, loss of exclusivity jeopardizes management of both supply planning and costs. If growers undertake more than one contract with more than one company or sells to third parties in the spot market, returns of the supply chain managed by the contracting companies may not be appropriated exclusively. If worst came to worst, the system would break down because of this kind of disruption and the processing companies would no longer be able to sustain it.

In the middle of the years 2000, the major tobacco processing companies in Brazil identified growing loss of exclusivity of their suppliers. The number of growers undertaking contracts with two or more companies, contract default and the number growers selling off-contracted tobacco in the spot market were increasing. Some companies and Brazilian tobacco organizations were very concerned about this fact. Overall, the competitiveness and positive performance of the Brazilian tobacco industry was threatened. A research project was then designed to better understand the tobacco market in Brazil and find out the causes of the problem. This paper presents some of the results of this research project, with special focus on both the level and the reasons of the increasing loss of exclusivity.

2. Research strategy

The study was conducted in 2005, in the State of Rio Grande do Sul, which shared 48% of the Brazilian production in that year. Two field surveys were conducted with growers of the Rio Pardo Valley, Brazil's main tobacco producing area. The first survey consisted of semi-structured interviews with a non-statistical sample of 40 growers (landowners, sharecroppers and tenants). The second consisted of applying a structured questionnaire to a statistically planned sample of 381 tobacco growers that represented the total population of tobacco growers of Pardo Valley. Semi-structured questionnaires were also designed for interviews with companies' directors. However, researchers faced enormous difficulties in obtaining information on/from this source. Few of the directors were willing to talk, and only three responded to an open format questionnaire. Companies reacted negatively because of distrust and competition. The approach adopted to circumvent this problem involved procuring information from AFUBRA (Brazilian Association of Tobacco Growers), SINDITABACO (Tobacco Processing Industry Association) and from growers themselves. Directors of both associations agreed to answer open format questions.

3. Background

Tobacco production in the South of Brazil is not recent. An embryonic form of integrated production was established in the early decades of the 20th century and consolidated in the 1970s. A tobacco cluster in the South of Brazil was developed during this period, alongside regulatory framework and a "tobacco culture" (Mesquita and Oliveira, 2003). The social capital of growers and the experience and knowledge of the local population in connection with tobacco growing have been handing down from generation to generation. These factors are also among the main assets responsible for the competitiveness of Brazilian tobacco and its significant share of the international market.

Family farms dominate the scenario. In 2008, there were around 180 thousand families growing tobacco in three states of the South Region of Brazil (AFUBRA, 2009). The field survey found an average of 3.7 people per household. Each household had 2.9 people on average working mostly in tobacco growing. Hired labor accounted for only 8% of the total workforce, reflecting the predominance of family production. Heads of household have little formal education, but their experience in tobacco growing was substantial, averaging 23 years in the activity and evidencing that the workforce is dedicated specifically to this crop. The average size of the farms was 11 hectares, with tobacco occupying only 4 hectares on average. Besides tobacco, the main cash crop, most farms have areas dedicated to selfconsumption crops, especially beans and sweet potato, as well as orchards and kitchen gardens and corn to feed pigs.

Processing companies act as link between growers and cigarette manufacturers, with whom they have contractual relationships calling for continuous supply to established customers, reputation building on both sides, and implicit partnerships to comply with standards and meet requirements of the market. Processing companies enter into commitments with cigarette manufactures well before the tobacco crop season starts, so they must plan in advance for leaf tobacco supplies to fulfill these commitments.

Three large processing corporations, Universal Leaf Tobacco, Souza Cruz (controlled by British American Tobacco) and Alliance One control the market for leaf tobacco in Brazil. In 2003, they had 75% of Brazil's installed capacity to grade, process and market tobacco leaf (SEAE, 2005). Around 20 small and medium firms also participate in this market. Despite this concentration, there are no signs of the accommodation that characterizes oligopsonies with high market power. In fact, it was found fierce rivalry among competing tobacco processors due to relatively low entry barriers and the ease with which cigarette manufacturers can obtain raw material from the international market in the event of attempted price fixing (SEAE, 2005).

Each major processing company established its own supply chain of leaf tobacco. They aim at centralized control of all key variables that affect supply, so as to reduce uncertainty regarding raw material quantity, quality and cost. This coordination involves an array of economic and legal mechanisms that contractually define the relations between the company and each grower. Although the sale and purchase contract is the main legal mechanism of coordination, relations between companies and growers transcend contracts and extend to a universe of values relating to tradition and the local culture. Coordination of each processing company's supply chain is the responsibility of its own team of agricultural advisers who monitor and transmit information in both directions between the processing company and the growers. Each processing company also has its own links to banks, input suppliers, transporters and service providers in general to provide grower's needs.

This centralized supply chain is justified by the needs and aims of both tobacco processing companies and growers. From processing company' standpoint, beyond planning in advance for huge volume of raw material supplies, a set of strict specifications in terms of both quantity and quality has to be met. Extrinsic and intrinsic tobacco properties are demanded by cigarettes manufactures related to quality and lack of contaminants as well as social responsibility standards such as a ban on child labor and environmental protection. Processing companies are obliged to devote a large sum of resources to compliance of increasing restrictions, oversight of production process and eventual penalties charged both in Brazil and abroad.

From the growers' standpoint, the rationale for the centralized supply chain involves also several factors. Tobacco is the main source of earnings and almost always the only one for these small, some very small, farmers. Tobacco growing incurs high costs per unit area, with unstable yields. Its quality is highly sensitive to variations in weather conditions, with direct effects on income. It is also labor-intensive and this makes it hard to combine with other cash crops. Unlike other countries, Brazil offers no public policy or market mechanisms to properly mitigate the risks associated with tobacco farming and marketing, so farmers are totally exposed to high risks associated to weather conditions and market. It is unlikely that tobacco growing could be carried on by small farmers without guaranteed purchase volumes and prices, as well as facilitated access to inputs and credit. The centralized supply chain developed in the South of Brazil addresses all these difficulties and enables family farmers to engage successfully in tobacco production even under such challenging systemic conditions.

One could sustain that production can always be taken over by larger growers if small farmers cannot handle it without the support provided by processing companies. This is not so easy, for reasons ranging from the fragmented land tenure structure prevailing in the most suitable areas for tobacco growing to labor costs and quality of output. Indeed a few companies have experienced the introduction of mechanization following the US production system; it failed completely as costs of production increased and tobacco quality fell below required standards. The experience was discontinued.

In the sale and purchase contract, growers and processing companies formalize their reciprocal commitments before the start of the crop year. To assure the flow of tobacco supplies, processing companies undertake to provide transportation services, procurement of inputs, technological information and support in obtaining credit for growers. Growers have also guarantee purchase of the crop for a price which, in some years, is set by agreement between growers' and processing companies' organizations. In addition, growers who sign contracts have access to the hail insurance policy managed by AFUBRA. Processing companies are responsible for paying insurance premiums, which is subtracted from price when the growers deliver the tobacco leaves. Thus, the contract reduces growers' economic risk and enables participation by family farmers who otherwise would find it difficult to engage in the activity.

Implementing and managing the centralized supply chain incur high operational and transaction costs that are hard to measure (Benham and Benham, 1998). Data from interviews with directors of processing companies did not enable us to obtain accurate measurements of the cost of installing such a system for a new entrant. According to the interviews, the cost of maintaining a centralized supply chain can be as much as 10%-12% of a processing company's revenue. This includes, among other items, the cost of hiring technicians to act as advisers as well as clerical staff to perform all the office work relating to contracts, and *ex-post* transaction costs in the event of debt renegotiation or default.

4. Measuring exclusivity

As mentioned above, exclusivity has been, throughout the decades, an important feature of centrally coordinated tobacco production system in Brazil. Our research has identified an increasing number of growers dealing with more than one company. The first step to understand what is behind this change and what could be its consequences is to measure exclusivity.

The number of contracts each grower had undertaken with different processing companies and of off-contract sales in the spot market, in 2005, were used to create proxy variables for exclusivity. Initially, a grower was considered exclusive if he or she attained two conditions: (1) had one contract with a single processing company and (2) did not sell off-contract tobacco in the spot market. Loss of exclusivity occurs in cases in which a grower sign more than one contract with more than one processing company, and/or a grower sell off-contract tobacco in the spot market. It was found that only 55% of the sample of growers was in the category of exclusive, i.e. they had a single contract with one processing company, and they did not sell tobacco to either other companies or in the spot market.

Exclusivity was also measured by taking into account only the condition (1) above, so off-contract sales in the spot market were allowed (condition 2). In this case, the percentage of exclusive growers increases to 82% of the sample. Non-exclusive growers accounted for 18% of the sample: 16% of the sampled growers signed contracts with two processing companies, and 2% signed contracts with three processing companies. Although the number of non-exclusive growers was still low, it was increasing in comparison with the two previous years. In 2003 and 2004, the percentages of growers with contracts with two processing companies were 14% and 15%, respectively. The number of growers with three contacts in these years was a half of 2005.

Taking a sub-sample of growers who signed contract with one of the three largest companies, it was found that 74% of them had one contract. The remaining 26% growers signed more than one contract: one contract with the reference company and another with a competitor. As for the ensemble of growers integrated to this company, 9% signed contracts with one of the three other largest competitors, while 17% signed contracts with smaller companies. This pattern, with minor variations, was repeated for all other three major companies.

It should be stressed that 9% of production quantity was sold without contract, with 6.5% going to spot market middlemen and 2.5% to processing companies. These percentages may seem small, but they are significant when extrapolated to total Brazilian production, indicating approximately 80,000 metric tons of leaf tobacco outside the control of the centrally coordinated supply chain. Until recently, middlemen accounted for an insignificant share of the market and never threatened the functioning of the integration system. Even in 2005, their market-share was small, but it was growing, according to the interviews, and was enough to create a number of disruptions in the system, such as increasing off-contract selling, default and minor breach of contract.

The study found that smaller firms in the sample acquired 72% of their needs of tobacco without contracts. The strategy pursued by them was clear: they focused on recruiting experienced growers already integrated with the major players, and as quickly as possible buying tobacco leaves either directly or through middlemen in the spot market. Three largest companies account for the remaining 28% of tobacco bought without contract.

The information above confirms that the existing integration system no longer represents a model of perfect centrally coordinated supply chain. Taken together, these trends suggested a certain loss of control over the supply chain and increased transaction costs.

5. Reasons for loss of exclusivity

In the last section, it was seen that behind increasing loss of exclusivity, processors were fiercely competing to poach growers from rivals. In the past, there was an unwritten rule that each processor had its own suppliers and strove to build up exclusivity among them: this amounted to what is known as an “institutional or corporate culture”. However, exclusivity has been undermined by the proliferation of growers with more than one formal contract and sales in the spot market. The presence of growers, middlemen, small and large companies in the spot market indicates that the market is more complex and competitive than might appear from a description of centrally coordinated supply chain model. It should be recognized that the rising number of growers with more than one contract and the increasing market-share of the middlemen at the service of companies have opened up the central coordination, giving growers more leeway in marketing their tobacco than they used to have in the past.

From the growers' standpoint, having contracts with more than one company is fully justified as a strategy to add another source of income while creating options for selling, and increasing their bargaining power versus the processors. Thus from the market standpoint this opening-up is positive. The fact that growers can sell to more than one buyer confirms the intense competition among processors. In fact, competition among companies has been one of the main determinants of the changes pointed out above. The main reason for an increasing competition can be found in the international market. The Zimbabwe debacle and falling production in the United States have driven up international demand for Brazilian tobacco. As a result, new companies have established themselves in Brazil, traditional companies have rapidly expanded production capacity, the activities of spot dealers have increased, and major international buyers have set up offices to buy tobacco in the country. These sudden changes in market structure, with expanding production and the entry of new players, translates into an intensification of competition among companies for growers and tobacco. The traditional supply chain has been affected by these changes.

Companies interested in establishing a foothold in the Brazilian market face low barriers to entry. It is possible to start up in business with low-scale production. Equipment, machinery and technology are simple and available for acquisition without barriers. The amount of investment required for fixed capital is relatively modest. Companies can even apply for long-term loans from the Brazilian National Bank for Economic and Social Development to install new processing and grading lines. Investment in a processing plant can even be unnecessary if the new entrant prefers to outsource processing to an established company.

The strategies used by new entrants in the Brazilian leaf tobacco market involved either acquiring an existing company or starting a new one. For the latter, the main immediate constraint is the setting of a reliable procurement strategy. The building of a new centrally coordinated supply chain involves several actions, such as selection of growers, financing growing, building or expanding facilities on farms, establishing a network of transporters, and recruiting technicians to act as advisers. Availability of working capital is not a barrier and can be easily made available from either national or international funding sources; but it takes time to build up a new supply chain, thus the new entrants start by competing for the tobacco output already contracted by existing processors. For this purpose they may use middlemen or buy directly from growers. Operations begin with the hiring of dealers to start buying up tobacco. The need for skilled labor and knowledge of the local industry has also proved not to be an obstacle. The strategy used by new entrants is to recruit former managers or directors of existing companies, some of whom may be retirees.

Competition for leaf tobacco has led to a tug-of-war between players, new and old ones. Far from entering into cooperative relationships, in which monitoring is hard, companies have adopted aggressive policies to recruit new growers and defensive policies to avoid losing exclusivity. In this environment, the ability of traditional processors to coordinate and manage their supply chain has weakened considerably. Meanwhile, the cost-benefit of a centrally coordinated supply chain has dropped, making traditional processing companies more vulnerable to competition from outsiders that operate at lower cost precisely because they do not have to invest in a centrally coordinated supply chain. For new entrants and/or smaller firms with less capital, the strategy of buying leaf tobacco from growers already integrated with and trained by other companies is highly advantageous. They can buy first-class tobacco without having to spend large amounts of capital into the formation and maintenance of a large chain of suppliers. And since they do not incur in high coordination costs, they can offer higher prices to growers, thus introducing strong incentives to selling off the contracts.

In a context of intense competition and a non-cooperative game, the major players adopt contradictory strategies. In order to expand their base of growers they try to attract growers from competitors. The first step is to offer a second, sometimes a third, formal contract to growers. The victim company reacts by offering the same to the grower of his rival. Also, the largest companies buy tobacco from the smaller firms and middlemen, as the non-cooperative game and the increasing need for tobacco do not allow any player to take a unilateral decision of not buying from smaller competitors. On the contrary, minor players are used as intermediaries in the competition for the rival's growers. The middlemen adopted more aggressive buy strategy, and begun to compete for the production previously committed to major processors. This kind of game mutually compromises the supply chain of each company.

As a consequence of this increasing level of competition, processing companies adopted defensive strategies in an attempt to strengthen the exclusivity of already contracted growers. These polices were based on promises of financial and non-financial advantages. The most widespread practice has been to offer additional loans and down-payments ahead of the harvest, with growers being left free to use the money to finance other activities on the property or as they see fit. Although this strategy helps build exclusivity and trust, it also increases the indebtedness of growers and compresses their net earnings. This is exactly the situation that has led many growers to sell outside the integration system, thereby avoiding the deductions that would be made by the company if they fulfilled the contract. According to interviews with companies' directors, almost 20% of growers defaulted in the 2005 crop year. This was an astonishing increase if compared to the historical pattern of less than 5%.

As a consequence of loss of exclusivity, rising competition and default, the cost of the centrally coordinated supply chain was increasing. In order to compensate for this, the major companies have adopted policies designed to reduce cost by increasing the ratio of growers to advisers, for instance. Advisers have begun acting more as credit agents, input sellers and leaf tobacco buyers than as technology diffusion and production supervisors. This too is a contradictory strategy, which disturbs the traditional coordination model.

6. Finding Remarks

The data and indicators presented here corroborate the view that the centralized supply chain used by much of the Brazilian tobacco industry suffers from "leakages" that distance it from the model prevalent in the past and accepted by most academic work on the subject (Arshinder et al., 2008). They also confirm the conclusion that the increase of the level of market competition creates opportunities for a coexisting decentralized supply chain, based on spot market, where product is deviated from the centralized one. The obvious conclusion is that deviation of the centralized supply chain introduces uncertainty and higher costs for processing companies which still adopt it. Under threat, the system is moving towards a new shape, with unknown consequences to its own competitiveness. These are exactly the undesirable conditions that a centralized model tries to overcome. Competitiveness of the whole Brazilian tobacco agri-system was jeopardized by the companies' competitive strategies; assuming that the centrally coordinated supply chain is one of the main determinants of its competitiveness in the international market.

The article brings about two important questions. How to sustain competitiveness based on a centrally coordinated supply chain in an environment of increasing competition for suppliers? How to sustain this kind of competitiveness under market regulations and anti-trust polices that attempt to make companies act in a competitive manner? Answers for these questions require further research to bridge gaps between supply chain coordination, market structure and competitiveness.

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