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Contract Marketing in the US after the 2002 Farm Act: The Case of Peanuts

by

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Keywords: US agriculture, agricultural marketing, peanuts, economics of agricultural contracts.

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Abstract

The elimination of the marketing quota system that regulated the peanut market since the 1930s has been accompanied by the emergence of marketing contracts between farmers and peanut buyers (mainly peanut shellers). Two types of contracts have been observed, forward contracts for delivery at harvest or at a later date and "option to purchase" contracts. We analyze the clauses of contracts used by major shellers in order to infer the motivation behind these contracts (i.e., risk sharing, reduction of transaction costs, improve coordination, exercise of market power, etc.). The analysis points out that the main role of the contracts is to replace the marketing structure existing prior the 2002 Farm Act, where peanut marketing was quite regulated. In this sense, the reduction of transaction costs associated to the need for coordinating a continuous supply of homogeneous quality seems to be the most plausible explanation.

Keywords: US agriculture, agricultural marketing, peanuts, economics of agricultural contracts.

I. Introduction

Production of peanuts in the U.S., as well as production of several other crops, was deregulated by the Farm Security and Rural Investment Act of 2002 (hereafter, 2002 Farm Act) that replaced the tradition marketing quota system with a Marketing Assistance Loan Program (MLP). This has been a dramatic change for the peanut sector, which had operated under a marketing quota system that fixed production prices and quantities, although with modifications, since the 1930s. As a result, peanut prices dropped below the former support levels and production shifted significantly from less to more productive areas (Dohlman et al., 2004).

This transition has been accompanied by the use of contractual arrangements between producers and crop processors (peanut shellers). According to Dohlman et al. (2004) the lack of price information and marketing options in the peanut market rules out some of the strategies available to producers of major commodities, such as timing sales based on cash or future prices. It appears that a lack of potential trade volume has been a disincentive to establishing a peanut futures contract. As an alternative, the main price

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risk management strategy adopted by peanut farmers since 2002 has been to enter into private marketing contracts with peanut buyers, typically peanut shellers. Approximately four-fifths of growers used such contracts in 2003.

The "option" contract is a hybrid of a forward and an option contract that gives a peanut sheller the exclusive right, but not the obligation, to purchase a specified volume of the crop from the farmer. It should be noted that while the option contract is totally new, forward contracts were used in the past by peanut farmers (Hancock et al., 2002)

As contracts, among several other reasons, can be used to exercise market power (e.g., Salanie, 1997) their analysis is important to identify any welfare implications. The issue is especially important in the peanut market where according to Dohlman et al. (2004) "currently, there are only 10 active shelling companies, down from 45 in the early 1980s and 92 in 1970. Two companies now control about 73 percent of purchases and two-thirds of peanut buying points" (pp. 20). Thus, the purpose of this paper is to discuss the possible reasons that explain the use of these contracts and through the analysis of their clauses to address whether there are possible effects on the welfare of peanut producers (as processors are the concentrated group) and for the normal functioning of the MLP.

In the absence of statistical evidence to produce a numerical analysis, the methodology used in this paper consists of studying the characteristics of two marketing contracts that are currently used by two major peanut shellers, whose identities are kept anonymous. While this is a qualitative analysis, it allows us to review the clauses included in the aforementioned contracts and contrast them with those reasons present in the economic literature as motivations for the signature of contracts. Furthermore, another reason to analyze the specific terms of the contracts is that the way that market power can be present in a contract depends on the particular characteristics of the market where they are signed.

We start the paper with a review of the main reasons behind the use of contracts in agriculture emphasizing those related to marketing contracts. Next, we review the recent changes in the peanut market as a needed background for the analysis and describe the characteristics of the peanut contracts. The next section discusses the clauses found in the peanut contracts in the light of the economic literature of contracts and we briefly sketch the features of the current peanut marketing. Finally we present some conclusions.

II. Brief Review of Reasons for Contracting in Agriculture

Before reviewing the main reasons for the use of contracts in agriculture it is important to distinguish between two types of agricultural contracts: production and marketing contracts, since they focus on different aspects of the supply chain.

Production contracts detail specific farmer and contractor responsibility for production inputs and practices, as well as mechanism for determining the payment. This type of contracts often specifies inputs to be used, production guidelines and allows for the contractor to give technical advice and make field visits. In many cases the ownership of

the crop is in the hands of the contractor, not of the farmer and the contract is signed before the production process starts. Examples of this type of contracts are those related to organic products or identity preserved crops or specialty crops (Sykuta et al, 2003).

In contrast, marketing contracts are agreements between a buyer and a producer that set a price and/or outlet for a commodity before harvest or before the commodity is ready to be marketed. The producer usually remains fully responsible for the management decisions during the production process with limited direction from the contractor. Marketing contracts can take many forms. The most commonly used marketing contract is the fixed forward price contract, under which farmers can completely eliminate the price risk. Other forms of marketing contracts do share the price risk between the buyer and seller. Examples of such contracts are deferred payment contracts, basis contracts, deferred price contracts, minimum price contracts, hedge-to-arrive contracts, a short futures hedge, cost-plus contracts, and the purchase of put options (Harwood et al., 1999). In addition, marketing contracts often specify product quantity, delivery schedules and include clauses about product specification and may set standards for a grower's production method. Also they include articles about compensation and quality control, thus, depending on how homogeneous is the product, it may include a minimum standard requirement (for homogeneous products) or a number of characteristics, grades, etc. for heterogeneous products.

We will focus the remaining part of this review on the characteristics of marketing contracts as they are the type of contracts observed in the peanut market. Thus, the main purpose will be to identify the reasons for farmers to enter into a marketing contracting relationship and the types of clauses that later will be used to analyzed the contracts in the peanut market.

Existing economic literature on agricultural contracts shows that there are two main reasons for entering into contracts: the first one is a way to share risks and the second one as a mean to reduce transaction costs. Furthermore, within the transaction cost motive the economic literature differentiates between the asset specificity and hold up problem, which is more typical of production contracts.

By entering into a marketing contract farmers and processors can share the risks inherent to different aspect of the productive activity. Thus, two main risks can be considered: yield risk (i.e., risk associated to the production) and price risk. The combination of these two risks can give origin to income risk.

Farmers face yield risk when they enter into a forward contract which stipulates the deliver of certain amount of commodity that farmers expect to harvest. If the contract does not specify any clause related to weather problems then, the farmer will bear all the risk as he would be forced to purchase part of the commodity in order to comply with the contract. This can be significantly expensive due to weather problems the supply of the commodity is particularly short and the farmer has to buy the commodity in the spot market.

Where marketing contracts are particularly effective is when its objective is to share price risk between the parties. The typical case is a forward contract which specifies the price that the farmer is going to receive. However, as point out in Harwood et al. (1999) both processors and farmers can be subject to price risk in case that the forward price agreed in the contract depends on a variable price to be observed such as a futures price.

Marketing along a supply chain involves a number of stages each one of them with a number of costs. By contracting farmers and processors can coordinate these stages and minimize the costs. This is the aspect of the supply chain management and of transaction is emphasized by Bogedoft et al., 2004. Furthermore, these contracts can contain incentives, for instance for producers, to avoid opportunistic behavior and to comply with the product delivery.

Asset specificity refers to durable investments that are undertaken in support of particular transactions, as it is always possible that the transaction will be stopped, i.e., hold up. By contracting and setting a compensation scheme it is possible to reduce the costs related to the hold up and therefore promote the required investment, which otherwise would have been stopped or reduced to a non-optimal level.

The costs of search, measurement and monitoring are of particular importance as a reason for marketing contracts. Information costs often arise in market transactions and they include the search cost of finding a buyer and a seller in the transaction, the measurement cost of determining product quality, and the monitoring cost of ensuring that all terms of a transaction are met including quality and quantity specifications, delivery terms, and payment (Milgrom and Roberts, 1992; MacDonald et al., 2004).

The costs of search are particularly important for processing firms, which are capital intensive and exhibit fixed capacity. Cost minimization of these firms requires producing at full capacity at a steady rate that requires a continuum and stable flow of commodity of the right specification entering into the productive process. One possibility for the processing firm is to store enough raw materials to transform during the entire processing season (i.e., until the agricultural commodity is harvested again and becomes abundant), this would increase enormously the storage, financial and management costs associated to the required capital to buy the inventory and to maintain the required storage capacity. The other possibility, a more convenient one for the processor, is to have a constant flow of commodity coming from farms to processing plants maintaining only a reduced quantity of inventories (pipeline or working inventories). This possibility, however, increases the costs of coordination, as the processor would like to reduce the risk of stock out and not having enough raw materials to process. The situation is even worse if the processor has already signed forward contracts to deliver the processed product.

In all the mentioned reasons for contracting it is possible that one or both parties can exercise market power by imposing contract terms that forces the other party to assume most of the risks, a price that is closed to the marginal costs but not as low as will make the party not to sign the contract, or by splitting some costs in an uneven way. How market power can appear in a contract depend on the particular characteristics of the

transaction and therefore it makes important to analyze the specific terms of the contract that we do in the next sections.

III. Characteristics of Peanut Contracting

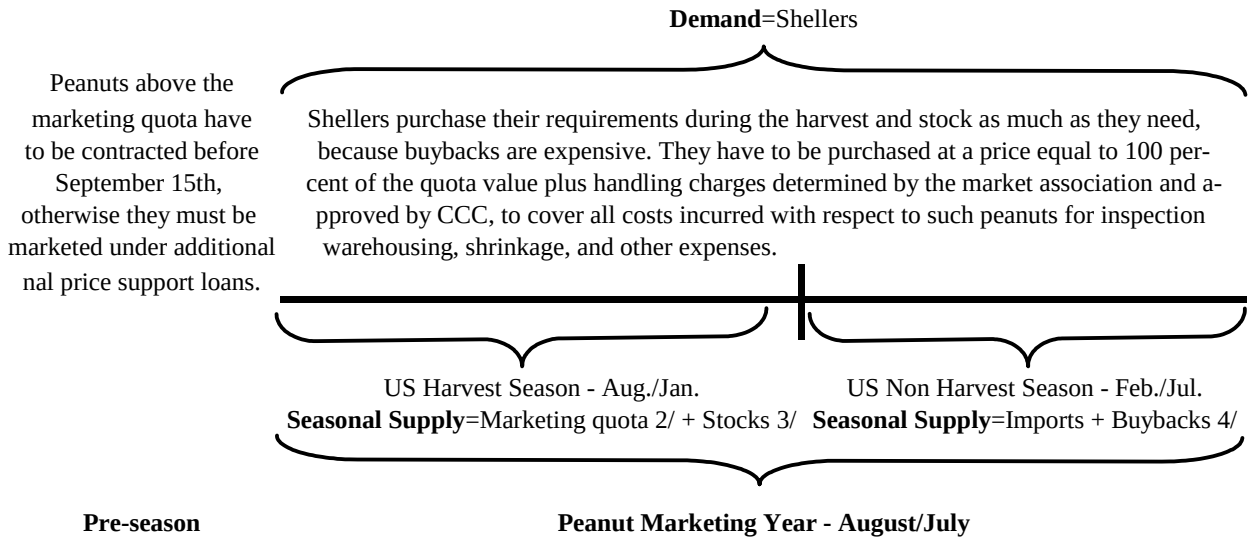
Before analyzing the characteristics of peanut contracts it is worthy to start with a description of the previous peanut marketing system.

1. Peanut Marketing Background

The 2002 Farm Act eliminated the marketing quota system that although with several modifications, was the core of the support of the peanut since 1933.

Until the 1996 Federal Agricultural Improvement and Reform Act (1996 Farm Act), the peanut program was a two-tier price support program, with peanut production destined to food products (e.g. peanut butter, snacks, candies, etc.) limited to an annually established quota (i.e., “poundage quota”) designed to uphold prices at US$ 610 per short ton. Non-quota peanut production (i.e., the so-called "additional") was destined for the export or the domestic crushing market (i.e., peanut oil and meal) and, in 2001, it was eligible for a support price of US$ 132 per short ton (USDA-ERS, 2002). Figure 1 presents in a schematic way the US peanut marketing year before the 2002 Farm Act.

Figure 1. US Peanut Market before the 2002 Farm Act 1/



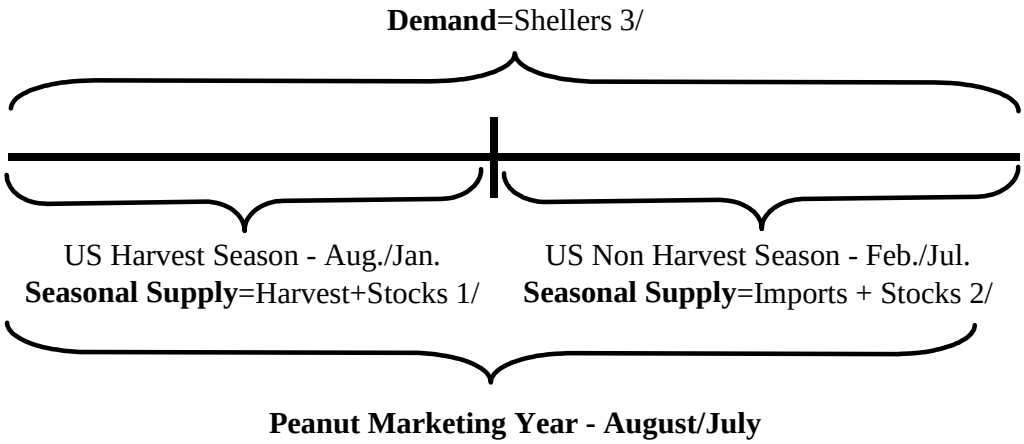
Notes:
1/ Based on 1996 Farm Act legislation.
2/ Supply for exports and crush are the quantities previously contracted.
3/ Inter-year stocks in the form of shelled peanuts.
4/ Buybacks are stocks under the CCC purchased by food processors above the marketing quota

It is clear from the figure that marketing peanuts was a regulated activity, with farmers disposing their peanuts almost at harvest either by contracting them for export or crush,

selling them as part of the marketing quota or pledging them to the CCC to receive the support price for additional peanuts. Under such a system, there were no incentives for farmers to invest in on-farm stocks since the entire harvest had to be marketed through the channels set by the USDA. Furthermore, due its functioning the system did not provide incentives to the formation of a spot market for peanuts.

The quota system was replaced by a marketing assistance loan program for peanuts under which producers can get a government loan at a pre-determined marketing loan rate by pledging their crop as collateral. During the term of the loan (i.e., 9 months) producers can either forfeit the loan or repay it at the lesser of the Loan Repayment Rate plus interest or the USDA-set repayment rate, which has purpose of minimizing potential loan forfeitures and storage costs and promoting competitive marketing of peanuts both domestically and internationally. Producers that do not take the marketing loan are entitled to a so-called deficiency payment that equals the difference between the loan rate and the repayment rate. In contrast with the previous peanut program, under the current regime all peanut producers have equal access to the marketing assistance loan program. Figure 2 represents the marketing year under the current legislation.

Figure 2. US Peanut Market after the 2002 Farm Act



Notes:

1/ Inter-year stocks (these stocks may be in shelled peanuts form).

2/ Intra-year stocks (e.g., stocks under MLP).

3/ A relatively small proportion of peanuts are exported un-shelled (e.g. 13 % in 2003) otherwise shellers are the first buyer of un-shelled peanuts.

One aspect that is worthy to note in figure 2 is that during the period from February to July the US crop competes with imports. Under the previous regime higher domestic prices made attractive the US peanut market for exporters who took advantage of the increasing marketing access in the tariff rate quota for peanuts (see Fletcher and Revoredo, 2002 for an analysis about tariff rate quotas for peanuts). However, the new regime exporting peanuts to the US has lost its attractiveness and the domestic market is basically being supplied by domestic growers.

2. Marketing Contracts for Peanuts

Table 1 summarizes the main clauses of the two observed contracts for peanuts: the forward contract and the option to purchase contract.

Table 1: Comparison of the Characteristics of the Forward and Option Purchase Contracts

Clause	Forward Contract	Option to Purchase Contract
Background information	Farm planting intentions, specifying area under irrigation, variety and average yield.	Farm total acres planted, specifying are irrigated and non irrigated and net pounds (not clear if planned or actual in case the option is signed after harvest)
Acreage planted commitment	Farmer will plant no less than 90 % of intended acreage and inform the sheller about the actual acreage.	None
Quality contracted	Specifies type, grade standard and whether peanuts are high oleic.	Specifies that peanuts are segregation 1, fit for consumption and complying with the federal regulations related to food safety and use of pesticide.
Production standard	The use of pesticides not specifically labeled for peanuts is a breach of the agreement. Also seller warrants that the peanuts shall be fit for human consumption.	The use of pesticides not specifically labeled for peanuts is a breach of the agreement. Also seller warrants that the peanuts shall be fit for human consumption.
Product	An specified quantity of peanuts (in pounds).	An specified quantity of peanuts of segregation I (in net pounds).
Price	Two modalities: (1) a flat rate in US$/farmer stock ton and (2) a premium above the Loan Repayment Rate at the time of delivery.	A premium above the Loan Repayment Rate at the time of delivery. In addition, farmers are paid an option price per net ton. of peanuts.
Discounts and premiums	Based on USDA price table for peanuts.	Based on USDA price table for peanuts.
Delivery date	Set in the terms of the contract.	The option can be exercised at any time since the sign of the option to June 30 (end of marketing year for peanuts).
Delivery place	Depending the case it is set in the contract at a buying point, at a storage facility or at specific collection point.	At the exercise of the option, if the peanuts are under storage the farmer will transfer the warehouse receipt and the sale will be FOB at the storage location or if not under storage it will be FOB the inspection point.
Transportation cost	It is paid by the sheller, even if there is multiple deliveries	Transportation cost to the inspection point is paid by the farmer while from the warehouse to the shelling plant is paid by the sheller.
Peanut inspection	Farmer agrees that the sheller/representatives will have access to inspect the planted acreage and perform chemical tests.	Farmer agrees that the sheller/representatives will have access to inspect the planted acreage and perform chemical tests.
Right of first refusal	Farmer will not sell uncontracted peanuts before offering them first to the sheller and at the same terms. If the peanuts are not sold, the sheller has again the right of first refusal over those peanuts.	Farmer will not sell segregation 1 peanuts before offering them first to the sheller and at the same terms. If the peanuts are not sold, the sheller has again the right of first refusal over those peanuts.
Failure to deliver	Farmer has to deliver the agreed amount of peanuts and if part of it is not covered the sheller can covered at farmer's expense. Wheather related problem is presented as an exception to the rule.	Farmer has to reimburse the option price received from the sheller. In addition, the sheller is entitled to a compensation set by law and the sheller is entitled to a temporary/permanent restraining order against the farmer.

It should be noted that both contracts are quite similar being their main difference their purchasing procedure, i.e., the fact that one is a forward contract and therefore a purchase of the peanuts is mandatory (unless some of the conditions for breaching the contract

occurs) and the other is an option and therefore only produces a purchase when the owner of the option decides to exercise it.

There are several aspects of the contracts that are basically the same. In terms of the productive background of the farm they require the farmer to provide similar information (i.e., where the peanuts are planted –irrigated versus non-irrigated land- variety and average yield). With respect to aspects associated to quality and production standards, these are regulated by USDA and therefore they have necessarily to be met, furthermore, both contracts consider the possibility of inspecting the farms to verify that farmers are complying with the safety rules. In addition, the contracts set similar delivery conditions such as the transfer of warehouse receipts or the delivery of the contracted peanuts at the buying or inspection points. The contracts also include similar condition about the right of first refusal that grants shellers the preferential right to purchase uncontracted peanuts produced in farms that have contracted. Finally, if farmers fail to deliver the peanut, the sheller is entitled to purchase peanuts at expense of the farmer.

Aspects that are partly different are the pricing of the peanuts, which are basically associated to the different nature of both contracts. However, not only both contracts consider forward pricing formulas that are the value of the repayment rate plus an agreed premium but also the discounts and premiums applied due to quality, which are based on USDA regulations. In terms of transportation costs, when they exist (i.e., excluding the case when the peanuts are in storage in which case warehouse receipts are transferred) the forward contracts cover transportation costs from the farm to the delivery point while in the option contract the farmer assumes the transportation cost to the inspection point.

IV. Discussion about Peanut Contracts

In this section we address two issues, first is a qualitative analysis of some of the clauses in the peanut contracts that are not regulated by USDA. Second, we sketch how the different contracts can be used to organize the marketing of peanuts.

1. Analysis of the Main Clauses of the Peanut Contracts

The first issue is related to the pricing of peanuts in both contracts. Except in the case when the forward contracts indicate a flat price, the price stipulated in the contracts is set as a premium over the repayment rate. On the one hand, unfortunately, there is no information about the premium paid for the peanuts to make inferences about how they are set. On the other hand, it should be noted that under these contracts farmers are not exposed to price risk. Thus, in the case when the farmer has made use of the marketing loan program, the final price that farmers receive for the peanuts will be the marketing loan rate plus the premium, being the only source of variation any discrepancy related to the quality of the peanuts sold. However, the processor bears the price risk as ultimately the repayment rate is set by USDA, and it can be above or below the marketing loan rate. This might be a reason why shellers decide to use the option to purchase type for some of the contracts.

Production risk is mostly borne by the farmers as they agree to deliver a determined amount of peanuts of certain variety and grade. In the case of the forward contracts, there is a clause in which failing to deliver the peanuts due to weather problems is consider an exemption to the rule that the sheller will purchase the required peanuts at the expense of the farmer. This clearly indicates some level of production risk sharing.

The condition about the right of first refusal, i.e., the right to make an offer before offers from others is a common clause in contracts. Some analyses consider that this condition might discourage competition and the seller may receive lower prices (Purchasing Law Report, 2001), however, it is not clear whether this is more than a commercial practice.

In summary, based on the two types contracts there is little scope for market power that can affect farmers as they are protected by the MLP. If there is market power one might speculate on a bilateral monopoly situation where shellers and USDA compete in the peanut market such as is the case presented in Nadolnyak, Revoredo and Fletcher (2003), where USDA competes by setting the repayment rate, which reduces the cost of the marketing loan program, and shellers compete by decreasing their demand for peanuts and therefore forcing USDA to carry more stocks over and therefore pressing in a reduction of the repayment rate.

2. Contracts as a Marketing Device for Peanut Market

The purpose of this section is to sketch more than formally model, a possible functioning of the current peanut marketing. This is to contribute to the understanding of how the peanut market operates after the 2002 Farm Act, a task that has been reported as elusive (see Dohlman, 2004).

To understand why a sheller would be interested to enter into a contract let us consider the following straightforward marketing alternative. At the harvest time, the sheller purchases enough peanuts to keep his plants running for a number of months not worrying about future needs as he knows that they can be acquired from peanuts under storage. In the absence of a spot market and lacking of on-farm storage, farmers who have not sold their crop at the harvest enter into a marketing loan program and store the commodity until a sheller approaches them to buy their commodity. In which case, they would repay the marketing loan and deliver the commodity to the sheller.

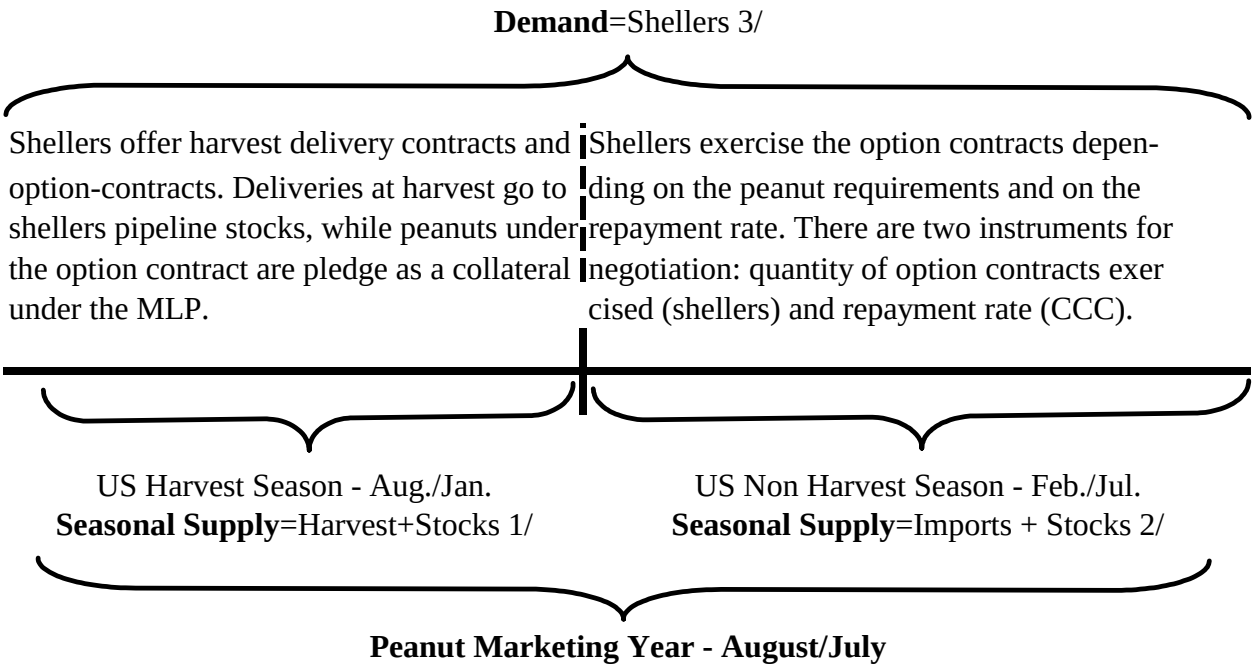
If peanuts were a homogeneous commodity the aforementioned strategy would be quite feasible, however, as the sheller has to put together a supply of peanuts of a determined variety he would need to go through the searching process of finding the required quantity of peanut variety.[2] It is important to recall that peanuts for feed and food are stored under the marketing loan program (FSA, 2004). This can be costly in the sense if that year was a bad crop year; quantities of determined grade might be scarce increasing the searching costs as the sheller would need to go thorough several farmers. In addition,

[2] This is similar to processors purchasing futures contracts in order to hedge against price risk but not to accept delivery of the commodity.

even if the peanuts were graded before entering into storage, they would need to be tested again, to verify that their characteristics remained the same during the time in storage (i.e. no presence of aflatoxin, or other materials).

By entering into a contract, processors automatically create a network of suppliers bound to deliver the commodity according the agreed conditions. The processor can establish its contracts to reflect obligations taken on the delivery of the processed product and also considering any random change in the demand for his processed product. Thus, as shown in figure 3 either before the harvest or at the harvest time processors can issue a number of (1) contracts for immediate delivery, possible at a flat price, (2) forward contracts for later delivery and/or (3) option to purchase contracts.

Figure 3. New Contracts as a Strategy for Marketing Peanuts



Notes:

1/ Inter-year stocks
2/ Intra-year stocks (e.g., stocks under MLP).
3/ A relatively small proportion of peanuts are exported un-shelled (e.g. 13 % in 2003), otherwise shellers are the first buyer of un-shelled peanuts.

The forward contracts allow the processor to receive the peanuts promptly without having to store it on farm. Furthermore, due to the presence of the marketing loan program, the storage cost is basically assumed by USDA, while in the previous system, shellers had to carry more peanuts over because of the costs of purchasing peanuts that were in storage.

The role of the option to purchase contract can be understood as a negotiation mechanism (see figure 3), as a safeguard measure in case USDA increases the repayment rate too high, in which case the sheller decides simply not to exercise the option, or as a mechanism to increase easily their supply of peanuts in case of an unexpected surge of the demand for peanuts.

One implication of the aforementioned description of the peanut marketing process is that the spot market plays a small role in the marketing of peanuts and therefore it explains why USDA has had problems setting the repayment rate for the MLP. If as reported by USDA (Dohlman et al., 2004) four-fifths of the peanut are marketed through contracts, then the spot market is a thin market with all the implications for price discovery analyzed by Sheldon (1996). The problem is also evident in the fact that the USDA-National Agricultural Statistical Service does not report price for the period from January to July 2004 because the number of transaction was too small to be average price or because they were not published in order to avoid disclosure of individual operations (USDA-NASS, 2005).

V. Conclusions

The analysis points out that the main role of the contracts is to replace the previous marketing structure existing before the 2002 Farm Act, where peanut marketing was quite regulated. In this sense, the reduction of transaction costs related to the coordination of the supply chain associated with the continuous flow of peanuts of a determined grade seems to be the most plausible explanation.

It is clear that with both forward and option contracts the price risk is absorbed by the sheller, while the farmer bear the risk of producing or purchasing the required amount of peanuts to comply with the contract. Therefore, given the amount of information available it is not possible to infer any sort of market power.

The two contracts available for the analysis can be combined to create a network that allows the reduction of the stock out risk of peanuts, which would increase the average cost of production and minimize the cost of maintaining high levels of inventories.

Finally, the implications of a thin spot peanut market is that USDA will continue having difficulties in their search for an appropriate cash price when trying to compute the repayment rate.

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