



# The changing nature of transactions in the Uruguayan rice industry: chain attributes and strategic connotations

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## **Abstract**

Se analiza la incidencia del Mercosur y la desregulación comercial, a partir de 1990, en el mercado nacional del arroz. Se consideran las preferencias en los canales de marketing en el marco de estos cambios, para lo que se realiza una encuesta a los productores en el departamento de Artigas.

Palabras clave: obligaciones, Industria Arrocera, Canales de Distribución, Uruguay.

# **THE CHANGING NATURE OF TRANSACCIONES IN THE URUGUAYAN RICE INDUSTRY: chain attributes and strategic connotations**

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## ***ABSTRACT***

The vertically contracted marketing system (VCMS) of the Uruguayan rice industry has always been considered as an example of organizational paradigm by agribusiness professionals and scholars in the country. Since 1990, due to MERCOSUR and trade deregulation, the rice agribusiness system in Uruguay is under a new set of market rules and competitive pressures. After Brazil lifted its ban on paddy rice imports, Brazilian mills were allowed to source paddy rice directly from Uruguayan growers and exporting firms. Also, Brazilian producers are investing in Uruguay, buying or leasing land and building new rice drying and storing facilities. This new entrants are less committed than incumbent producers to the traditional VCMS, and many prefer to export directly to Brazil.

Significant concern exists among industry members about how direct exporting and open market developments could affect the VCMS coordination mechanisms and the future competitiveness of incumbent milling firms. The question of whether or not to switch marketing channels is in most large growers agenda at the moment. This paper is a first attempt to understand the growers perspective, and likely behavioral changes that might result from this new trends in the rice market and from the existence of dual marketing channel situation.

To address these issues, a survey was carried out in the northern department of Artigas. The survey was aimed to analyze how growers perceived new marketing channel options; if the issue was of any importance to them; what their perceptions were about other growers likely marketing behavior; what group of channel attributes were relevant for them to choose between marketing channels; and their eventual willingness to give up on the preferred channel attributes and switch marketing channel if offered a higher price.

The article sustains the view that the VCMS early adopted by the rice industry was the transaction costs economizing response that better fitted historic market circumstances and the industry's early choice of strategic positioning. Brief information on the industry's performance, structure and institutional framework is provided. Finally the article speculates about future strategic developments and the need for interdependent fit and adjustment between strategic positioning and supply channel governance structures.

## INTRODUCTION

The vertically contracted marketing system (VCMS) of the Uruguayan rice industry has always been considered, by professionals and scholars of this country, as the cornerstone of its international competitiveness and as benchmark of chain coordination efficiency. More than 85% of production is contracted between growers and milling firms. Per hectare productivity is higher than in Brazil and Argentina and similar to USA, (see table 1). Uruguay is exporting technology and new seed varieties to Argentina and to Brazil. Its four leading milling-exporting firms have a history of exporting to countries like Iran, Senegal, Mexico, Chile, Peru and recently to the USA.<sup>1</sup> Indeed, the impressive and continuous growth of rice production, yields and exports during the past two decades nurtured the industry's status of organizational paradigm.

**Table 1: Rice yields in Uruguay and USA; (kg./hectare)**

Season	USA	Uruguay
1991/92	6047	4861
1992/93	6049	5152
1993/94	5696	4654
1994/95	6287	5500
1995/96	5900	6450
1996/97	6475	6620

Source: Ing. Agr. Lucía Salgado

Notwithstanding the Uruguayan rice industry's impressive performance, new market forces are challenging the traditional form of organizing transactions. After Brazil lifted its ban on paddy rice imports, Brazilian mills begun sourcing directly from Uruguayan growers and exporting firms. Brazilian producers are investing in Uruguay, buying or leasing land and building new rice drying and storing facilities. This new entrants are less committed than incumbent producers to the traditional VCMS, and many prefer to export directly to Brazil. Tables 2 and 3 present recent growth in paddy rice exports and the recent evolution in the type and number of exporting firms. We will be referring to three types of exporter: milling firms; exporters (without ownership of milling facility); and growers which export directly.

<sup>1</sup> R. Bierlen, E. Wailes, G. Cramer, *Agribusiness*, Vol. 12, No4

**Table 2: Exports per type of firm (thousand metric tons)**

	Leader (milling firm)	Top 4 mills (include leader)	Exporters	Grower- exporters	TOTAL EXPORTS
88/89	173	264	0,6	0	299
89/90	146	221	0,1	0	249
90/91	154	229	2,7	0	267
91/92	N/A	N/A	N/A	N/A	391
92/93	250	360	44	7	480
93/94	206	311	43	9	403
94/95	273	370	80	26	530
95/96	N/A	N/A	N/A	N/A	644
96/97	333	473	106	54	714

Source Comisión Sectorial del Arroz

**Table 3: Number of exporting firms per type and exports of paddy rice**

	FIRMS			EXPORTS (thousand tons)	
	Mills	Exporters	Grow-exp.	Paddy	Total
88/89	17	1	0	1.6	299
89/90	17	1	0	2.2	249
90/91	19	4	0	0	267
91/92	18	7	3	0	391
92/93	18	14	9	43	480
93/94	16	11	10	39	403
94/95	15	16	19	83	530
95/96	N/A	N/A	N/A	N/A	644
96/97	19	15	28	114	714

Source: Comisión Sectorial del Arroz

Significant concern exist among industry members about how direct exporting and open market developments could affect VCMS competitiveness and the competitiveness of incumbent leading firms. The question of weather or not to switch marketing channels is in most large growers agenda at the moment. This research investigates to what extent local producers might prefer to move away from contract marketing and sell spot.

## THE URUGUAYAN RICE AGRIBUSINESS SYSTEM

Rice production is located next to the Brazilian border, principally on the eastern and northern departments of Rocha, Treinta y Tres, Cerro Largo, Rivera and Artigas. The fastest growing areas in the north, in the department of Artigas, where this survey was conducted. As shown in table 4, the total number of growers increased to a maximum of 783 in 1991 and has been slightly decreasing ever since, while total acreage, production and yields have been increasing continuously.

**Table 4: Acreage, production, yields, quantity of growers**

Year	Total area (hectares)	Production (metric tons)	Growers	Area/grower (hectares)	Yield (kg/hectare)
84/85	84.929	430.235	386	220	5.066
85/86	85.749	405.769	429	200	4.732
86/87	83.253	338.666	430	194	4.068
87/88	81.237	391.188	424	192	4.815
88/89	97.178	535.394	514	189	5.509
89/90	82.522	365.407	528	156	4.428
90/91	109.794	522.097	632	174	4.755
91/92	127.268	618.708	783	162	4.861
92/93	135.739	699.294	745	182	5.152
93/94	134.332	625.238	722	186	4.654
94/95	146.268	804.474	729	201	5.500
95/96	150.000	967.500	759	198	6.450
96/97	155.000	1:026.250	669	232	6.620

Source: Ing. Agr. Lucía Salgado, base on Comisión Sectorial del Arroz

There are 19 milling firms with a total of 34 mills. Only three firms have multiple mills. The total hourly milling capacity is 160 mt. tons per hour. The largest firm accounts for 57% of total capacity. The five largest firms account for 68% of total capacity. Almost 90% of total production is exported. Traditionally, most of the volume exported is of milled rice. But since 1991 exports of paddy (unmilled, rough rice) and brown rice (partially milled) increased. Exports of paddy rice jumped from 2 to 114 thousand tons between 1990 and 1997. Currently, paddy rice exports account for 10,4% of total rice production. Paddy rice is mostly exported by growers and by firms which do not own milling facilities. Since 1990 the principal destination of Uruguayan exports is Brazil.<sup>2</sup>

### Institutional framework

The Uruguayan rice agribusiness system is coordinated through various institutions and mechanisms. The Asociación de Cultivadores de Arroz (ACA), which is the national growers

<sup>2</sup> L. Salgado and J.C. Rey, Estudio Sectorial de la Cadena Agroindustrial del Arroz

association was funded in 1947. Only three years later the Gremial de Molinos Arroceros (GMA), which is the national association of all the milling firms, was also funded. ACA and GMA provide for efficient upstream and downstream flow of information and they are both responsible for negotiating every year the price that growers will receive. ACA also provides insurance and laboratory analysis services to its members. ACA representatives integrate the technical advisory board of INIA, the national agricultural research institute.

Both ACA and GMA integrate the Comisión Sectorial del Arroz (CSA) which was placed in functions by the government in 1968 to provide for the necessary public-private coordination. CSA is integrated by delegates of ACA, GMA and by every single governmental agency which might have something to do with the industry. The CSA collects and processes statistical information on production, acreage, export prices, etc. The information provided by CSA is used by ACA and GMA for price negotiations. Most of the information in this article was originated by CSA.

A high degree of horizontal coordination also exists between the major milling firms. Four of them are co-owners of a rice parboiling facility. ACA and GMA also coordinate with support institutions and services: research and development, credit, logistics, transport infrastructure, government development programs.

### **Pricing agreement**

Most of the growers, currently 85%, seed the rice after signing a supply contract with a milling firm. The price is to be determined after the grower delivers the harvest. The price results from an agreement between ACA and GMA, whereas both parties accept that the price to the growers is to be related to the average of all the rice exported during. Both parties agree to share all needed information such as exports volumes, destinations, prices, date of delivery, quantities of rice received, stocks, quality, losses, etc.

A provisory price is determined by ACA and GMA no later than the 30<sup>th</sup> of June, that is almost two months after the harvest, and based on the prices of the first exports of the year and on market expectations. The definitive price is agreed after the end of all the exporting season, that is the 31<sup>th</sup> of March of the subsequent year. If an agreement were not possible, the price is determined by two arbitrators, one appointed by ACA and the other by GMA. The quality standards used by the industry were issued by the Ministry of Agriculture and advised by ACA, GMA and CSA. To promote the seeding of higher quality varieties, processors are paying an extra 5 to 8% premium on certain types of rice.

**Table 5. Price to the grower, tax redemption and total income per bag.**

Price to the grower, tax redemption, total income (US\$ per 50 kgs, bag)				
Year		Price	Tax redemption	Total income
1982/83		10,08	0,39	10,47
83/84		8,75	0,33	9,08
84/85		7,31	1,00	8,31
85/86		6,96	1,18	8,14
86/87		6,76	1,25	8,01

87/88		9,50	0,55	10,55
88/89		8,85	0,70	9,55
89/90		8,84	0,00	8,84
90/91		11,50	0,15	11,65
91/92		7,64	0,36	8,00
92/93		7,66	0,36	8,02
93/94		9,49	0,38	9,87
94/95		8,65	0,45	9,10
95/96		9,80	0,55	10,35

Source: Comisión Sectorial del Arroz

**Table 6: The Price for paddy was reported as follows:**

SEASON	PRICE (US\$/ton FOB)
92/93	117
94/95	207
95/96	198

Exports of paddy rice tend to be concentrated on the second semester of the season when the prices in Brazil are higher. To compare the VCMS's price with paddy export prices, extra costs and risks of storage, transport, and financing have to be considered.

A new problem for the rice institutional pricing system is how to handle the "thin market" problem<sup>3</sup>. Once early season export deals of paddy rice are closed, price information spreads. If initial prices are high, like it was the case in 1998 due to a very poor Brazilian harvest, the grower's expectations about the VCMS's price raise. The VCMS pricing mechanism becomes under pressure because it is a pooling pricing system based on an average of all year exports. The problem is that whereas individual growers can speculate and decide to sell at any point of time, milling firms can not. Although prices might be high at any point of the season, it is very difficult, and sometimes inconvenient for milling firms to concentrate the selling on just a few months. Daily milling capacity is limited. Concentrating all sells in a few months would require for mills to sell paddy rice instead of milled rice. Most regular customers of milled rice expect to be supplied with an even flow of rice during the year. Milling firms might have other strategic long term concerns also, like maintaining its presence in overseas markets. Also for value added marketing strategies and to gain a preferred supplier status, milling firms have to maintain an all year even supply of previously well defined qualities and quantities, sometimes at previously agreed prices.

One further problem with the "thin market" situation is that, if markets are highly volatile or do not clear due to disparities to any sorts of institutional asymmetries, then the growers are continuously faced with tough choices and the need to reconsider marketing decisions. In this type of situations, temptations of opportunistic behavior are strong and the chances of actually behaving opportunistically are high if assets are not highly specific and codependent. Unlike 50 years ago, a market for rice farming assets exist, and farming assets are no longer codependent with any milling firm. Selling through the VCS or directly in the open market, takes exactly the same type of assets. Today growers do not face any hold up risks as it might have been when they were dependent on a

<sup>3</sup> W.G. Tomek, "Price Behavior on a Declining Terminal Market", American Journal of Agricultural Economics

few local mills to sell the rice to export markets<sup>4</sup>.

## SUPPLY CHANNEL PREFERRED ATTRIBUTES

The present study is an attempt to understand the fundamental underpinnings which might explain the appearance of new forms of organizing transactions. It is argued here that the VCMS early adopted by the rice industry was the transaction costs economizing that the VCMS early adopted by the rice industry was the transaction costs economizing response to the transactional technicalities all along the chain which were determined by historic specific market circumstances. The basic hypothesis underlying this study is that 50 year ago, when the rice exporting industry originally started developing, the nature of transactions were such that the VCMS or the producer-milling interphase was perceived by all interested parties as highly interdependent. At that time, investments in highly specific and codependent production and processing assets were needed by both, producer and milling firms, in order to gain export markets access and economies of scale. Transaction were not frequent between growers and milling firms and between milling firms and exporters. The degree of uncertainty was high due to the fact that export markets were distant, unsecured, not well known and mostly unstable, as reflected by the uneven volumes exported by country of destination since 1984 on table 2.1. Finally, strategic related investments were highly codependent between growers and milling firms. Also, unlike other agribusiness systems, the proportion of domestic consumption to total exports of rice was irrelevant compared to other commodities when the industry was born (Table 2.2).

**Table 7: Exports by country of destination (in thousands of metric tons.)**

	84/85	85/86	86/87	87/88	88/89	89/90	90/91	91/92	92/93	93/94	94/95	95/96	96/97
Brasil	107	176	83	134	169	235	253	294	360	321	343	462	513
Chile	0,2	0,2	0,3	0,5	0,8	4	5,4	12,6	12	15	11	9	12
Peru								40	68	11	73	73	60,5
Iran	93	0,5	78		94			25			40	30	50
Mexico						0,5		10	15	24	3	4	0,3
Portugal	19	18	20	20		0,6			12			5	0,2
Senegal											51	34	42
Holland	18		37	50	17	6		4					4,7
Spain												3	2,3
Tin.Tob.												3	14
USA													10
Argentina							1	4	6	3	4		

Source: Comisión Sectorial del Arroz

<sup>4</sup> Williamson, O.E. (1975). Markets and Hierarchies. Free Press, New York.

**Table 8: Relation exports/total production for the leading rice producing countries**

Country	Percentage
Uruguay	89
Australia	90
Argentina	59
USA	41
Thailand	38
Pakistan	35
Vietnam	15

Source: Ing. Agr. Lucía Salgado

Producers did not have direct access to distant overseas markets and information technology was, at that time, somehow rudimentary. Early economies of scale and operative and transactional expertise were needed for firms to trade overseas. The transaction cost economizing response for organizing the industry was then one of fully vertical integration for the milling-exporting inter-phase, whereas for the growing-milling inter-phase coordination and incentives were provided by contractual arrangements supported on a successfully designed institutional framework.

Unlike 50 years ago, due to MERCOSUR and trade liberalization, the Uruguayan industry is faced with what, for practical purposes, is a regional-domestic highly segmented 11 million metric tons market integrated by hundreds of mills. Based on TCE it can be argued that the nature of transactions is different today as it used to be under different circumstances. A market for assets exists and enough information is perceived to be available. To export to Brazil is not much different than to sell locally.

Supply channels display different attributes as products and services do. Producers, as well as processors and distributors, will value differently the available supply channel options depending on what they consider to be key transaction attributes and key transaction costs from each one's perspective<sup>5</sup>. Whether or not growers will switch marketing channels depends on the attributes displayed by the channels and on how much growers' value different channel attributes. Transaction costs economics theories constitute a useful framework to understand marketing behavior and the choice of supply channel by producers, processors and distributors.

Transaction costs are commonly classified in coordination costs and motivation costs. Coordination costs have mainly to do with all detailed information needed for a transaction, and the time and energy devoted to communication and negotiation between all interested parties. From the producer perspective, information costs is the time and energy incurred when searching for reliable buyers and discovering the right prices and right processes to sell; also the risk and potential losses of missing the right target. Negotiation costs are the time and energy devoted to actually closing the deal, and also the money left on the bargaining table. Once the transaction is actually closed, then monitoring and enforcement costs might exist. Monitoring costs are mostly incurred by the buyer to control the quality and standards of products delivered. Open market transactions with on sight payment and delivery do not need much monitoring and enforcement due to the fact that spot, on

<sup>5</sup> J.E. Hobbs, *Agribusiness*, Vol. 12, No.6, 509-523 (1996)

sight, exchanges do not allow for much misunderstanding. Enforcement costs are the costs of dealing with ex post misunderstandings, the cost of avoiding litigation, and the costs of litigation.

Motivation costs arise from information **incompleteness and asymmetries**- situation in which the parties to a potential or actual transaction do not have all the relevant information needed to determine whether the terms of an agreement are mutually acceptable and whether these terms are actually being met. Another type of transaction cost connected to motivation arise from **imperfect commitment**- the inability of parties to bind themselves to follow through on threats and promises that they would like to make but which, having made, they would later like to renounce. As can be seen, motivation costs refer to those situations when mutually advantageous transactions fail to occur or costly arrangements have to be made to protect against opportunistic behavior.

Transaction costs affect both market and non market organizations. Which type of organizations might perform what type of transactions more efficiently depends on the nature of the transaction. According to the transaction costs approach, the variety of ways of organizing transactions found in the world reflects the fact that transactions differ in some basic attributes. Five kinds of transaction attributes play important roles in our analysis: 1. the specificity of the assets required to conduct the transaction; 2. the frequency with which similar transactions occur and the duration or period of time over which they are repeated; 3. the complexity of the transaction and the uncertainty about what performance will be required; 4. the difficulty of measuring performance in the transaction; 5. the degree of connectedness of the transaction to other transactions involving other people.<sup>6</sup>

A grower's perspective of channel's attributes or costs will be different depending on the nature of the product markets to be served and of the firm's positioning and key strategic resources. A rice grower of any size with a strategic focus on productivity is not likely to export directly to distant markets. A large rice grower less focused on production technology might consider forward integration into drying and storing as a means of increasing total income. An individual grower with a pessimistic view of the commodity side of the business might be willing to commit his harvest to horizontal and vertical cooperative value added ventures. A rice mill, with a well developed buying network, and a willingness to serve broad popular segments through less demanding wholesale markets might choose to buy most of the rice in the open market. On the other hand, a large supermarket chain focused on private brand differentiation and marketing strategies might prefer to avoid the information, negotiation and monitoring costs of buying from numerous occasional suppliers, and prefer to maintain long lasting relationships with fewer and highly reliable suppliers.

The question of whether or not to switch marketing channels was high in most large growers agenda at the moment of this study. Growers were making their minds and comparing between alternative channel attributes. Through interviews with industry experts, a list of attributes was identified as the most relevant for growers to choose between supply channels. The following table presents what are considered to be the most relevant attributes of both the VCMS and the open market system.

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<sup>6</sup> Milgrom & Roberts

**Table 9. Supply channel attributes**

Vertically Contracted Marketing Channel

<b>Short Term</b>	
<b>Costs/cons</b>	<b>Benefits/pros</b>
Lower price	Access to resources: credit, services and technology
	Low transaction costs
<b>Long Term</b>	
<b>Costs/cons</b>	<b>Benefits/pros</b>
	Better average price
	Low motivation costs
	Market diversification
	Allows value added strategies
	Support R&D activities

Open Market Channels

<b>Short Term</b>	
<b>Costs/cons</b>	<b>Benefits/pros</b>
High transaction costs	Higher price
Financial cost during storing	
Risk of drying, storing, shipping	
<b>Long Term</b>	
<b>Costs/cons</b>	<b>Benefits/pros</b>
Investments; drying, storing	End up with own marketing capabilities
Dependent on commodity single market	

**THE SURVEY**

A survey was carried out in the northern department of Artigas.<sup>7</sup> The survey was aimed to analyze how growers perceived new marketing channel options; if the issue was of any importance to them; what their perception was about growers likely marketing behavior; what group of channel attributes were relevant for them to choose marketing channels; and their eventual willingness to give up on the preferred channel attributes and switch marketing channel if offered a higher price.

To investigate growers' preferences, and for practical reasons, the attributes listed in Table 9 were grouped ex –ante in three categories:

1. PRICE: mostly short term attributes with price as the most important factor;

<sup>7</sup> Survey designed by the author and conducted by Equipos Consultores

2. **SYSTEM:** transaction costs economizing attributes and long term strategic concerns
3. **RESOURCES:** emphasis on access to key resources.

Growers were asked which of these groups best represented their criteria to choose between marketing channel options. The question was phrased as follows: Which one of the following criteria is the most important for you to choose whom do you sell your harvest to:

1. To get the best possible price (**PRICE**)
2. To participate on a marketing systems that provides information, confidence and hedging through the pooling pricing system (**SYSTEM**),
3. To secure access to credit and services (**RESOURCES**).

A sample was taken a total population of 126 growers in Artigas. All growers were classified by acreage in the following three brackets: 0 – 200, 201-399, 400-2000 hectares. In each bracket a random sub sample of 12 growers was taken: the largest three farmers in each bracket were always included in the sub sample. The sample although small in terms of number of growers, accounted for near 50% of the total rice acreage of the department of Artigas.

## Results

More than 80% of the sample believed that their colleagues were considering whether or not to switch marketing channels more than ever. When asked to whom they thought their colleagues were considering to change, 69% answered that to export directly and 12% to sell to exporters.

Most growers are new in the business, 90% have 10 years or less experience. The majority, 80%, sells to milling firms. Only growers that plant more than 400 hectares export directly. Growers seem to be loyal to their marketing channels; 97% sold their harvest through the same channels the last to seasons.

**Table 10: Marketing channel to be used in 1998 (percentage in each category)**

	50-200 hect	201-399 hect	400-2600 hect	TOTAL
Milling firm	90	86	64	80
Exporter	0	7	9	6
Direct	0	0	27	9
Other	10	7	0	6
TOTAL	100	100	100	100

**Table 11: Percentage of growers that did not shift marketing channels on previous 2 years**

	50-200 hect	201-399 hect	400-2600 hect	TOTAL
The same	90	100	100	97
Other	10	0	0	3
TOTAL	100	100	100	100

Growers were asked if they believed their peers were considering changing marketing channels. More than 80% believed that their colleagues were considering the matter more than ever. When asked to whom they thought their colleagues were considering to change, 69% answered that to export directly and 12% to sell to exporters.

	50-200 hect	201-399 hect	400-2600 hect	TOTAL
Much more than ever	0	43	36	29
More than ever	80	36	64	57
Same as always	10	14	0	9
Are not considering changing	0	7	0	3
Do not know	10	0	0	3
<b>TOTAL</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

	50-200 hect	201-399 hect	400-2600 hect	TOTAL
New Milling firm	0	7	0	3
Exporter	20	0	9	9
Direct exporting	60	71	73	69
Others	10	14	18	15
No switching	10	7		6
<b>TOTAL</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

When asked who were receiving better prices, 63% answered that those who export directly, 11% those who sell to exporters, and 20% those who sell to the best bidder. Most of them, 80%, think that those who sell to milling firms receive the lowest prices.

	50-200 hect	201-399 hect	400-2600 hect	TOTAL
Selling to Milling firms	0	7	0	3
Selling to Exporter	10	21	0	11
Direct exporting	50	50	91	63
Oppotunistic	40	14	9	20
No difference	0	7	0	3
<b>TOTAL</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

When asked to choose between PRICE, SYSTEM and RESOURCES, many respondents refused to be forced into these narrow categories and answered with combinations of them. PRICE was answered by 34% of the sample, SYSTEM by 17%, RESOURCES by 9%, SYSTEM and PRICE by 34%, and 9% answered RESOURCES and SYSTEM. Taking all respondents, 66% consider relevant the type of attributes implicit in SYSTEM and RESOURCES.

	50-200 hect	201-399 hect	400-2600 hect	TOTAL
PRICE	30	29	45	34
SYSTEM	20	21	9	17
PRICE+SYSTEM	30	43	27	34
RESOURCES	10	7	9	9
RESOURCES+SYSTEM	10	0	10	6
TOTAL	100	100	100	100

Interestingly, growers have quite a diverse idea of what their break even price is; answers ranged from US\$ 8 to something more than US\$ 11 per 50 kgs rough rice bag

	50-200 hect	201-399 hect	400-2600 hect	TOTAL
8	20	14	18	17
9	30	21	9	20
9,5	0	21	0	9
10	10	29	0	14
10,5	0	0	27	9
11	0	0	18	6
Higher	30	14	18	20
Do not know	10		9	6
TOTAL	100	100	100	100

As an attempt to quantify how much were growers valuing their preferred channel attributes, they were asked if they were willing to consider switching to a well known exporting firm if offered a higher price. Growers were asked to indicate at what price they would be willing to switch if the VCMS price were expected to be US\$ 11.

(dollars)	50-200 hect	201-399 hect	400-2600 hect	TOTAL
11,5	0	14	9	9
12	30	21	9	20
12,5	0	14	18	11
13	20	0	0	6

13,5		20	7	18	14
14		20	7	9	3
Higher		0	0	9	3
No switch		30	21	18	23
TOTAL		100	100	100	100

Switching price responses were related to preferred marketing channel attributes. To simplify the analysis, the marketing channel attributes responses were regrouped in three new categories: PRICE, PRICE+SYSTEM, SYSTEM+RESOURCES.

<b>Table 18: Eventual switching price per group of preferred marketing channel attributes</b>				
		PRICE	SYSTEM + PRICE	SYSTEM + RESOURCES
Baseline price; US\$ 9				
1 dollar or less		17	50	36
1,5 dollars or more		42	50	36
No switch		41		28
TOTAL		100	100	100
Baseline price US\$ 11				
1 dollar or less		25	42	18
1,5 dollars or more		33	58	55
No switch		41		27
TOTAL		100	100	100

From the SYSTEM+PRICE group of growers, 50% would switch for 1 dollar or less and 50% for 1,5 dollars or more if baseline prices were at 9 dollars. If baseline price is higher, at US\$ 11 dollars, 42% of the SYSTEM+PRICE group would switch for 1 dollar or less and 58% would switch for 1,5 dollars or more. Growers in the SYSTEM+RESOURCES group are more loyal; 28% would never switch, 36,4% would shift for 1 dollar or less and 36,4% would shift for 1,5 dollars or more. Growers in the SYSTEM+RESOURCES group are more loyal; 28% would never switch, 36,4% would shift for 1 dollar or less and 36,4% would shift for 1,5 dollars or more. If baseline price is higher, at a US\$ 11 level, SYSTEM+RESOURCES growers are harder to buy; 27% do not shift, 18,2% shift for US\$1 dollar or less and 54,6% shift for US\$1,5.

If taken together, at a baseline of US\$11, almost 70% of the growers whose criteria for choosing supply channel were somehow related to SYSTEM and/or RESOURCES would not shift marketing channel for less than 1,5 extra dollars.

It is important to notice that in general growers do not consider to have serious financial problems. Although 94 percent of the sample had medium and long term outstanding credits, 66% of respondents answered not to have financial problems and 26% answered their situation is somehow complicated.

## SUPPLY CHANNEL SUSTAINABILITY AND STRATEGIC CONSIDERATIONS

A further question of much concern for the industry is whether or not the VCMS will maintain its predominance and how direct exporting and open market development could affect VCMS competitiveness and the competitiveness of incumbent firms in the system. This paper argues that the question of supply chain organization is interdependent with future choices of strategic positioning by incumbent milling firms<sup>8</sup>. Consequently, the VCMS will maintain predominance if the industry's positioning is such that the targeted segments value VCMS's attributes.

Competitive dynamics in the Brazilian market will determine how different strategic groups will share the wholesale and retail markets and consequently what type of supply channel organization might be preferred by each strategic group. For example, a medium size Brazilian rice mill, with a well developed buying network, and a willingness to serve broad popular segments through less demanding wholesale markets might choose to buy most of the rice in the open market and profit from arbitrage opportunities. On the other hand, a large supermarket chain focused on private brand differentiation and marketing type strategies, and willing to economize on transaction costs might decide to avoid occasional suppliers and prefer long lasting relationships with few and highly reliable suppliers.

Brazilian rice mills, distributors and retailers, when purchasing rice have different procurement alternatives – supply channels – from which to choose. Each supply channel displays different attributes or characteristics. Transaction costs vary among supply channels and hence affect buyers' preference for the different channels. The question is then which buyers might prefer the bundle of transaction costs economizing attributes displayed by the Uruguayan VCMS supply channels.

The table 19 presents an example of the type of analysis that might be useful to link positioning and likely preferred supply channel attributes.

The table 19 presents an example of the type of analysis that might be useful to link positioning and likely preferred supply channel attributes.

<b>Table 19: Positioning, competitive dimensions and preferred channel attributes</b>			
<b>Positioning</b>	<b>Key Competitive Dimensions</b>	<b>Key Assests/ Operations</b>	<b>Supply Channel Preferred Attributes</b>
Regional / national Chains	-Volume	-Negotiation power	-Regular, year round
	-Low Price	-Shelf space	-Reliable, consistent
	-Own brands	-Supply chain management expertise	-Responsiveness
	-Sourcing economies of scale		-desidred range of product quality
Regional/National packers-distributors	-Brand recognition/reputation	-Value of brands	-Reliable, consistent
	-Marketing skills	-Storing facilities and transport network	-Responsiveness

<sup>8</sup> Jack A. Nickerson, Toward and Economizing Theory of Strategy.

	-Economies of scale and scope	-Efficient supply	-Desired range of product quality
	-Outbound Logistics		
Large milling branding companies	-Milling efficiency	Milling technology	-Large badges
	-Economies of scale	-Location	-Responsive to quality concerns
	-Brand recognition/reputation	-Brands	-Adaptive to market prices
	-Logistics		-Reliable
Local/State level packers and distributors	-Geographic penetration/reach	-Idiosyncratic information of clients	-Mostly flexible: occasional suppliers
	-Economies of scope	-Financial capacity	-Market pricing
	-Marketing margins	-Market knowledge	-Volatility increases margin opportunities
	-Opportunistic sourcing; arbitrage	-Tough negotiator	-On sight buying and paying
Small/medium mills	-Ample range of formal to informal surviving strategies	-Close to growers and local/state retailers	-Mixed patterns
	-Low managerial and bureaucratic costs;	-Aggressive buying and use of arbitrage opportunities	-First hand information
	-Use of traditional state level brand recognition	-Strategic use of backward integration into production	-Year round contact with growers
	-Highly flexible and adaptive to local idiosyncratic circumstances		

## CONCLUSION

*TCE is a useful approach to understand why vertical contracting was perceived as the most efficient form of organization by growers and milling firms and why the preferred supply chain governance structure might change as markets change. For a country that exports 90% of total production, this form of vertical integration was necessary to build early long term commitments and efficient investment incentives at all stages of the supply chain. The situation changed in the early 90's after Brazil allowed paddy rice to be imported and several Uruguayan exporters and growers started exporting paddy rice. For these agents, the term "exporting" no longer has the connotation of complexity and risk when it is referred to Brazil. Buyers and sellers meet and communicate frequently and enough information is available or perceived to be available. An incipient paddy rice spot market is developing.*

*Significant concern exists among industry members about how direct exporting and open market development could affect VCMS competitiveness and the competitiveness of incumbent firms in the system. The question of whether or not to switch marketing channels is in most large growers agenda at the moment. The survey indicates the following:*

- 1. Most growers perceive that those growers that export directly receive the highest prices, yet 97% of the sample did not switch marketing channels during the past two seasons, and 70% of the sample would not consider switching unless they were offered an extra US\$ 1.5 dollars.*
- 2. When choosing between marketing channels, most grower value transaction cost economizing attributes as well as other strategic type of concerns related to channel organization. The VCMS is believed to offer superior performance in terms of coordination and motivation efficiency. Although only 3% of the sample answered that those who sell through the VCMS get the highest price, 80% will still sell through the system in 1998. One third answered that securing the best price is their main criteria for choosing to whom to sell. All the rest placed some degree of value on the TCE, and on strategic and resource access concerns provided by VCMS.*
- 3. Marketing channel attributes do have a price tag though. Whereas different growers place different value on channel attributes, the survey suggests that in most cases the switching marginal price is in the range of 1-2 dollars. What the survey does not tell is if growers would attempt to get the best of both possible worlds and eventually just diversify marketing strategies, selling part of the harvest through the VCMS and part in the open market.*

*To what extend direct exporting of rough rice to Brazil will increase its importance relative to VCMS very much depends on how successfully the leading Uruguayan milling firms can position themselves and compete in the changing Brazilian market while eventually maintaining enough presence in other overseas markets for hedging purposes. Large Brazilian distributors and supermarket chains might prefer to source regularly through the Uruguayan VCMS if transaction costs economizing attributes are valued. What segments to target, how close to the final consumers to reach, how much brand recognition to search for, what type of marketing alliances to develop an with whom, how much market diversification, are all questions on which the market share and predominance of the VCMS supply channel will depend on.*

*The competition between the VCMS and the open market system is an open ended game with successive rounds. Eventually the VCMS and the open market coordination system will reach a dynamic equilibrium with growers shifting back and forward. How many growers might shift on a given year will mainly depend on: 1) The previous seasons price differential; 2) Long term strategic positioning commitments by the milling industry and clear signaling to the growers; 3) The perceived level of transaction costs by growers; 4) The investments needed to support open market transactions by the growers.*

*Deregulation of the Brazilian rice market and consequent industry adjustment processes are likely to cause short term opportunity costs asymmetries and disparities between the Uruguayan and Brazilian mills. Though occasional buying, small and medium size Brazilian mills might be better positioned than their Uruguayan colleagues to profit from the many arbitrage opportunities offered by their large and still highly fragmented Brazilian domestic market.*

*Uruguayan rice farming and milling is considered to be highly competitive and the VCMS is believed to be the cornerstone of the industry's competitiveness by the vast majority of the rice agribusiness system professionals. Under increased competition the Uruguayan milling industry is likely to become even more competitive in the near future.*