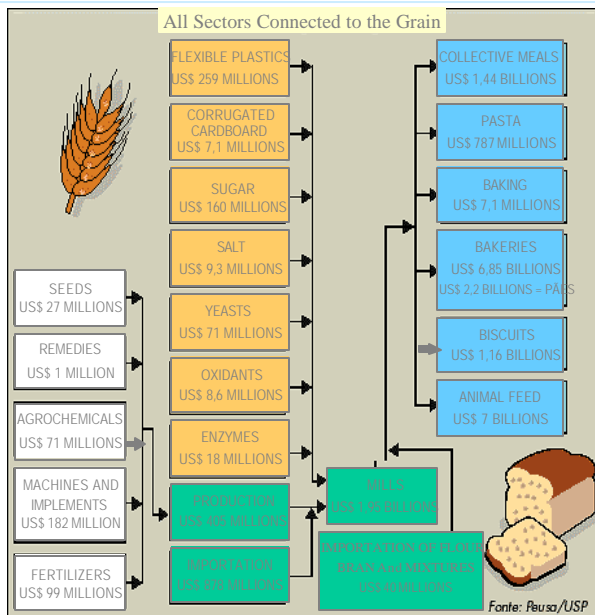


COMPETITIVENESS OF THE WHEAT CHAIN IN BRAZIL



Claudio A. Pinheiro Machado Filho – capfilho@usp.br
Matheus Kfourri Marino – mkmarino@usp.br
Fábio Matuoka Mizumoto – fabio@mizumoto.com.br
Marco Antonio Conejero – marcoa@usp.br
Tiago Fischer Ferreira – tiagof@fia.com.br

Results - Primary Processing (Mills)

- Low capacity utilization (close to 40%)
- Recent state deregulation (12 years – End of Decree Law 210)
- Important sector to Brazil (revenue close to US\$ 2 billion)
- Sector is still in a restructuring process, since market deregulation
- High internal rivalry in the industry
- Concentrated sector (CR4 close to 40%)
- Low entry barriers, low investment in the acquisition of broken mills
- Low change of players
- Reduced margin, low return on invested capital and high debts
- Competitive cost structure (Recent investment in new technologies)
- State-of-the-art: some mills already present the capacity to process the mixture of flours instead of wheat. This procedure adds much more value for demanding customers
- Almost all mills operate with high wheat flour extraction which allows relevant cost reduction
- Flour differentiation is incipient and has been a competitive advantage for some mills
- Increment of added value (differentiated flours)
- Presence of 3 strategic groups:
 - Leaders that operate in the formal market, invest in cost reduction and in product differentiation
 - Medium companies that don't invest in technology and are losing market share
 - Small mills that survive regionally and operate in the informal market, which means non-payment of taxes
- Segmentation
 - Geographic regions
 - Product (different flours: soft (biscuits and cakes), baking (pasta and bread), improver, and prepared mixtures for bread)
 - Wheat bran has opportunistic customers. Common use for wheat bran is in animal feed and alternatively, mixed with soybean bran for protein percentage adjustments
 - Wheat bran has low commercial value, often becoming a problem for mills (Stock cost)
 - Development of new distribution channels
 - Direct sale to bakeries
- Sector's low horizontal and vertical coordination makes it difficult to utilize collective strategies (stable wheat market and growing use of wheat in other food)

Results - Secondary Processing (Bread)

- Scattered segment, local customers
- Dependence on baker's competence for maintenance of bread quality, human resource is a key advantage
- Fluctuation in quality (flour and bread) over the year
- Segment in concentration. Formation of big groups
- Wheat derivatives lose market share in the mix of bakery sales
- Demand for new investments (visual, sanitation, new services (meal))
- Wheat-based products provide largest margins
- Development of new products, frozen bread for instance
- Demand sensitive to price
- Sector may be highly affected by improvement of tax inspection since many bakeries operate in the informal market
- Presence of entrance barriers (localization). Growing importance of points-of-sale.
- Main consumer of wheat flour, more than 50% of output.
- Lacking in information technology
- Price and profitability decreasing, reasonable return on invested capital, high added value and low debts
- Low vertical and horizontal coordination

Results - Secondary Processing (Pasta/Noodles)

- High professionalization and private property
- Segment in process of concentration.
- High internal rivalry
- Presence of entry barriers represented by trademark, installed capacity and reduced margins
- Consolidation of big groups. Presence of big groups seeking differentiation through trademark and price
- Competition with imported pasta
- Compressed margin, price and profitability in decline, low return on capital invested in commodities
- Growing disputes for differentiated products that present attractive margins
- Investment in package and new differentiated products
- Scattered distribution
- Reasonable vertical and horizontal coordination

Results - Secondary Processing (Cakes/Biscuits)

- Professional market
- Big companies dominating market. Presence of multinationals
- Larger concentration
- High entry barriers (trademarks). Need for trademark construction
- Sector with predominance of companies operating in the formal market, but allowing the presence of small companies operating in informal market
- Growing demand in outcome quality and, as a consequence, high demand for specific flours
- Major innovation in products and packages
- High growth rate
- Possibility of product exportation with high added value
- Price and profitability are more attractive, reasonable return on invested capital, high added value and low debts
- Presence of vertical and horizontal coordination
- Structured segment

Results - Animal Feed

- Opportunistic and eventual use:
 - Utilization of wheat below quality standard, produced in adverse climate conditions or from bad seed varieties
 - Use when the wheat prices go down and less costly than soybean or corn
 - Soybean and corn are the main raw material sources
- Presence of intermediaries that buy bran from mills and sell to local animal producers (mainly poultry, dairy and pork) or animal feed factories
- Wheat bran operates in informal market
- Regional market depends on freight value
- Sector disputes wheat bran with soybean bran industries
- No attractive market for mills, but necessary. Some mills don't charge for wheat bran.
- Low invested capital, low added value products and low debts
- High growth rate on domestic animal feed market. Some niches seem to improve the use of wheat in the feed composition, but still incipient
- The development of an intensive dairy production, instead of an extensive one, may demand high quantity of wheat bran and even the whole wheat

Conclusions

- Sector characterized by low vertical and horizontal coordination
- Unexplored market opportunities (stable market)
- Need for collective actions throughout the chain
- Low competitiveness in agricultural phase of wheat production in Brazil
- High competitiveness of mills and cereal products industry
- Efficiency gain after sector deregulation
- Survival of the most competitive companies (consolidation)
- Animal feed segment is not very representative of the entire wheat chain
- Threat of development of substitute products
- Low quality differentiation of products
- Reduced margins
- Need for market development

Problem Statement

This study focused on the competitiveness of the Brazilian wheat agri-chain:

- Agricultural production
- Primary processing (Mills)
- Secondary processing (industry of bread, breakfast cereals, pasta/ noodles, cakes and biscuits)
- Sector of animal feed based on wheat

Justification

- Brazil is one of the most competitive countries in food and agriculture production.
- Brazil is an important player at the international agribusiness scenario
 - Leadership in exports: sugarcane, orange juice, beef cattle and coffee
- What efforts the firms on wheat business may benchmark from the order Brazilian agri-chain?
 - Brazilian wheat production is low representative comparing to the rest of the world.
 - Top 5: China, European Union, Indian, Russia and U.S.A.
- Unfavorable climate and land conditions for temperate climate cultures is only part of the problem.
- The main reason is related to chain coordination.
- Until 1991, market regulation by the Brazilian government
- Regulated prices
 - Wheat farmers and research institutes developed their competencies and techniques to enhance the productivity.
- Logistic and storage structure dealt with two types of wheat: the good and the bad one.
- Flour milling processor industry had limited production quotas.
- Consumers of the wheat flour had no place to demand product differentiation.
- After the deregulation, what happened?
 - The great impact was on wheat volume production.
 - Before 1991, all the wheat consumed in Brazil produced nationally;
 - After the deregulation, until 60% of this volume imported.
 - The second order impact was the arise of quality issues.
 - Food processors demanded wheat flour according to their outcome specifications.
 - Open market: Facility to buy imported wheat with a better pattern of quality.
- Actual Situation
 - Development of wheat seed varieties is driving to meet both productivity and quality issues (EMBRAPA).
 - Brazilian Cerrado: irrigated systems and hot weather.
- Flour milling industry has been investing on technology process to produce a wide range of wheat flour.
 - Bakery and pasta industry has signaled the constant need of raw material improvements and innovations to create value to their customers.

Objectives

- This paper analyzes the competitiveness of the Brazilian wheat agri-chain, comparing before and after market deregulation in 1991
- The research focus on the recent movements of firms to create and explore opportunities of the new reality on Brazilian market of wheat and wheat products.

Procedures

- Model Structure – Conduct– Performance modified (SCP)
- Industrial Organization: analysis of the competition in the markets (Farina et al. 1997, Scherer & Ross 1990);
- Transaction Costs Economics: understanding of the relations between the agents (Williamson 1985)
- Institutional Environment: define the rules to firms play the game (North 1990)
- Source of Information
 - Interviews with agents of:
 - Genetic Development Institutions
 - Trading Companies
 - Flour Mill Companies
 - Animal Feed Companies
 - Bakery, Pasta and Animal Feed Associations
 - Secondary Data
 - Research reports
 - Internet-based search
 - Bibliography-based research

•Results - Agricultural Production

- Competes with imported wheat
 - Highlight for Argentina. Followed by USA and Canada
 - Weak competitive cost structure if compared with Argentina
- Production traditionally situated in the south of the country. Wheat is a complement culture for other cultures such as soybean.
- Migration to the Brazilian Cerrado Region
 - Genetic development (productivity and quality differentiation) and irrigation
 - Crossed development, soybean of shorter cycle for entry of the wheat
- Farmers are dependent on mills' willingness to buy wheat, which generates uncertainty to plant the product
 - Need of new distribution channels (exports)
- Partnerships with mills are still incipient
 - Recent cases of hold-up in Paraná
 - Some mills make options for wheat purchase
- Scattered agricultural production with low horizontal and vertical coordination to promote the improvement of wheat consumption
- Presence of some agricultural cooperatives