

Globalization and concentration in Brazil's agri-food system

The emergence of large business groups, especially those focused on exporting commodities, is one of the most visible results of the changes undergone by Brazil's food industry in the last two decades, which began under the so-called Real Plan.

Mergers and acquisitions, such as Sadia's with Perdigão in 2008, were the most media-based operations in that process, but not the only ones. The beginning of the upward cycle in commodity prices, starting in 2002, also encouraged investors to set up new businesses in the country in order to meet not only the growing foreign demand, but also the rising domestic middle class.

In addition, professionalization and/or improvement of management in traditional farming cooperatives placed those groups at another level. Producers' associations now have more chances to compete with international trading companies in export activities, while food processing enterprises can do the same in the marketing of consumer goods.

The latest figures reveal the weight of the food industry in Brazilian economy. Including activities as diverse as sales and processing of grain and meat, dairy,

sweets and frozen meals, it sold 525 billion reais in 2014 and created 1.6 million jobs according to the Brazilian Association of Food Industries (Associação Brasileira das Indústrias da Alimentação, Abia).

The industry's share in Brazil's Gross Domestic Product (GDP) has remained stable around 10%. However, it increased its share in the processing industry from 16.9% in 2004 to 20.2% in 2014. While that is a sign of the increasing importance of commodities for the economy, it points out difficulties faced by other industrial segments.

The issue that arises from the advance of big business groups in the food industry is related to the impact of that process on other relevant actors of the so-called agri-food system, such as farmers and consumers. Issues related to product price, rural exodus and working conditions in rural areas, among others, are targeted by academic research efforts and civil society organizations.

These points will be discussed later in this article, after we present a brief panorama of Brazil's food industry. This exploratory analysis will focus on the process of concentration in the industry, and the calculation of indexes that can confirm or refute its existence.

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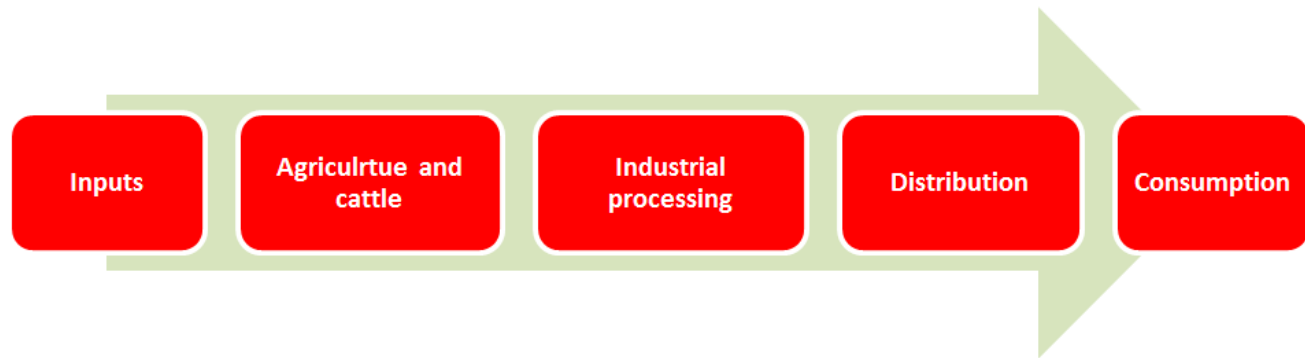
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The food industry

The food industry is an integral part of the food system, as shown in the following chart. Located in the middle part of the production chain and in charge of food processing, its area of influence reaches other actors in several ways.

These are sectors in which Brazil has great prominence in global trade. The country is the world's largest producer and exporter of sugar, coffee, soybean and orange juice. In the meat market, it is the largest exporter of poultry, the second of beef and the fourth of pork.

According to the "OECD FAO Agricultural outlook 2015-2024", in which FAO and



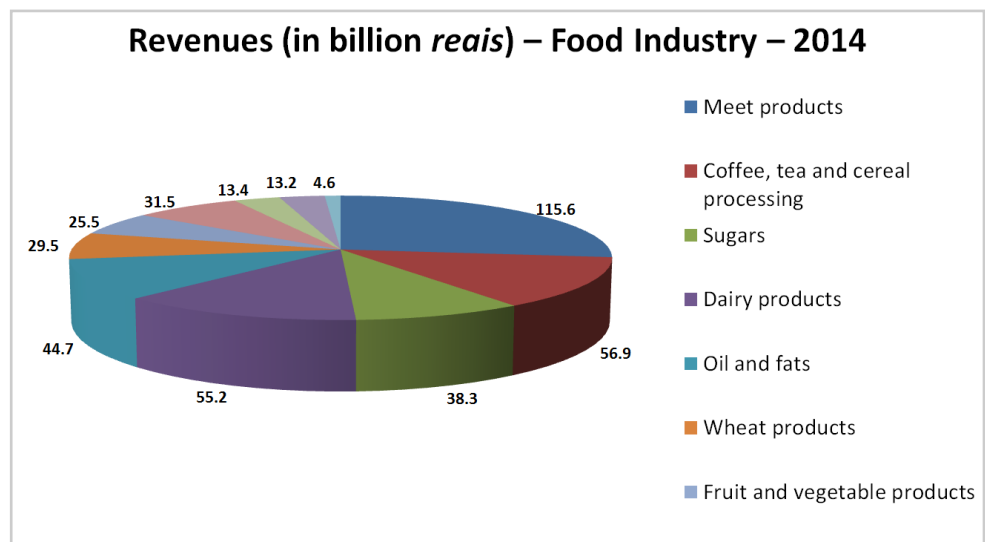
Soybean processing companies, for instance, fund farmers by offering them the so-called technological input packages in exchange for their products. Furthermore, large food cooperatives have their own distribution channels in order to reach the final consumer directly.

These features make the industry an important actor regarding the fate of the other actors in the system, justifying the attention it has received from regulatory authorities during mergers or acquisitions. The chart on the right shows the diverse nature of that industry as well as the revenues of each branch in 2014.

Production of meat products earned the highest revenues (115.6 billion reais), followed by processing of coffee, tea and cereals (R\$ 56.9 billion), dairy (R\$ 55.2 billion), oils and fats (R\$ 44.7 billion) and sugars (R\$ 38.3 billion).

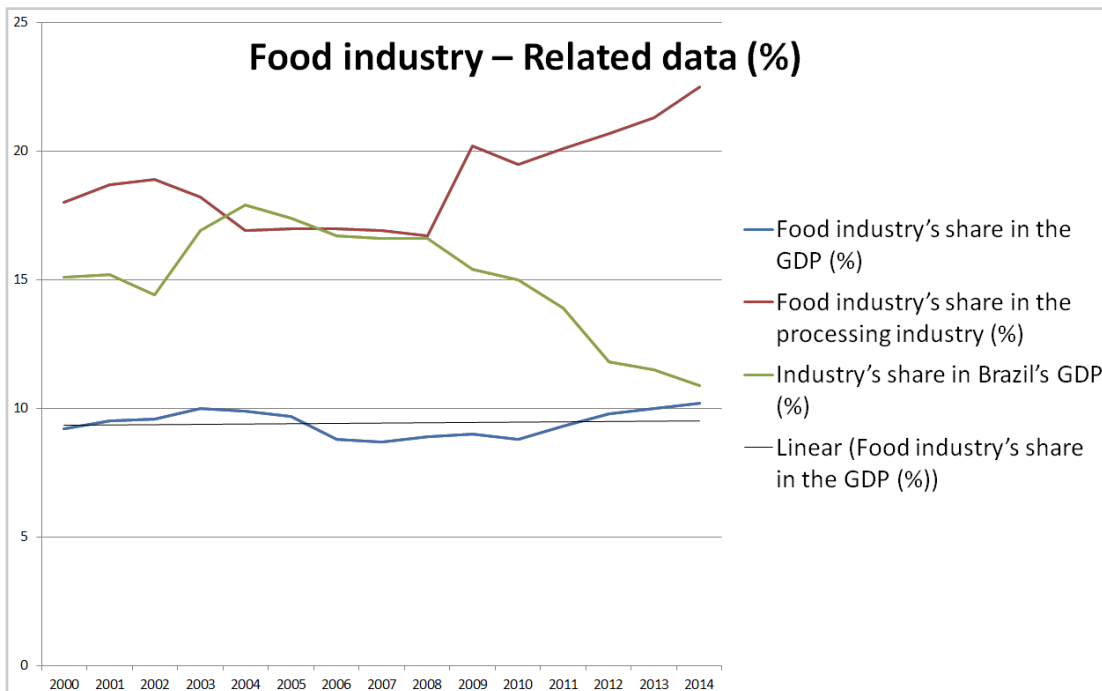
the Organization for Economic Cooperation and Development (OECD) analyze the prospects of Brazilian agriculture, the country may become the largest global exporter of food within ten years.

But the increase in the relative weight of the food sector within the industrial GDP has been criticized by analysts as a sign of "primarization" of Brazilian economy. Higher added value products have lost ground



among Brazil's exports during the upward cycle in commodity prices, posing the question of how the economy in the country would be affected when the cycle ended.

The following chart shows the weight of the food industry in Brazil's economy. Despite the fall in the industry's overall share in Brazilian GDP in the last fifteen years, the food sector has grown and managed to keep its relative share of around 10% of the GDP.



Sectoral concentration

Studies on the level of concentration of certain economic segments, especially industrial ones, spread in the country after the opening of the domestic market in the 1990s. Proliferation of mergers and acquisitions underscored the importance of analyzing oligopolistic and competition practices in certain segments regarding their socio-economic and legal aspects.

According to Scherer and Ross (1990), when the four largest companies in an industry control over 40% of its production, oligopolistic behaviors are more likely. This means more control over prices of inputs paid to suppliers and prices of products offered to consumers.

The authors note, however, that concentration does not always result in oligopolistic practices. As Brazil's Administrative Council for Economic Defense (Conselho Administrativo de Defesa Econômica, Cade) has argued in several decisions on mergers and acquisitions, concentration can bring about economic benefits, including on consumer prices. That would occur because of gains resulting from economies of scale, technological innovation, and modernization of leading companies.

Before discussing this aspect of the food industry, we must understand what has been happening to the industry in terms of concentration. We will resort to the CR4 and CR8 indexes, which are extensively used for such analyses. These indicators measure the percentage of the market in the hands of the largest companies – CR4 for the largest four and CR8 for the largest eight.

Generally speaking, CR4 = 0 means perfect competition; CR4 = 0-0.49 indicates low concentration; CR4 = 0.5-0.79 is medium concentration; CR4 = 0.8-0.99 means high concentration; and CR4 = 1 means monopoly. Several databases were surveyed to conduct those calculations.

The time series of companies' revenues was found in the database of the "Biggest and Best" study conducted by Fipecafi Institute and published annually by Exame magazine. Figures on food industry revenue were obtained from Brazil's Central Bank and Abia, and the calculations resulted in the following chart.

CR4 and CR8 behavior very similarly, indicating the occurrence of two distinct cycles during the last two decades. The first cycle is a result of economic opening encouraged by the Collor administration and Plan Real, and it enhanced the concentration process.

CR4, for instance, went from 0.2 to 0.34 between 1995 and 2004, meaning that the four largest companies in the food segment increased their control over the total revenues of the market from 20% to 34%. In 1995, those four largest groups were Nestlé, Unilever, Copersucar, Bunge, respectively; in 2004, Bunge, JBS, BRF, Cargill.

According to KPMG consulting firm, between 1992 and 2004 the food industry was the segment with the most mergers and acquisitions, with 388 or 11.4% of the total cases in Brazil. Virtually non-existent until 1990, the number of food conglomerates multiplies.

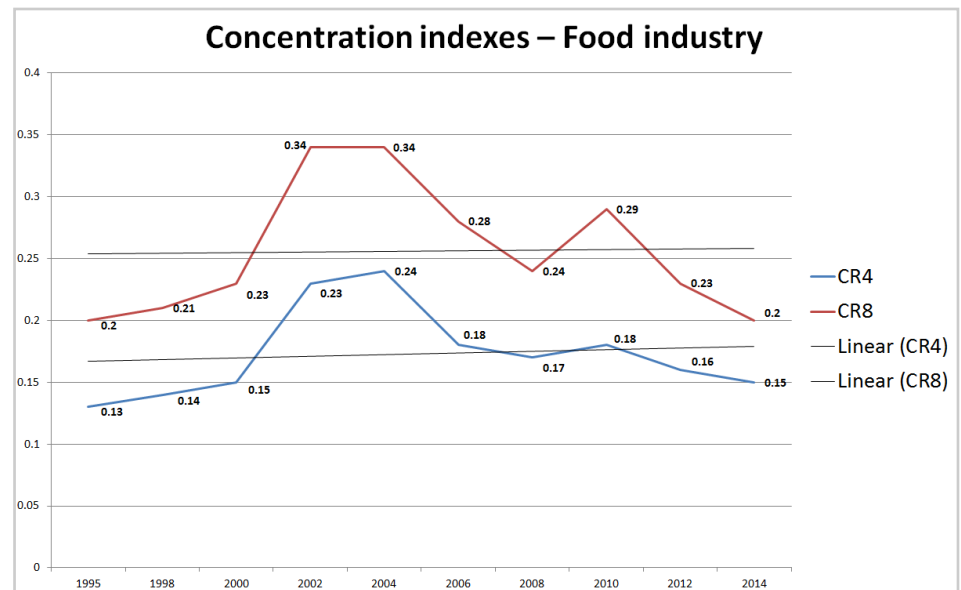
From 2004 on, however, the degree of concentration began to fall. In that

year, CR4 returned to its level from 20 years before (0.2), and CR8 was close to it (0.15 compared to 0.13 in 1995). This new phase can be associated with the onset of the upward cycle in commodity prices in 2002. The process encouraged the arrival of new international players and the opening of new businesses, thus favoring industrial decentralization.

Moreover, another phenomenon contributed to

(Rio Verde, GO) entered the list of the 25 largest food industry groups in Brazil by operating not only in the commodity sales business, but also in processing food for end consumers.

In specific sectors, the trend towards deconcentration in the food industry in general that started in 2004 did not prevent the process from continuing and even gaining strength. The meat industry is the best example.



this trend: agro-industrial cooperatives were strengthened by the so called "new generation" model. With professional management and focused not only on producers' interests, but also on business results, cooperatives rose among major groups operating in Brazil.

In 2014, cooperatives such as Coamo (Campo Mourão, PR), Aurora (Chapecó, SC), Cocamar (Maringá, PR) and Comigo

In 2008, Sadia and Perdigão merged and created BR Foods, one of Brazil's largest exporters. In 2010, JBS and Bertin joined to create the world's largest meat companies. The CR4 for meat reached 0.52 in 2014, well above the overall index.

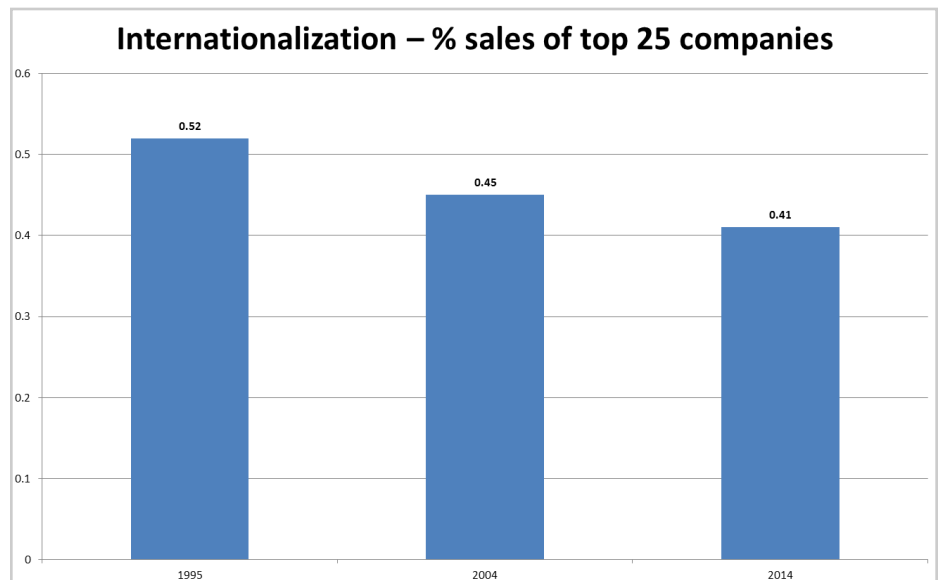
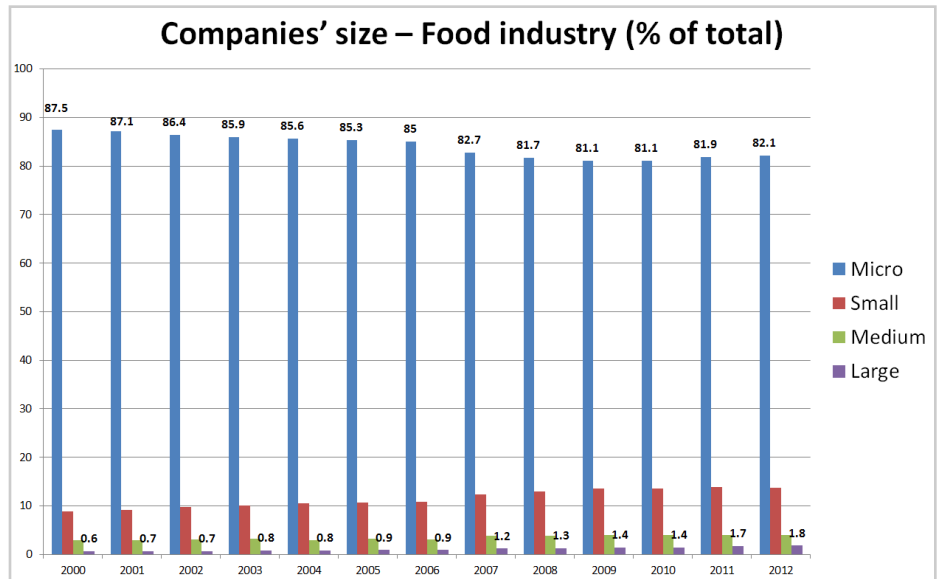
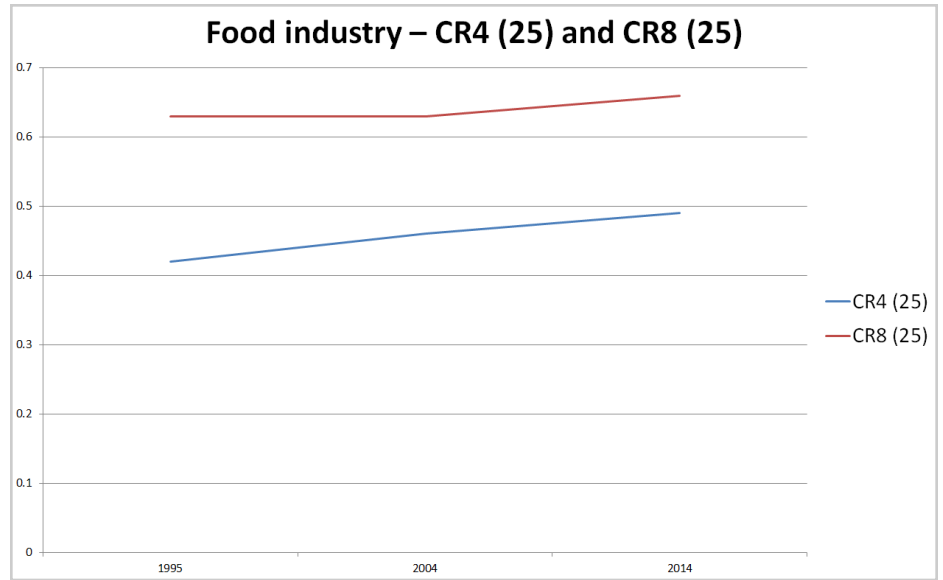
Furthermore, when analyzing only data on the 25 largest business groups, we observe that there is a slight trend towards concentration. CR4 went from 0.63 to 0.66

in two decades and CR8 went from 0.42 to 0.49, as shown in the following chart.

Confirming the dynamics of the largest business groups, the chart below shows that big food companies were the fastest-growing segment in recent years, going from 0.6% of establishments in the industry to 1.8%. The segment of small and medium-sized companies has also grown, but to a lesser degree, and the number of the so-called micro-enterprises has decreased. In total, there are about 33,000 food companies in the country, according to Abia.

Finally, let us examine the process of internationalization in Brazilian economy and its relationship with the food industry. Data below show that, even though major global companies like Bunge, Cargill and Nestlé have expanded their business in the country in recent years, the internationalization level of the food industry has not risen, at least when considering the 25 largest groups.

Instead, the following chart shows that foreign companies lost space in the industry's revenues, going from 52% in 1995 to 41% in 2014. In addition to consolidation of major groups whose capital is Brazilian, such as JBS and BRF, this trend seems to be related to the very strengthening of agricultural cooperatives, as mentioned earlier.



Impacts of industrial concentration

As shown before, the process of industrial concentration may eventually lead to oligopolistic practices that can result in losses for suppliers and consumers. Flexor (2006) recognizes these effects have happened to some farmers, particularly the least capitalized ones. According to him, they are subject to a set of competitive pressures whose social and economic impacts are dramatic.

In the same vein, Oliveira stresses that the expansion of the capitalist mode of production in rural areas happens first and foremost through subjection of land rent to capital, whether by buying land to explore/sell or by subordinating the production of the peasant type.

“Therefore, in the contradictory process of appropriation of land rent by capital, we witness, on the one hand, the landowner and the capitalist being unified in the same person and, on the other hand, the process of subjecting rent to capital in non-capitalist production sectors, for instance, in the case of peasant type family property. In this case, we see subjection of rent to capital without expropriation of means of production”, Oliveira says.

A classic case illustrating this process is that of “integrated farmers” in southern Brazil’s poultry industry. Behind an industry that profits billions, thousands of family farmers are stuck with obscure contracts signed with meat packing companies – and are usually underpaid, indebted and forced to spend the labor and health of their families on a daily basis.

However, industry experts also highlight that technological advances and

economies of scale seem to be beneficial for consumers since food prices have risen less than the general indexes when analyzed in the long-term.

Flexor (2006) himself points out that transnationalization of the Brazilian agri-food system is likely to have positive external effects. “Technological or managerial spillovers and more coordination with foreign markets seem to be the more concrete ones”, he says.

Viegas (2006), in turn, who analyzed the evolution of price indexes for processed food in the 90s, points out that they increased less than the general indexes. Therefore, he concluded that “the transfer of efficiency gains from mergers and acquisitions may put pressure consumer prices down”. That is, the efficiency effect was stronger than the market power effect.

Such context in which some lose and others win exposes a battlefield that will undoubtedly require new investigative incursions to be mapped.

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