

THE BRAZILIAN WHEAT SECTOR AND THEIR INTERACTIONS WITH INTERNATIONAL TRADE

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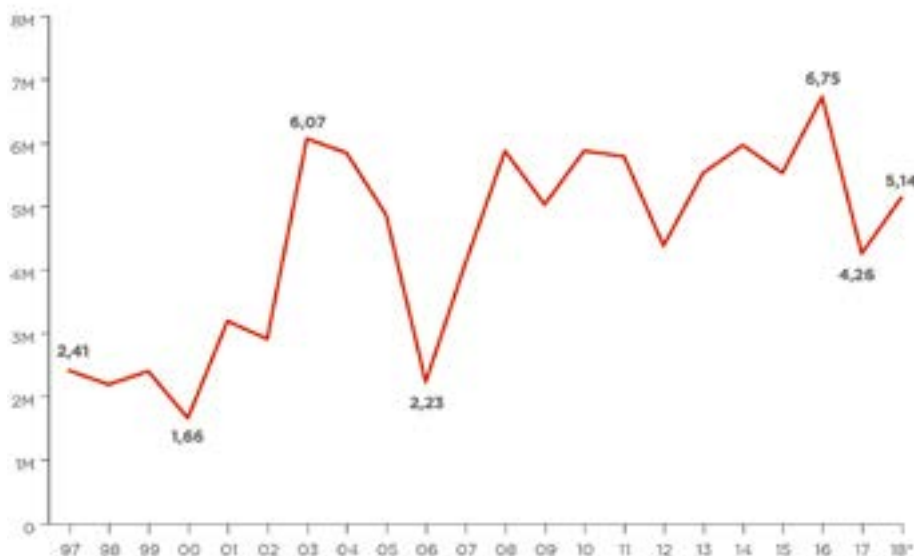
EXECUTIVE SUMMARY

WHEAT: ONE OF THE MOST CONSUMED GRAINS IN BRAZIL AND THE PLANET

- Wheat is among the world's major grain produced and is the second most consumed food globally, behind only corn. In 2017 more than 740 million tons were produced worldwide.
- The relevance is also national in Brazil, besides being a frequent food in the table of Brazilians, it is present in 133 thousand rural properties, and it moves a productive chain with almost 800 thousand people. In 2017 grain consumption reached 11 million tons, but domestic production was 4.26 million tons and Brazil is only the 19th world producer. This production is expected to reach 5.14 million tons by 2018, but this volume would not yet be enough to supply the domestic market.
- Brazilian wheat production has been oscillating over the years and is still is highly dependent on climatic factors to define success rates at the end of each harvest.

Graph 01

BRAZILIAN PRODUCTION OF WHEAT BETWEEN 1997 AND 2018* (IN MILLION TONS)



- Despite oscillations, wheat production in Brazil has increased since 2006, a year in which there was a strong drought, and has remained at levels above 4 tons per year since then. These increases were driven by gains in productivity, as a result of increased production and reduced area planted. In addition, there was also a contribution of the climate, which has remained more favorable, the grains that have been gaining more quality and the adoption of appropriate crop management technologies.
- Besides perceiving an increase in grain yield, Brazil has also been faced with a change in the pattern of consumption in recent years. After the crisis of 2014, the fall in the purchasing power of the Brazilian was reflected in a reduction in food outside the home, increasing the household consumption of ingredients such as wheat flour and bread.
- Despite this increase in consumption and productivity gains, Brazil is still in a position to import wheat, since other crops or practices are preferred over wheat, such as rice and livestock in the South region of the country.

INDUSTRIAL PRODUCTION OF WHEAT AND ITS DERIVATIVES: DEPENDENCE ON THE EXTERNAL MARKET

- While Brazil is the world's 19th largest wheat producer with a production of about 4.26 million tons, economies such as the European Union, China, India and Russia dominate world production. These economies together produce 465 million tons of wheat, accounting for 61% of world production.

Table 02

WORLD WHEAT PRODUCTION BETWEEN 2017 AND 2018 (IN MILLIONS OF TONS)

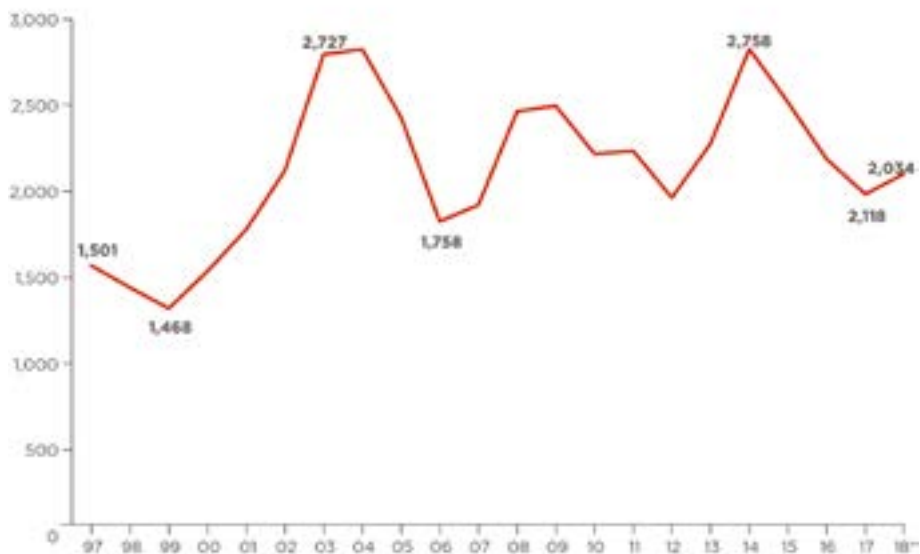
COUNTRY	VOLUME	%
EUROPEAN UNION	152	20,01%
CHINA	130	17,12%
INDIA	99	13,00%
RUSSIA	85	11,21%
USA	47	6,25%
CANADA	30	3,96%

UKRAINE	27	3,56%
PAKISTAN	27	3,52%
AUSTRALIA	21	2,81%
TURKEY	21	2,77%
OTHERS	120	15,80%
WORLD	758	100%

- Although economies such as the European Union, China and India dominate wheat production in the world, only the European Union is among the major global exporters and ranks third behind Russia and the United States.

Graph 02

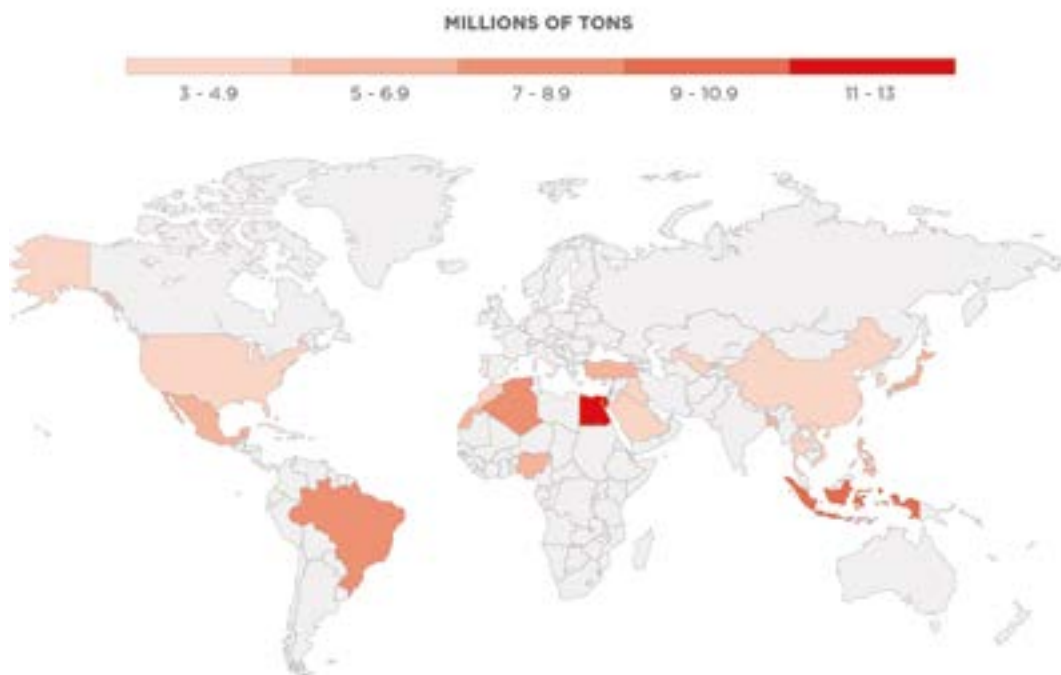
THE WORLD'S LARGEST WHEAT EXPORTERS IN 2017 (IN MILLIONS OF TONS)



- Despite the great expressiveness of these economies as producers and exporters of wheat in the world, Brazil's major trading partner in recent years has been Argentina, which accounts for about 81% of the volume of wheat and derivatives imported by Brazil, since the country depends on a large part of the import to supply its domestic market.
- All this dependence on the foreign market, and the large volume of imported wheat in recent years, places Brazil in the position of the world's leading importers of wheat, occupying the 4th position, behind only Egypt, Indonesia and Algeria.

Graph 03

THE WORLD'S TOP 20 WHEAT IMPORTERS IN 2017 (IN MILLIONS OF TONS)



WHEAT INDUSTRY: THE PROTAGONISM OF WHEAT FLOUR IN THE NATIONAL MARKET

- In Brazil, most wheat production is concentrated in the South region of the country, as well as 75% of the country's mills. Nonetheless, the process of producing wheat derivatives flows to the rest of the country. Even though it owns 75% of the mills, the South is responsible for about 49% of the industrial grinding, the remaining 51% is distributed among the other Brazilian regions..
- The industrialization process is extremely important since wheat is a food that is usually not consumed in natura, and its derivatives, such as bread, pasta, cake and biscuit, are part of the daily consumption of most Brazilians. Although Brazil is not a major producer of wheat and depends on the foreign market to supply itself, Brazil imports most of the natural food, and later the imported product is processed and industrialized within the Brazilian territory itself..

Table 03

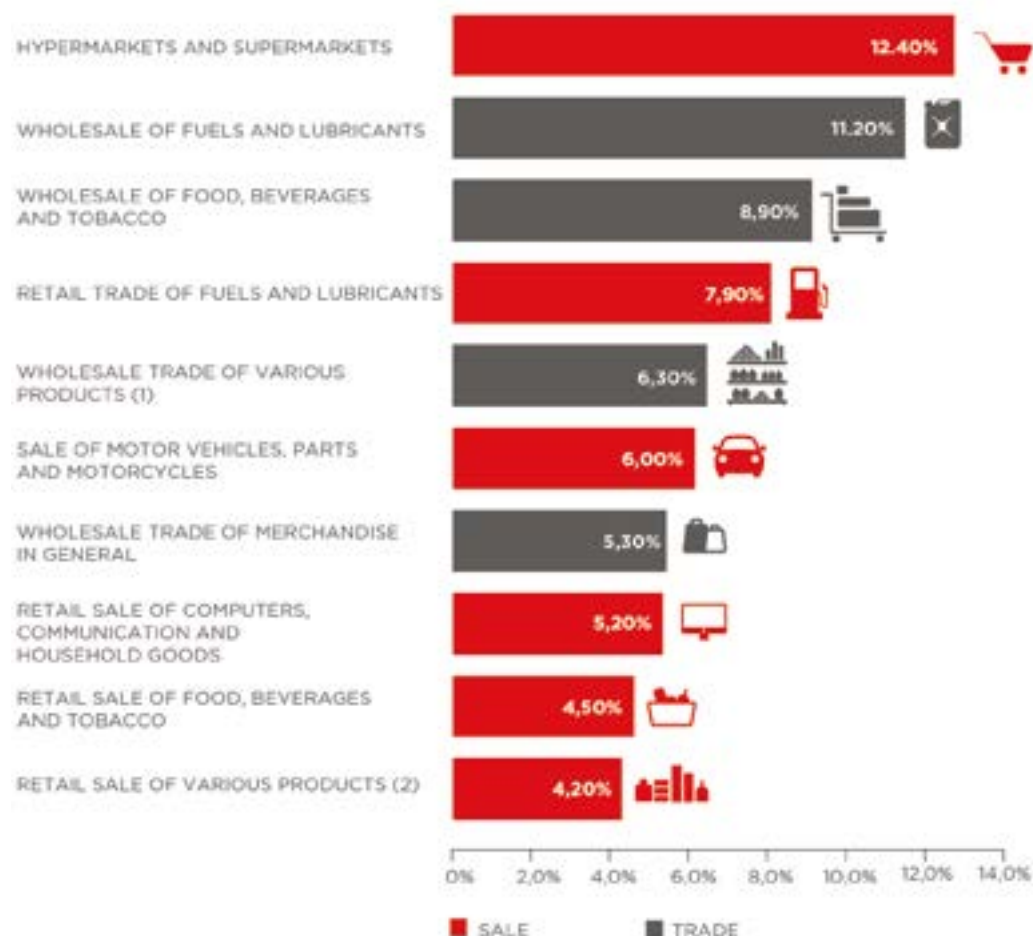
COMMERCIAL VOLUME OF THE MAIN PRODUCTS MARKETED INTERNATIONALLY BY THE BRAZILIAN WHEAT INDUSTRY (IN MILLIONS OF TONS)

PRODUCT	2017		2018	
	VOLUME	%	VOLUME	%
WHEAT EXCEPT FOR SOWING	577	90.4	165	75.4
WHEAT FLOUR AND MIX	19	3.0	7	3.2
PASTAS	7	1.1	10	4.4
BAKERY, CONFECTIONERY AND BAKERY PRODUCTS	2	5.0	34	15.5
WHEAT GLUTEN, WHETHER OR NOT DRIED	0	0.0	0	0.0
GROATS AND MEAL OF WHEAT	0	0.0	0	0.0
WHEAT STARCH	0	0.0	0	0.0
BRAN AND OTHER RESIDUES OF WHEAT	0	0.0	0	0.0
WHEAT FOR SOWING	0	0.0	1	0.3
BREADS AND PANTONE	3	0.5	2	1.0
WHEAT BRAN	0	0.0	0	0.0
TOTAL	637.96	100	218.45	100

- After industrialization, wheat flour is one of the main derivatives of this sector in Brazil, since it serves as a raw material for many foods. But despite this consumer culture of wheat derivatives that the Brazilian population presents, some economic factors influence the level of consumption of these foods.
- What has been perceived in Brazil in recent years are variations in the economy that affect the food trade as a whole and, consequently, the trade in wheat derivatives. The food sector in 2016 was the largest commercial activity in Brazil and food sales volume has remained positive since the beginning of 2017..

Graph 04

THE TEN LARGEST COMMERCIAL ACTIVITIES IN BRAZIL IN 2016



- Besides, there were also significant movements in the price paid for wheat derivatives in Brazil in relation to the general index of the economy. The price variation of derivatives, in general, moves in the same direction from the price index of the economy, but is perceived more intensely, especially during 2018, showing that the prices of wheat derivatives are rising more than the prices of the economy as a whole..

Graph 04

PRICE PAID BY CONSUMERS FOR WHEAT INDUSTRY PRODUCTS COMPARED TO THE IPCA BETWEEN AUGUST 2017 AND SEPTEMBER 2018



- The higher prices of wheat derivatives, as of July 2018, were higher and varied more strongly than the inflation of the period. This behavior can be explained by the consecutive increases in the Brazilian dollar, due to the period of political instability, due to the presidential elections that cross the country.
- In this context it is also important to note that the real salaries in Brazil has been stabilizing since the middle of 2017. This is another factor that directly affects food consumption in Brazil and as a consequence the demand for wheat derivatives. The stability of the real salaries represents its appreciation and with this

greater purchasing power, this factor also contributes to a greater consumption of food in Brazil.

- What is expected, therefore, is that as the food trade is representative for wheat derivatives, there is an increase in the consumption of the products of this segment, but the increase may not have occurred at the same intensity since there is the exchange factor, which directly affects the prices of this segment, causing them to increase more than the inflation accumulated in the period.



1. THE BRAZILIAN WHEAT INDUSTRY

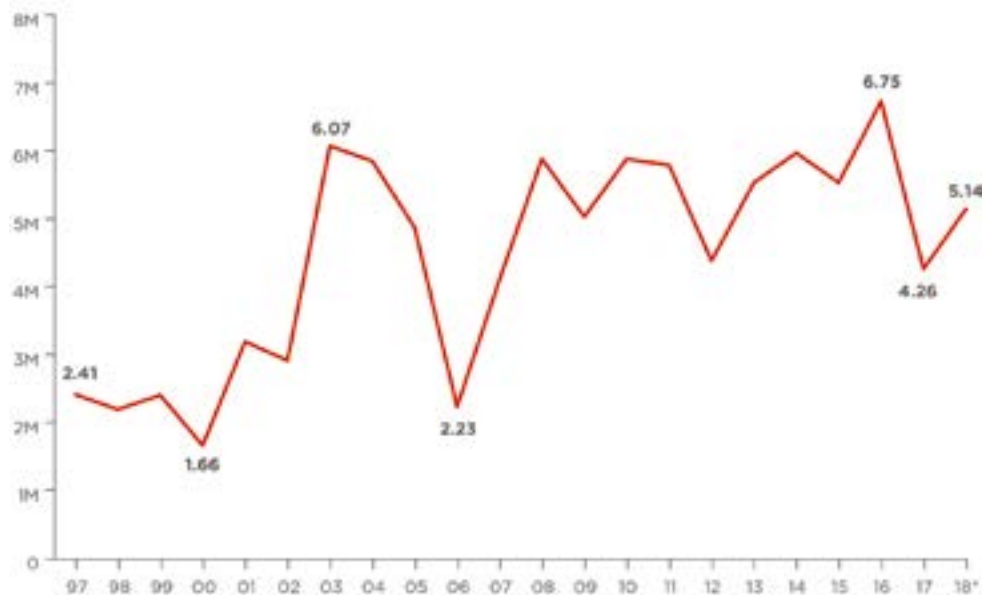
1.1 WHEAT CHAIN IN THE INITIAL POINT: PRIMARY PRODUCTION

The Brazilian wheat production has been floating over the years, with a strong growth in 2003, when it reached a production volume of 6.07 million tons, see Graph 1. The expectative at that time was that Brazil until 2013 would reach the full supply of this cereal, mainly driven by the expansion of cultivation in the Central-West region, with investment in knowledge and with the support of diffusion of techniques of direct planting.

Despite the positive expectative, the predicted scenario was not observed. From 2003 production fell consecutively until 2006, a year in which there was a vertiginous drop in relation to the previous harvest.

Graph 1

BRAZILIAN PRODUCTION OF WHEAT BETWEEN 1997 AND 2018* (IN MILLION TONS)



*Estimated in August/2018.

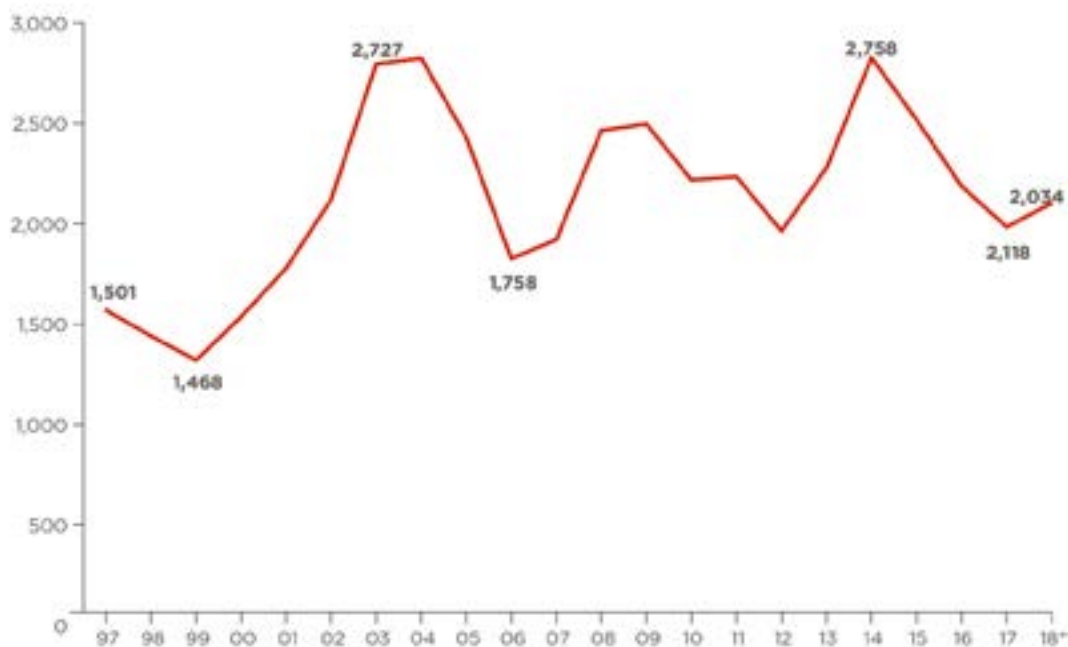
Source: Conab¹

¹ Available at: www.conab.gov.br

In 2005 wheat production was 4.9 million tons, but in the following year, there was a 54% reduction in this production, reaching a volume of 2.2 million tons. This decrease is explained by adverse climatic conditions, with the absence of rainfall during the planting period and frosts during the period of grain filling, and finally at the time of harvest there were excessive rains. In addition, there was a reduction in the planting area of 25%, as shown in Graph 2, given the low prices of the market, discouraging the farmers.

Graph 2

BRAZILIAN PLANTED AREA OF WHEAT BETWEEN 1997 AND 2018* (IN THOUSAND HECTARES)



*Estimated in August/2018.

Source: Conab¹

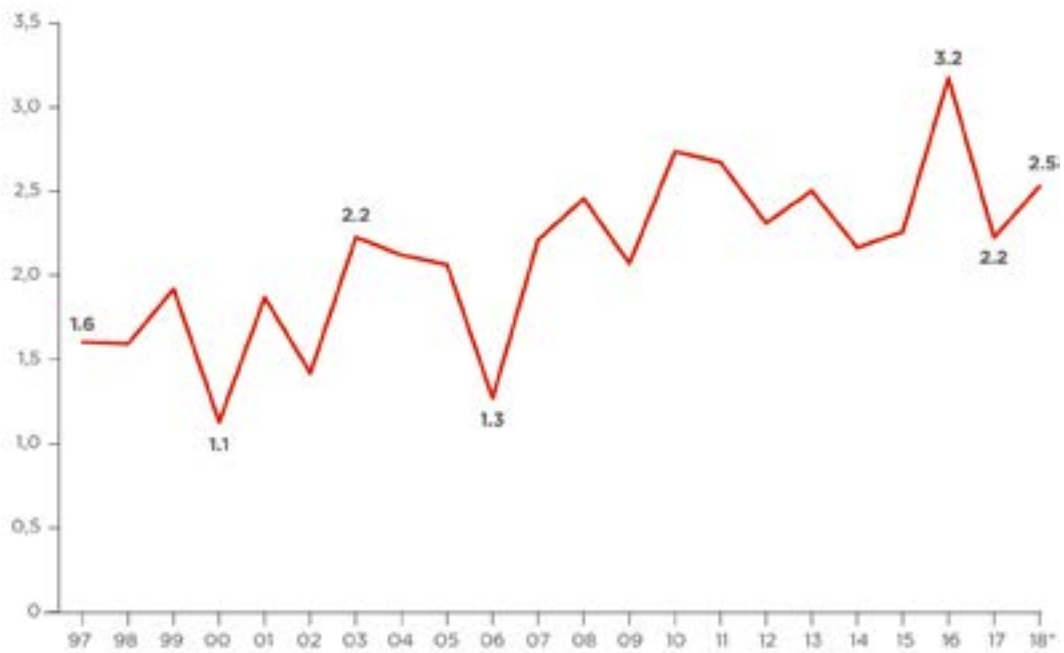
The harvests of 2007 and 2008 were reestablished and, with the increase in average income, as shown in Graph 3, of the planted area and with more favorable climatic conditions, production has grown, reaching once again levels of 2004 and presenting productivity gains related to the same period. Since then, despite still present

¹ Available at: www.conab.gov.br

oscillations, the wheat crop harvest has not reached volumes as low as those observed in 2000 and 2006, both in terms of production and productivity. The year 2016 was a record year, with a peak of production, when 6.73 million tons of grain were produced, 21.5% more than the harvest of 2015.

Graph 3

BRAZILIAN PRODUCTIVITY OF WHEAT BETWEEN 1997 AND 2018* (IN TONS PER HECTARE)



*Estimated in August/2018.

Source: Conab .

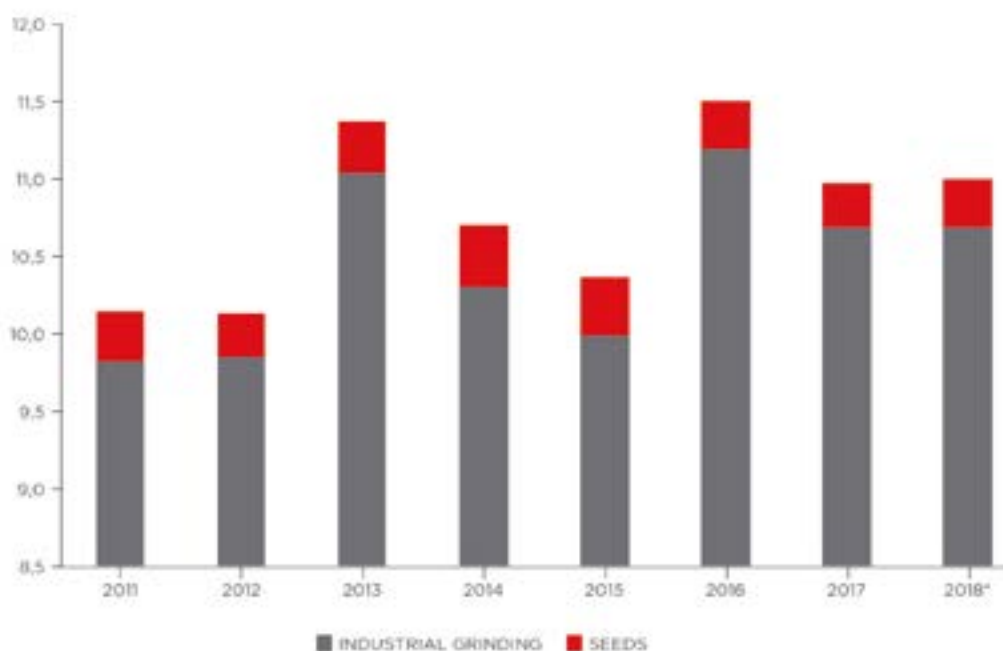
Record production in 2016 resulted in productivity gains, which exceeded 3 tons per hectare, a reduction of 13.5% in the planted area in relation to the previous year's harvest and a higher quality of the grain. The reduction of planted area is also a factor observed since 2014 and extended until 2017, supporting the idea that the gains of production obtained in this period came from increases in productivity. Besides, good climatic conditions also contributed to this result, with well-distributed rains and milder temperatures.

The 2017 harvest was not as good as in 2016, with a production of 4.3 million tons of wheat, a decrease of 36.6% related to the previous year, a 9.6% decrease in planted area and a reduction of 30% in productivity with about 2.2 tons per hectare. Despite the decline in 2017, mainly explained by climatic factors, the harvest is expected to close 2018 at a rate of growth, with a production of 5.1 million tons, gaining 20.6% over the previous year, besides a 6.17% increase in planted area and a 14% increase in productivity.

There are also the negative impact of climatic factors on Brazilian wheat production in 2017, the consumption of wheat flour also declined in Brazil, as shown in Graph 4, part of this behavior can be explained by the reduction in purchasing power in Brazil, changing consumption patterns in Brazil population, mainly in relation to the consumption of foods with higher added value.

Graph 4

BRAZILIAN WHEAT CONSUMPTION BETWEEN 2011 AND 2018* (IN MILLIONS OF TONS)



*Estimated in August/2018.

Source: Conab .

During the analyzed period, the peak consumption was in 2016, where about 11.5 million tons of wheat was consumed, in 2017 consumption was reduced to just under 11 million, but the expectation is that in 2018 consumption will grow again, surpassing 11 million tons, of which 5.14 million are produced internally and the Central-South region of the country accounts for practically all production, as shown in Graph 5.

Graph 5

PRODUCTION OF WHEAT OF EACH BRAZILIAN STATES FOR 2016, 2017 AND 2018* (IN MILLIONS OF TONS)





*Estimated in August/2018.

Source: Conab - Prepared by GV Agro.

The areas of wheat cultivation are distributed in the South, Central-West and Southeast regions, where the South of the country is responsible for the highest volume of production. During 2016, this region accounted for 91.11% of all Brazilian production, equivalent to 6.13 million tons. The state of Paraná was the main producer, responsible for 50.7% of all national production, 3.41 million tons, followed by Rio Grande do Sul, which was responsible for 37.12% of the national production, about 2.5 millions of tons.

During the year 2017, the South region was responsible for more than 85% of the national production, about 3.64 million tons. The states of Paraná and Rio Grande do Sul were responsible for 52% and 30% of national production, respectively. Together the states produced 3.5 million tons of wheat. The states of Paraná and Rio Grande do Sul were responsible for 52% and 30% of national production, respectively. Together the states produced 3.5 million tons of wheat.

Current estimates of Conab indicate that 5.18 million tons of wheat will be produced in 2018 and that the southern region would be responsible for about 89% of that production, 4.6 million tons. The state of Paraná is expected to hold more than 57% of the national produced volume, or about 3 million tons, followed by Rio Grande do Sul with 28% of the national production, 1.4 million tons.

Wheat is one of the most produced cereal in the world and has wide edaphoclimatic adaptation. In Brazil, the great representativeness of wheat in the southern region of the country is linked to these characteristics, since the grain develops better when it receives relatively low air temperatures in the first part of its cycle and this region, with a climate closer to temperate, favored the expansion of cultivation. But despite the good performance of the southern region of Brazil, worldwide Brazil is not among the world's largest producers, as Table 1 shows.

Table 1

WORLD WHEAT PRODUCTION BETWEEN 2017 AND 2018 (IN MILLIONS OF TONS)

COUNTRY	VOLUME	%
EUROPEAN UNION	152	20,01%
CHINA	130	17,12%
INDIA	99	13,00%
RUSSIA	85	11,21%
USA	47	6,25%
CANADA	30	3,96%

UKRAINE	27	3,56%
PAKISTAN	27	3,52%
AUSTRALIA	21	2,81%
TURKEY	21	2,77%
OTHERS	120	15,80%
WORLD	758	100%

Now the largest producer in the world is the European Union, which holds 20% of the total produced, about 152 million tons, followed by China, India Russia and the United States of America. Together these countries are responsible for about 68% of world wheat production. Although these five countries hold the largest share of world whe-at production, not all of them are the most productive. Only the European Union and China are among the regions with wthe highest world productivity, as shown in Table 2.

Table 2
WORLDWIDE WHEAT PRODUCTIVITY FOR THE 2017/2018 HARVEST (IN TONS PER HEC-TARE)

COUNTRY	PRODUCTIVITY
NEW ZEALAND	9.98
ZAMBIA	7.19
EGYPT	6.40
CHILE	6.20
SWITZERLAND	6.00
NAMIBIA	6.00
EUROPEAN UNION	5.76
CHINA	5.41
NORWAY	5.33
MEXICO	5.30

Source: USDA.¹⁴

The country with the highest productivity is New Zealand, producing about 10 tons per hectare. This variation is great among countries and even between continents. The temperate climate of regions such as Central Europe is more conducive to the development of this crop, while regions with more extreme climatic conditions, such as droughts or very cold temperatures, face greater difficulties.

The world's major wheat producers also account for most of the area planted, as shown in Table 3. Among the 10 countries that rank among the world's largest wheat crops, 8 also have the largest planted area, with the exception of Kazakhstan and Canada, indicating low productivity in these two countries. India is responsible for the largest portion of world wheat of planted area, with 30.8 million hectares, 14% of the total, followed by Russia, the European Union and China. Together these four countries hold about 108 million hectares planted with wheat, which corresponds to about 50% of the total in the world.

Table 3

GLOBAL PLANTED AREA WITH WHEAT CROP FOR THE 2017/2018 (IN MILLION HECTARES)

COUNTRY	AREA	%
INDIA	30.8	14.02
RUSSIA	27.3	12.46
EUROPEAN UNION	26.3	11.99
CHINA	24.0	10.93
USA	15.2	6.93
AUSTRALIA	12.3	5.58
KAZAKHSTAN	11.9	5.43
CANADA	9.0	4.10
PAKISTAN	9.0	4.09
TURKEY	7.8	3.55
OTHERS	45.9	20.92
WORLD	219.5	100.00

Source: USDA.¹⁵

The data presented indicate that Brazil, besides not being among the players in wheat production, is also not among the most productive countries. However in this scenario, since 2006, when it reached 2.23 million tons, grain production has been growing. Despite some oscillations over the years, since 2007, when the production level reached 4.1 million tons, levels remained higher than the volume reached in 2006 and, in addition, also exceeded 4 million tons annually. The same pattern is seen for Brazilian productivity, in 2006 an average of 1.2 tons of grain per hectare was produced and since then the rate has been increasing and has maintained annually always above 2 tons per hectare.

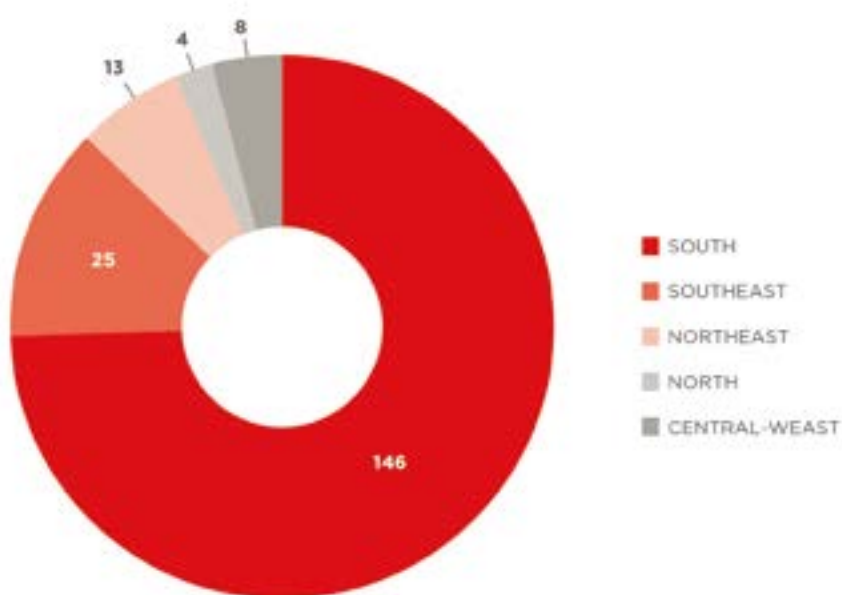
Even with optimistic production data and productivity increasing, Brazil is characterized as an importing country of wheat, mainly to supply the industry that uses grain as the raw material for many products that make up the Brazilian consumer basket, such as pasta and bread. For this, there is a need for analysis of the entire production chain.

1.2 INDUSTRIAL PRODUCTION OF WHEAT

To establish the analysis of the industrial chain of wheat an important factor to consider are the mills, since the wheat is a cereal which the usual form is the flour. Besides the production of wheat be concentrated in the South region of the country, the number of mills also occurs mostly in this region, as shown in Graph 6.

Graph 6

BRAZILIAN REGIONS OF WHEAT MILL IN ACTIVITY IN 2016

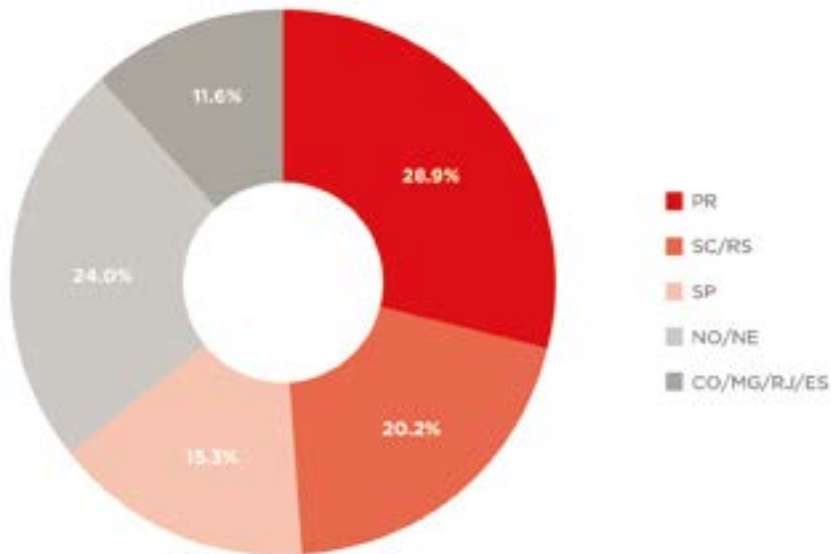


Source: Abitrito.¹⁶

Despite this concentration of about 74.5% of the number of mills being in the Southern region of the country, milling capacity is more distributed in the regions of the country. The states of Paraná, Santa Catarina and Rio Grande do Sul are responsible for about 49.1% of the total, see Graph 7. The North and Northeast regions together represent about 24%. Another 15.3% is concentrated in the state of São Paulo alone and the remaining 11.6% is distributed among the other states in the Southeast and Central West regions.

Graph 7

BRAZILIAN WHEAT GRINDING IN ACTIVITY BY REGION IN 2017



Source: Abitrigo.¹⁷

The largest distribution of the wheat grinding by the Brazilian regions contributes to the industrial production of wheat. In 2016 this production reached the value of about R\$ 62 billion reais. This information is interesting because it shows the importance of the value aggregation of this chain. The industrial production of biscuits, wafers and pantone is the one that holds the highest value of production, about 20 billion reais, representing 32%, as shown in Table 4.

Table 4

INDUSTRIAL PRODUCTION OF WHEAT AND BY-PRODUCTS IN 2016 (IN BILLIONS OF REAIS)

CLASSES OF INDUSTRIAL ACTIVITIES AND PRODUCTS	PRODUCTION VALUE	%
BISCUITS, WAFERS AND PASTONES	20.08	32.28
WHEAT MILLING AND MANUFACTURE OF BY- PASTA	14.61	23.49
WHEAT FLOUR	12.20	19.61
STARCHES, STARCHES OR STARCHES	10.37	16.67
OTHERS	2.14	3.45
TOTAL	62.20	100.00%

Source: IBGE - Municipal Livestock Research

The production of derivatives presents a production value of about R\$ 15 billion, 24%, followed by pasta, with R\$ 12.2 billion, 20%, wheat flour with R\$ 10.3 billion, 17% and starch, gums or sprinkles representing about 3.45% of the value of production, approximately R\$ 2.1 billion.

The value of wheat and by-products production shows that the domestic demand for foods derived from higher value-added wheat is representative and the greater the domestic production and supply capacity of this grain, the lower the costs for the industry and the possibility of offering products with higher quality, since it is possible to reduce costs. Or even a reduction in price that could be passed directly to the end-consumer.

It is important to note that the index presented in Graph 8 always refers to the same month of the previous year. Thus, it can be seen that in most of the months of 2017 the monthly variation of the index was negative, which means that in comparison to 2016 the production of wheat and derivatives was in decline. The situation began to improve in January 2018, but again reduce in the following months.

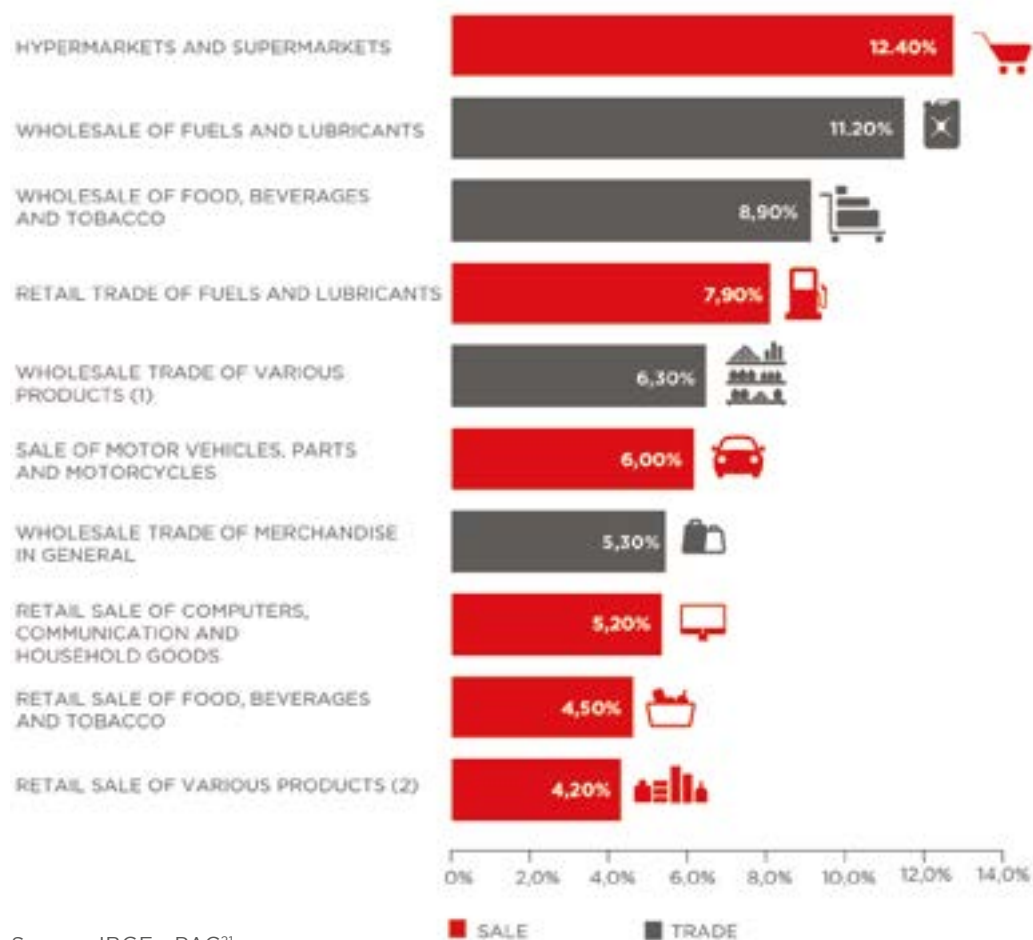
1.3 BRAZILIAN WHEAT TRADE

To analyze the volume of sales of the sector will be used the Monthly Survey of Commerce - PMC, available by IBGE . The purpose of PMC is to follow the situation of the retail sector and its main segments in Brazil. In order to analyze the industrial chain of Wheat, the data of commerce of the food sector in Brazil are used, whose main indicators are the nominal revenue and the volume of sales in the Brazilian retail trade. The target audience of PMC is commercial companies with 20 or more persons employed and the scope is national. The choice of this sector was due to the fact that for Brazil there are no data that allow making a panorama only of the consumption of wheat and derivatives, being the best indicator was the branch of "Hypermarkets, supermarkets, food products, beverages and tobacco".

According to data from the Annual Survey of Commerce - PAC , from 2007 to 2016, hypermarkets and supermarkets, and the wholesale and retail trade in food, beverages and tobacco, were the activities that gained the most share of net revenue from Brazilian commerce, as shown Graph 8. In addition, the PAC numbers indicate the period in which the economic crisis is exerting influence on the sector. In real terms, from 2015 to 2016, net revenue from hypermarkets and supermarkets reduced by 1.5% and fell by 0.9% between 2014 and 2015, but increased by 11.7% between 2013 and 2014, accumulating, in the period 2007-2016 an increase of 81.4%.

Graph 8

THE TEN LARGEST COMMERCIAL ACTIVITIES IN BRAZIL IN 2016



Source: IBGE - PAC²¹.

(1) Wholesale trade in pharmaceuticals products, perfumery, cosmetics and medical, optical, orthopedic, office supplies, stationery and household articles.

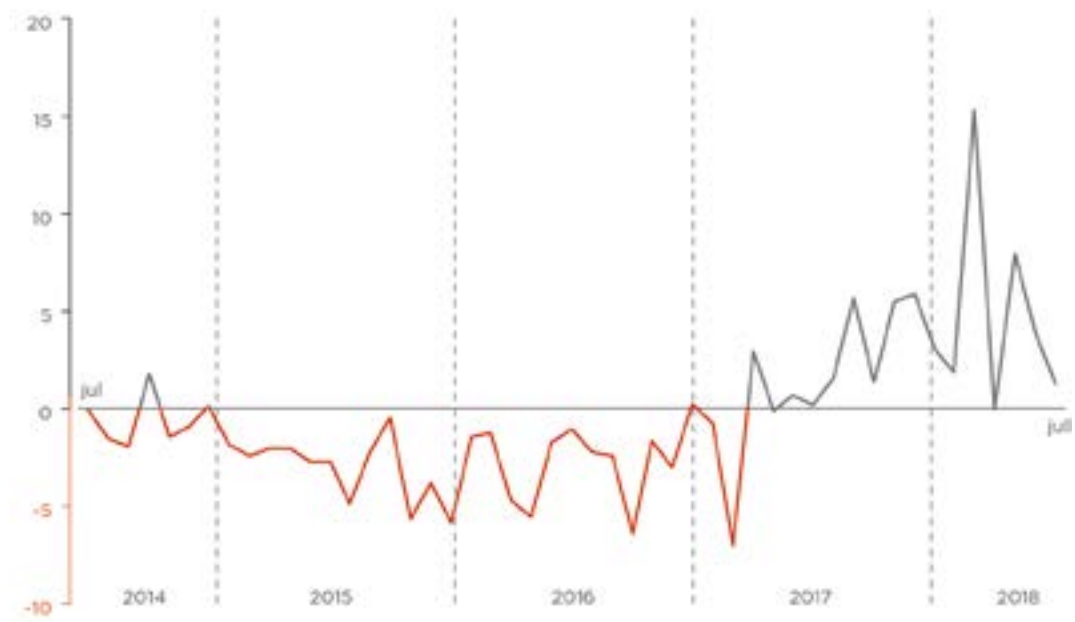
(2) Retail trade in pharmaceuticals products, perfumery, cosmetics and medical, optical and orthopedic articles.

The increase in the share of Brazilian food in commercial activities is related to the fact that the decrease in other activities, as well as the fact that food demand is not affected by a decrease in income, there is only the substitution of brands for lower value items.

Even with the growing share of domestic trade, the volume of sales of this segment between July 2014 and July 2018, according to the PMC, indicates a long period of negative variation accompanying the movement of the economic crisis when compared to the same month of the previous year, and began to recover from the first half of 2017, see Graph 9.

Graph 9

BRAZILIAN SALES VOLUME IN HYPERMARKETS AND SUPERMARKETS BETWEEN 2014 AND 2018. (RELATED TO THE SAME MONTH OF THE PREVIOUS YEAR)



Source: IBGE - Monthly Trade Survey²³.

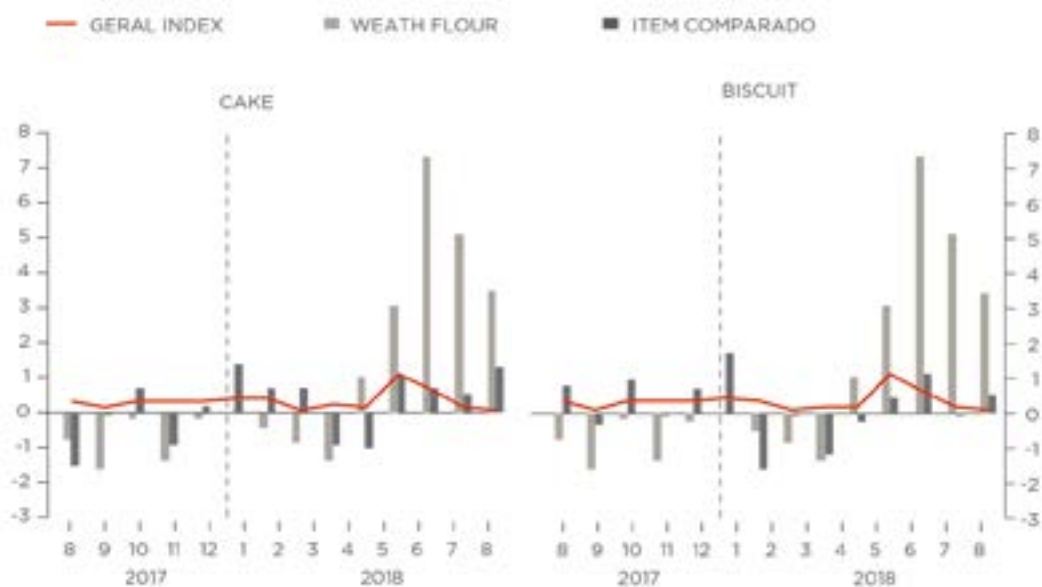
Since April 2017, the volume of sales in Brazilian hypermarkets and supermarkets has been positive, despite the loss of rate since March 2018. The performance of the activity has been supported in part by the stability of the real income mass and prices. Since the activity of hypermarkets is a basic activity, it has a greater ability to absorb income. So when there is any increase in income in families, especially those of lower income, there is the conversion in a purchase of supermarket products. As wheat and its derivatives are foods heavily present on the Brazilian table, their consumption can be linked to changes in the sales volume of Brazilian supermarkets and hypermarkets and the way their prices behave in the national market.

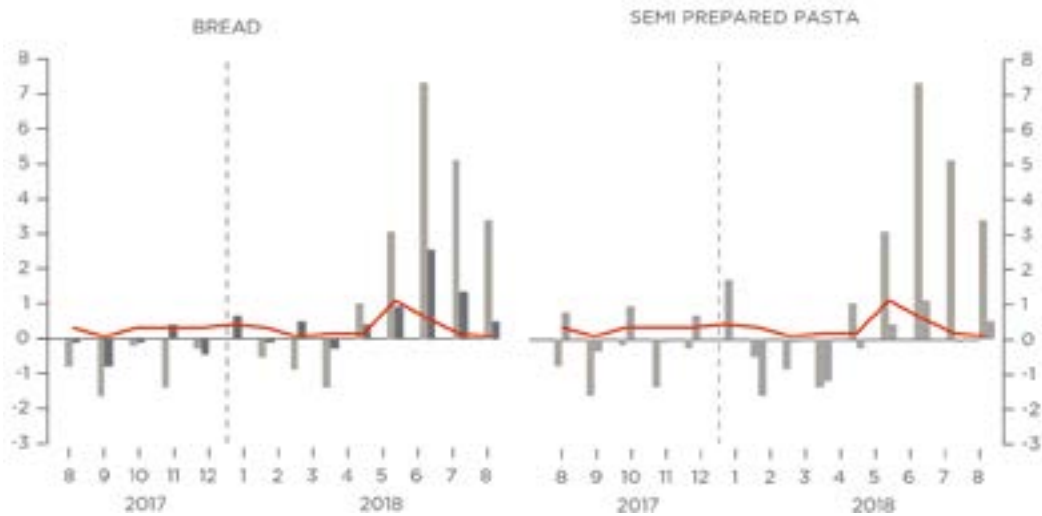
As Brazil is an importing country of wheat, another factor must be taken into account when analyzing the consumption of this industrial chain, the exchange rate. As the exchange rate directly affects the final price of wheat derivatives, it is possible to infer that even if the wheat market accompanies the rest of the food market in Brazil, its consumption may change more or less given the exchange variation, since the oscillation of prices will be influenced by this additional variable.

As presented in Graph 10, between August 2017 and September 2018 there are no strong fluctuations in the general price index of the economy. The final consumer realizes that the changes in the price of wheat and its derivatives accompany the movement of the index, but with stronger variations, which can be explained by the increase of the dollar that opened the year of 2018 relatively stable and this was maintained during almost all the 1st semester, but in the face of uncertainties about the outcome of the presidential elections in Brazil, it has been rising throughout the second half of the year.

Graph 10

PRICE PAID BY CONSUMERS FOR WHEAT INDUSTRY PRODUCTS COMPARED TO THE IPCA BETWEEN AUGUST 2017 AND SEPTEMBER 2018

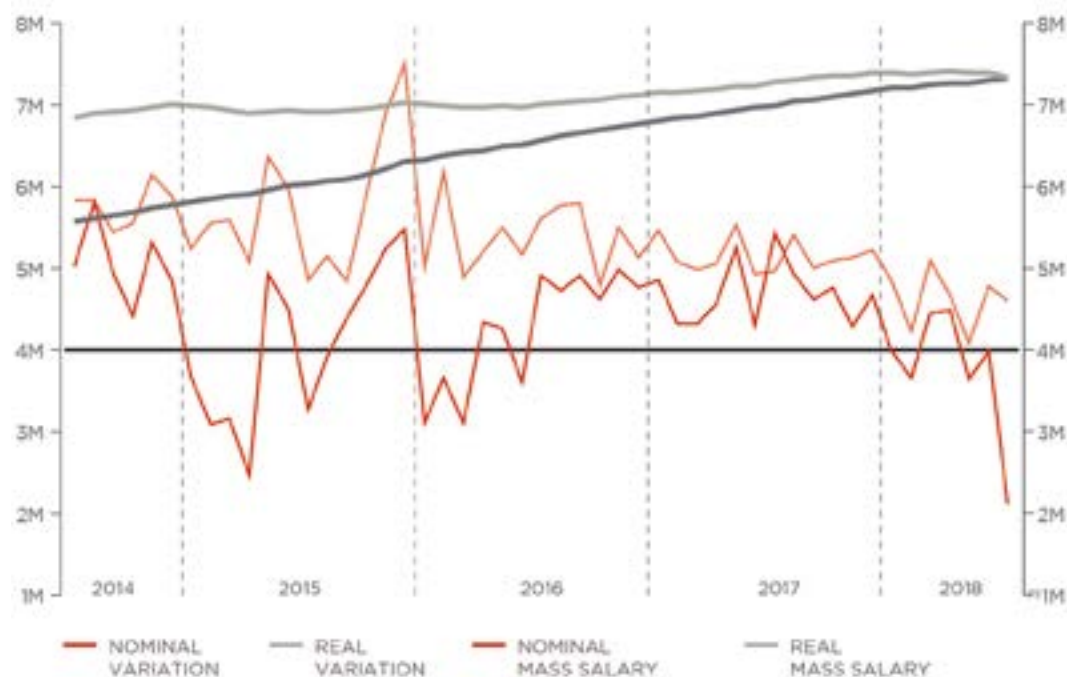




Source: Sidra - IBGE²⁴.

Besides the price of wheat and its derivatives, another factor that affects its consumption is the real mass salaries of the Brazilian population, that is, the sum of all the salaries paid to workers during the year. In Brazil, between 2014 and 2016, the real mass remained stable, in other words, it did not show growth. But from 2016 there was real growth, explaining the increase in consumption and volume of food sales in Brazil.

Graph 11

NOMINAL AND REAL SALARY AND THEIR RESPECTIVE MONTH-TO-MONTH VARIATIONS BETWEEN 2014 AND 2018 (IN MILLIONS OF REAIS)

Source: Banco Central ²⁴.

The real variation shows that when the series is deflated, that is, if only real values are considered, excluding inflation, there is a valorization of the mass salary from 2016. Even if there is such a valuation, it occurs at decreasing rates, so there is a stabilization between the nominal and the real masses. This movement from 2016 may be related to the increase in food consumption.

THE TRUCK DRIVER'S STRIKE AND THE WHEAT SECTOR

The Brazilian Gross Domestic Product (GDP) finished the year 2017 in R\$ 6.56 trillion, while the agribusiness closed in R\$ 1.42 trillion, representing 22% of the total GDP. The Brazilian meat sector, composed of swine, poultry, and beef, was responsible for 31% of agribusiness GDP in 2017, ending the year at R\$ 433 billion. Brazil is still the 4th largest producer of pork in the world and the 2nd largest producer of poultry and beef.

Despite the decline in 2016 compared to 2015, the Brazilian agricultural exports recovered and reached a record volume in 2017, representing 44% of total exports, equivalent to about US\$ 96 billion of the US\$ 218 billion exported by Brazil. The meat complex was one of the major causes of this result, as shown in Graph 1, been responsible for 7% of Brazilian exports, around US\$ 15 billion, in the fifth place in the overall ranking.

Graph 1

PARTICIPATION OF PRODUCT GROUPS OF BRAZILIAN EXPORTS IN 2017

Source: Ministry of Development Industry and Commerce – MDIC (2018) ².

In order to better understand the relevance of this sector, it is important to determine the mapping of meat production in Brazil, for which different databases are used information in both national and regional levels, for some cases state data are also evidenced. The production

² Available at: <http://www.mdic.gov.br/index.php/comercio-exterior/estatisticas-de-comercio-exterior/series-historicas>

volume and value data are presented.

This observation is important, since the Brazilian meat sector needs to be presented and considered in each of its segments, beef, pork, and poultry, in a disaggregated way since the production, commercialization and industry present the data in this way. In addition, the representativeness of each of these segments for the meat sector, agriculture and the economy, in general, is quite different.

1.2 MEAT SECTOR IN THE INITIAL POINT: EFFECTIVE OF THE HERBS

In Brazil during 2016, the herds presented 218 million head of cattle, about 40 million swines, and 1.4 billion chickens, according to data indicated by the Municipal Livestock Survey (Brazilian Institute of Geography and Statistics - IBGE, 2018). The concentration of swine and chickens are herds concentrated in the South of the country, with 50% and 45% respectively, followed by the Southeast region with 17% and 27%, respectively. For cattle, this pattern changes, the region responsible for the largest herd is the Midwest with 34%, 75 million head, followed by the North region with 22%, which represents about 48 million head.

Table 1
EFFECTIVE OF HERDS (MILLIONS OF HEADS) BY TYPE AND PARTICIPATION IN THE HERD FOR THE BRAZILIAN REGIONS IN 2016

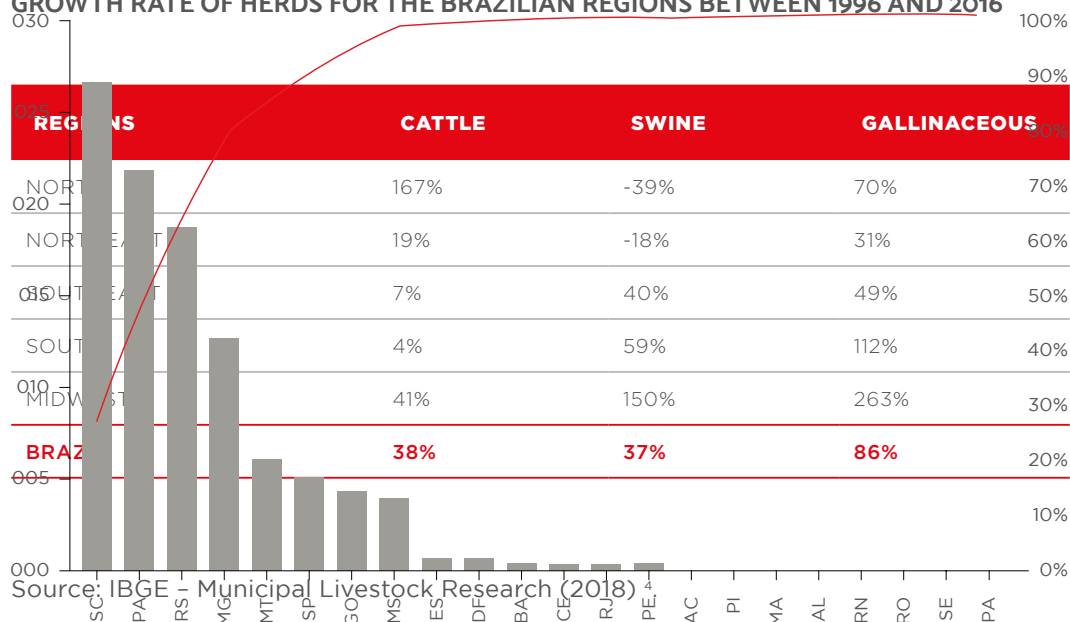
REGION	EFFECTIVE OF HERDS					
	CATTLE		SWINE		CHICKEN	
	HEADS	%	HEADS	%	HEADS	%
NORTH	47,98	22	1,44	4	50,93	4
NORTHEAST	28,47	13	5,83	15	156,26	12
SOUTHEAST	39,12	18	6,77	17	359,85	27
SOUTH	27,58	13	19,95	50	612,58	45
MIDWEST	75,07	34	5,96	15	172,67	13
BRAZIL	218,23	100	39,95	100	1.352,29	100

Source: IBGE – Municipal Livestock Research (2018) ³.

Over the last decades, the number of herds has presented a significant growth rate, both in Brazil and in their regions. The most significant growth in Brazil is the number of heads of chickens that increased 86% between 1996 and 2016, followed by cattle with 38% and swine with 37%. The Central-West region had the highest growth rate of swine and chicken for the period analyzed, 150% and 263%, respectively. The North region was the most important related to the cattle herd with a growth rate of 167%.

Table 2

GROWTH RATE OF HERDS FOR THE BRAZILIAN REGIONS BETWEEN 1996 AND 2016



The evolution of the rate of this growth in Brazil is presented in the Graph 2, where it can be observed that the swine herd jumped 37% between 1996 and 2016, rising from 29 million head to 40 million. This growth was stable over the years, with falls in 2002 and 2013, where the size was 32 and 37 million head, respectively. In 2012 the main inputs for the production of swine presented an expressive increase in raising the costs of production and explaining the fall of around 2 million head between 2012 and 2013.

³ Available at: <https://sidra.ibge.gov.br/pesquisa/ppm>

⁴ Available at: <https://sidra.ibge.gov.br/pesquisa/ppm>

Graph 2

THE CUMULATIVE GROWTH RATE OF HERDS IN BRAZIL BETWEEN 1996 AND 2016

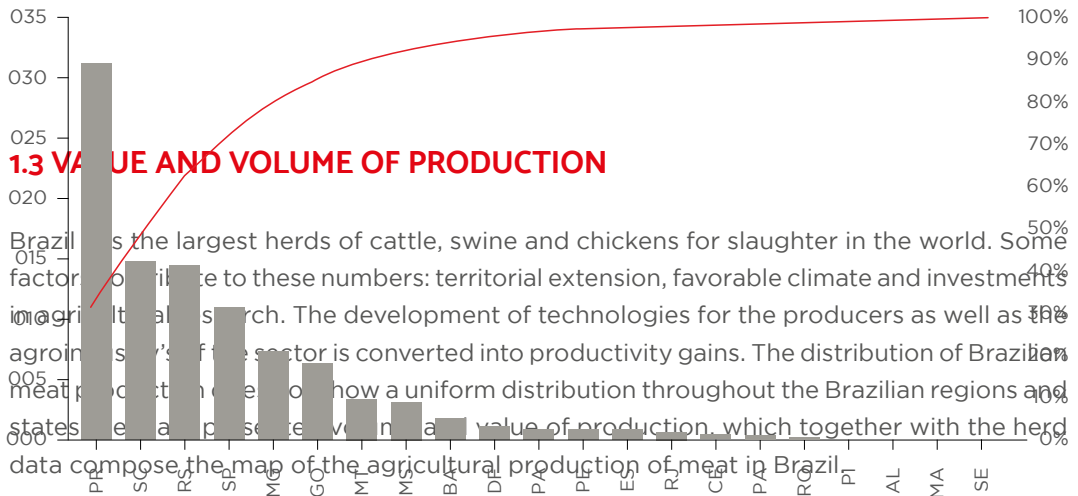
Source: IBGE – Municipal Livestock Research⁵.

The cattle herd, which in 1996 had about 158 million heads distributed throughout Brazil, grew by 38% in 20 years, reaching 218 million head in 2016. The growth of this herd, like that of swine, has been stable over the years and reached one of its peaks in 2005, with 207 million head, a growth of 31% in relation to 1996. From 2005 the size of this herd declined in the two subsequent years and returned to its growth trajectory in 2008 and in 2010 it managed to surpass 2005 levels for the first time, reaching 210 million head, an increase of 32%.

In line with the herds already mentioned, gallinaceous also show a growth trajectory over the years, with 728 million heads in 1996, reaching 1.35 billion in 2016, a growth of 86%. In 2006 this herd reached the first mark of 1 billion head, a growth of 39% in relation to

⁵ Available at: <https://sidra.ibge.gov.br/pesquisa/ppm>

1996. Between 2011 and 2012, it was registered their first drop for the period observed, about 23 million head, during a time that Brazilian agriculture was affected by a drought that reduced the agricultural production destined to the production of feed and bran for animal feed.



The Brazilian Gross Value of Production (GVP) ended the year 2017 at about R\$ 540 billion, livestock is responsible for 33% of this value, about R\$ 176 billion. The most significant participation in livestock is the cattle, which account for about 40% of the value, approximately R\$ 70 billion, as shown in Graph 3.

Graph 3
GROSS VALUE OF BRAZILIAN LIVESTOCK PRODUCTION FOR THE YEAR 2017



Source: MAPA⁶ - Prepared by FGV.

When we consider cattle, pigs and chicken, the GVP of these segments is 135 billion reais, about 25% of Brazil's total and 77% of the total livestock, showing the relevance of this segment within the national production.

1.3.1 CATTLE

Brazil, with 218 million cattle head, is the largest herds in the world and according to data from the United States Department of Agriculture - USDA⁷ (2018), in 2017 at the second position in this ranking, behind only India. The world production of this sector is also the second largest in the world, being only behind of the United States and presenting a growth rate between 1997 and 2017 of 58%, as shown in Graph 4.

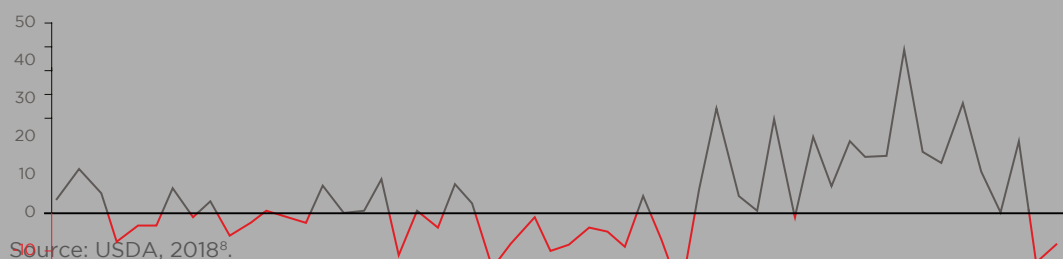
In the first decade, between 1997 and 2007 there was an expressive increase of 54%, coming from the mark of 6 million tons and reaching 9.3 million. Between 2000 and 2005 there was Bovine Spongiform Encephalopathy in Europe, also known as "mad cow disease", during which time there was greater acceptance of Brazilian beef in the foreign market, boosting production by 32% in this period. From the year 2000, the livestock sector has observed successive increases in the price of meat, which also helps to explain the observed growth rate.

⁶ Available at: <http://www.agricultura.gov.br/assuntos/politica-agricola/valor-bruto-da-producao-agropecuaria-vbp>

⁷ Available at: <http://www.agricultura.gov.br/assuntos/politica-agricola/valor-bruto-da-producao-agropecuaria-vbp>

Graph 4

PRODUCTION GROWTH OF BRAZILIAN BEEF IN MILLION TONS BETWEEN 1997 AND 2017



After 2007 the production behavior remained stable, reaching 9.55 million tons in 2017, an increase of 2.7% in the period. The production record came in 2014 with a production of 9.72 million tons. The growth of Brazilian production surpassed the growth of cattle herds. While production increased by 58%, the herd showed a growth of 38%, indicating successive productivity gains in the sector. As already mentioned, the Midwest and North regions represents 56% of the total head of the herd. However, this was not always the standard, the Midwest region, between 1996 and 2016 always responsible for about 34% of the Brazilian total, as shown in Graph 5. In 1996 this 34% represented around 53 million head, already in 2016, the part came to represent 75 million.

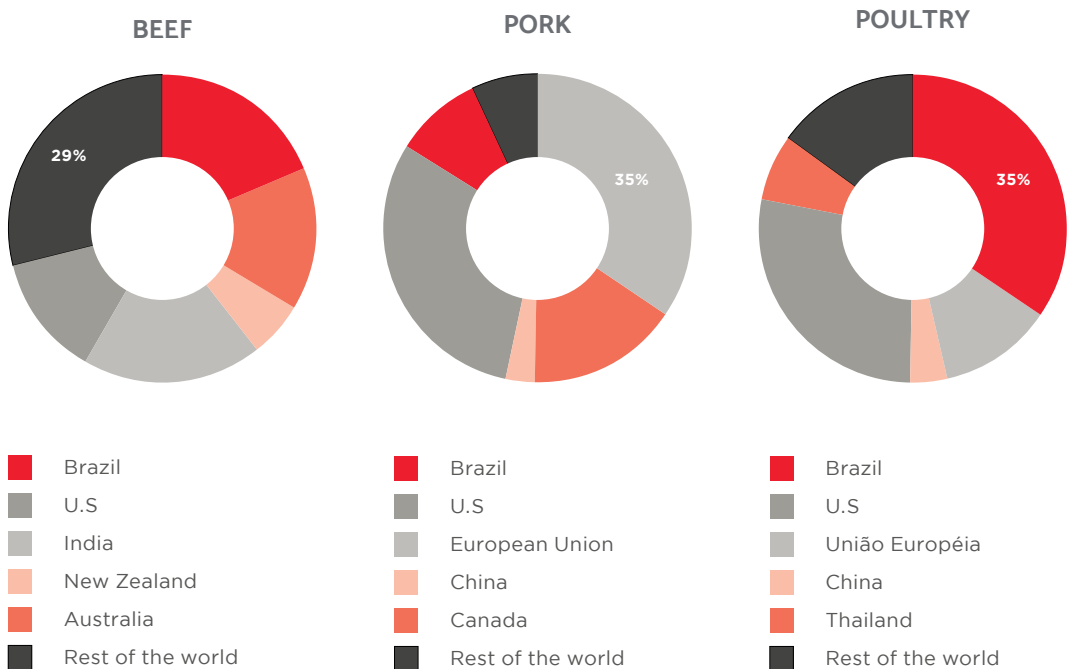
Graph 5

PARTICIPATION (%) OF THE BRAZILIAN REGIONS IN THE CATTLE HERD IN THE PERIOD FROM 1996 TO 2016

2. TRADE BALANCE OF THE BRAZILIAN BEEF SECTOR

Brazil, besides being a great meat producer, is also very expressive in the foreign market of this segment. Worldwide it occupies the top positions in beef and poultry exports and is the fourth largest exporter of pork, as shown in Graph 20.

Graph 20
GLOBAL MEAT EXPORTS IN 2017



Source: USDA¹.

Brazil is responsible for 19% of total exports of beef, 9% of pork and 35% of poultry. The European Union ranks first in pork exports, followed by the United States and Canada.

¹ Available at: <https://apps.fas.usda.gov>

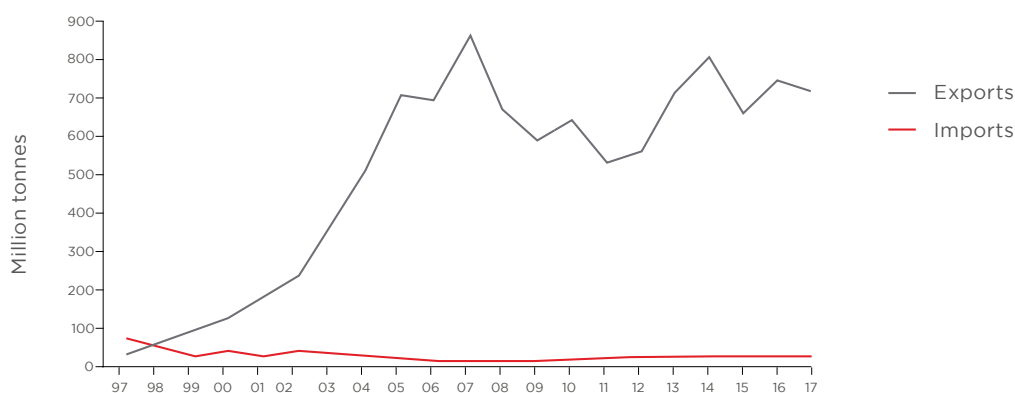
Brazilian foreign trade saw their policies suffered major changes in the 1990s, when a process of trade liberalization began that directly and indirectly affected several sectors of the national economy. During this period, economic agreements were consolidated between blocks and countries. In addition to trade liberalization, the exchange rate still had an influence on Brazilian meat exports, making this chain more competitive, with a devaluation of the Brazilian currency, which boosted agribusiness exports. However, during the overvaluation of the currency during the Real Plan there was less profitability in the export of these products. Internally it was possible to observe a more intense competition in the meat market with increase in the production and consumption of poultry and pork. Against this situation, the livestock farmers began a process of productive gains in order to compete externally.

2.4.3 BEEF

Between 1997 and 1998, Brazil changed from the category of importer for exporter of beef and since then remained in that position. In 1997 Brazil exported some 31 million tons of beef, as shown in Graph 21, while importing about 69 million, closing with the deficit of the trade balance of this sector. Between 1997 and 1998 the largest exporters of beef were Australia, the USA, the European Union and New Zealand, Brazil was ranked only seventh in this list.

Graph 21

BRAZILIAN EXPORTS OF BEEF, MILLION TONS BETWEEN 1997 AND 2017



Fonte: Comex Stat (2018)².

² Available at: <http://comexstat.mdic.gov.br/pt/geral>

Between 1997 and 2002, Brazilian exports jumped more than 600%, from 31 million tons to 233 million, making Brazil the fourth position in the beef exporter ranking at that time and in 2005, with 696 million tons exported Brazil became the world leader in this sector.

The "mad cow" crisis faced by the European Union since 1996, aggravated in 2001; outbreaks of foot-and-mouth disease in the Argentinian herd in 2000; and the severe drought that affected Australia in the end of 2002 and 2003 and the appreciation of the Australian dollar are among the external factors that contributed to the Brazilian rise. Besides that, since 1992 Brazil has already implemented the National Foot-and-Mouth Disease Program (PNFA), in order to expand the zones free of foot-and-mouth disease, which has been gaining strength over the years. In 2005, Brazilian beef exporting companies also used the internationalization strategy to increase access to markets such as the United States and the European Union.

In 2007 the Brazilian exports had already reached 847 million tons, the biggest volume during the analyzed period, but for the first time they lost their breath and fell to 665 million tons in 2008. This variation can be explained by the temporary embargo of the fresh beef by the European Union due to the lack of traceability of the animals. In 2009 the country faced another year of declining sales, reinforced by the economic crisis that devastated the world. The reduction in Brazilian exports continued until 2011, reaching 528 million tons, in the same levels seen in 2004. Meanwhile, after 2011 the exports increased again and reached 800 million tons in 2014. In 2015, due to economic problems in Russia, one of the main buyers markets in Brazil, the volume exported reduced again and reached 651 million tons, but grew in 2016 reaching 738 million.

In 2017 an internal issue affected the sector's exports, the Operation Meat Weak. In the monthly comparison of results, during March, the month of the Operation Meat Weak, and April, the drop in sales was 25%, but the sector was solid and the decrease in total volume was just under 4%, reaching a volume of 710 million tons exported this year. For the year 2018, until the month of July, 768 million tons of beef have already been exported. With this volume, Brazil has already surpassed the mark of 3 billion reais in beef exports. Therefore, Brazilian exports have already exported 58 million tons beyond 2017 and the sector is quite robust, even though it has been a problem such as Operation Meat Weak.

The total beef exports hit a record in July, up 24% from the same month in 2017. The competitive exchange rate for exports, the strong international market demand and the high availability of meat in the domestic market are factors that drive these increases, creating the expectation that not only July, but the entire year of 2018 will consist of records for the Brazilian beef exports.

Part of all this increase is driven by sales growth in markets such as China, Egypt and Chile that by the middle of 2018 have already surpassed their meat demands when compared to the year 2017. In addition, the global beef trade should grow as a whole, driven mainly by the demands of China and Hong Kong, which are currently the largest Brazilian buyers, as shown in Table 6.

All the Brazilian beef volume was exported for 89 countries in 2017 and has already reached 92 in 2018. In 2017 Brazil exported about US\$ 2.8 billion in beef, equivalent to 710 million tons. The main importers were Hong Kong, China, Russia and Iran, responsible for 60% of the volume exported by this sector, about 429 million tons. In 2018 the sector has already hit the 2017 mark, exporting US\$ 3.04 billion and 768 million tons. The main buyers of Brazilian meat are Hong Kong, China, Chile and Egypt, with 53% of the total volume, about 408 million tons.

Table 06

BRAZILIAN BEEF EXPORTED, IN MILLIONS OF TONS, FOR THE YEARS 2017 AND 2018

REGION	2017		2018*		
	VOLUME	%	VOLUME	%	
HONG KONG	171	24	HONG KONG	165	21
CHINA	110	15	CHINA	123	16
RUSSIA	86	12	CHILE	69	9
IRAN	63	9	EGYPT	51	7
REST OF THE WORLD	281	40	REST OF THE WORLD	360	47
TOTAL	710	100		768	100

*Values from January to July.

Source: Comex Stat, 2018³.

Considering only the first quarter of 2018, exports represented 50% of the total marketed until the month of July, about 385 million tons. In the second quarter it is necessary to consider a new milestone in terms of perspective for the meat industry: the truck drivers' strike.

3 Disponível em: <http://comexstat.mdic.gov.br/pt/geral>

With the stoppage of the supply of inputs for the production and transportation of the sector were compromised, the volume of exports was reduced to 238 million tons, about 31% of the total. In July, the sector had a new energy and exports of this month were the highest recorded in 2018, representing 19% of the total volume of 675 million tons.

The Brazilian beef exports in recent years were basically composed of 14 product differentiations (described in Appendix 1) categorized by the Mercosur Common Nomenclature (NCM Code), which represented in 2017 and 2018 for 100% of the products exported by the sector.

From the point of view of demand, Brazil has imported, mainly from Paraguay, Argentina, Uruguay and Australia. For the last 10 years these countries accounted for at least 97% of Brazilian imports, in many years they accounted for 100%.

The first half of 2018 similar movements were observed to the same period of 2017 in relation to the movement of prices of the bullock. Based on the average monthly values of the ESALQ/BM&FBovespa Cattle Indicator (state of São Paulo), deflated by the IGP-DI of May 18, consecutive declines have been observed since the beginning of 2018.

In May 2018, the bullock market registered a weak phase in the first weeks of May, and was caught in the second fortnight of the month, before the truck drivers' strike. The average indicator of the ESALQ/BM&FBovespa Cattle indicator was R\$ 140.59, the lowest in real terms since August 2017. In June, the accumulated index fell 1.83% and ended at R\$ 139, 40. For July, the accumulated index of the month increased by 1.7% and ended at R\$ 141.70. Although it is a small elevation, it is the biggest one verified so far for 2018. The average Cattle indicator ESALQ/BM&FBovespa was R\$ 140.59, the lowest level, in real terms, since August 2017. In June, the accumulated recorded a fall of 1.83%, and ended at R\$ 139.40. For July, the accumulated index of the month increased by 1.7% and closed at R \$ 141.70. Although it is a small elevation, it is the largest level verified so far for 2018.

Based on the average monthly values of the ESALQ/BM & FBovespa Cattle Indicator (state of São Paulo), deflated by the IGP-DI of May/18, it is possible to observe consecutive falls since the beginning of 2018. Therefore, in the index accumulated in the first half, the indicator dropped 9.23%. In 2017 the same trend was observed, when the accumulated fall from January to June was 11.55%. For the previous years, the movement was different, with a high of 0.62% in the first half of 2016, a 2.2% decrease in 2015 and an increase of 5.65% in 2014.

In 2017, the operation "Meat Weak", the plea of the largest Brazilian meat industry (which resulted in a strong reduction in the purchase of animals by this large player) and the resumption of the Funrural discount discouraged the businesses made by cattle fattening

farmers. In 2018, since January, what happened was a weak pace of business, with slaughterhouses acquiring lots only when there was a greater need.

In addition, exports performed well in the first quarter of the year, and declined sharply after April, with the volume of meat available on the domestic market increasing and the price of arroba declining, as the domestic market was unable to absorb all the volume. Added to this scenario the productivity of Brazilian livestock has grown in recent years, a scenario that increases the availability of meat.

The main categories of products sold abroad, according to Table 7, are frozen boneless meats, which made up in both 2017 and 2018 more than 75% of the volume exported by Brazil.

Table 07
BRAZILIAN BEEF EXPORTS VOLUMES BY CATEGORY, IN MILLIONS OF TONS, FOR THE YEARS 2017 AND 2018

DESCRIPTION	2017		2018*	
	VOLUME	%	VOLUME	%
BOVINE MEAT, FROZEN, FROZEN	558	78,6	581	75,65
BONELESS MEAT OF BOVINE ANIMALS, FRESH OR CHILLED	66	9,28	99	12,82
OTHER EDIBLE OFFAL OF BOVINE ANIMALS, FROZEN	66	9,37	64	8,38
OTHER CATEGORIES	20	2,76	24	3,14
TOTAL	710	100	768	100

*Values from January to July.

Source: Comex Stat (2018)⁴.

4 Available at: <http://comexstat.mdic.gov.br/pt/geral>

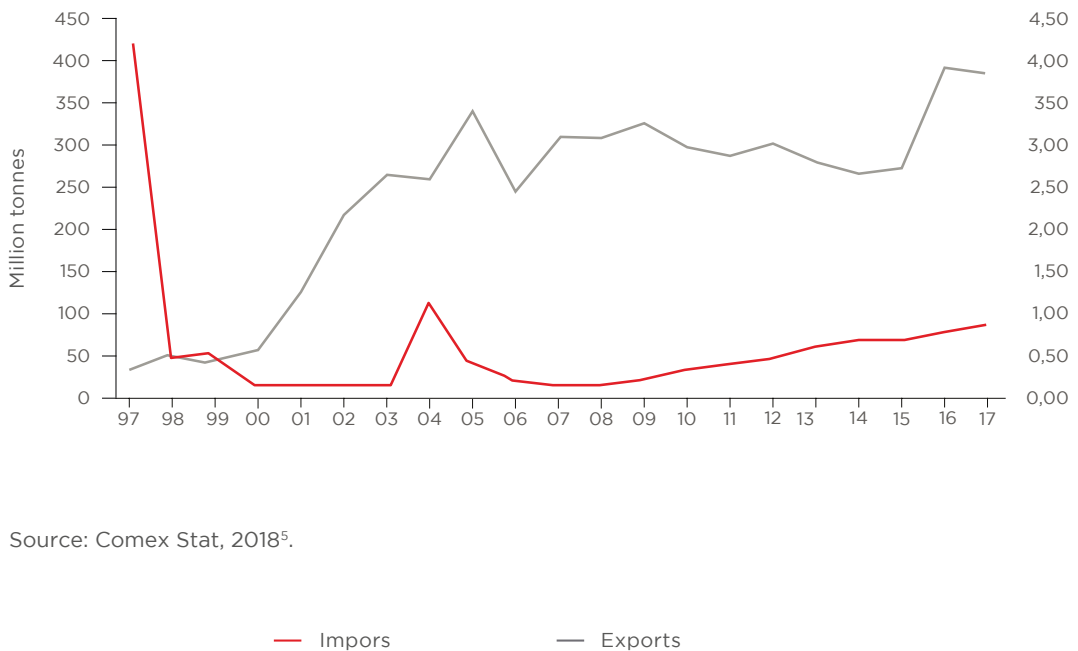
2.4.4 PORK

The export of pork has been contributing for more than two decades contributing for the surplus of the agricultural trade balance, as shown in Graph 22.

The record levels of 2016, with export volume of 396 million tons, contributed to support the sector in 2016, after facing high costs with corn acquisition and weak domestic demand, the sector saw themselves vulnerable.

Graph 22

BRAZILIAN EXPORTS OF PORK, MILLION TONS BETWEEN 1997 AND 2017



Source: Comex Stat, 2018⁵.

Brazil reached its record level with pork exports in 2016. The push came mainly from shipments to China, which increased the volume exported from 1 million tons in 2015 to about 54 million tons in 2016, as shown in Table 8. Despite the increase in Chinese demand, the main importers of Brazilian pork are Russia and Hong Kong.

5 Available at: <http://comexstat.mdic.gov.br/pt/geral>

Table 08

BRAZILIAN PORK EXPORTED, IN MILLIONS OF TONS, FOR THE YEARS 2017 AND 2018

REGION	2015		2016		2017	
	VOLUME	%	VOLUME	%	VOLUME	%
RUSSIA	130	47,3	134	33,8	158	41,2
HONG KONG	59	21,4	94	23,7	79	20,6
CHINA	1	0,2	54	13,7	29	7,5
SINGAPORE	16	5,9	19	4,9	18	4,8
ARGENTINA	6	2,0	11	2,7	18	4,8
URUGUAY	11	4,1	15	3,7	17	4,4
ANGOLA	19	7,0	17	4,2	16	4,2
CHILE	4	1,6	13	3,2	12	3,1
GEORGIA	4	1,5	5	1,3	5	1,4
UNITED ARAB EMIRATES	3	1,2	5	1,3	4	1,2
REST OF THE WORLD	22	7,9	30	7,6	27	6,9
TOTAL	275	100	396	100	384	100

Source: Comex Stat⁶.

The main products marketed by the Brazilian exporting are: Other frozen pork, responsible for about 84% of the sector's exports in both 2017 and 2018 and Other frozen edible offal of pork, responsible for about 10% of sales in 2017 and 11% in 2018, according to Table 9.

6 Available at: <http://comexstat.mdic.gov.br/pt/geral>

Table 09

BRAZILIAN PORK EXPORTS VOLUMES BY CATEGORY, IN MILLIONS OF TONS, FOR THE YEARS 2017 AND 2018

DESCRIPTION	2017		2018*	
	VOLUME	%	VOLUME	%
OTHER MEAT OF SWINE, FROZEN	323	84,1	227	84,3
OTHER EDIBLE OFFAL OF SWINE, FROZEN	38	9,9	30	11,0
HAMS, SHOULDERS AND CUTS THEREOF, OF BONE, FROZEN	13	3,5	9	3,3
CARCASES AND HALF-CARCASES OF SWINE, FROZEN	6	1,4	2	0,7
OTHER PRODUCTS	4	1,1	2	0,7
TOTAL	384	100	269	100

*Values from January to July.

Source: Comex Stat⁷.

7 Available at: <http://comexstat.mdic.gov.br/pt/geral>

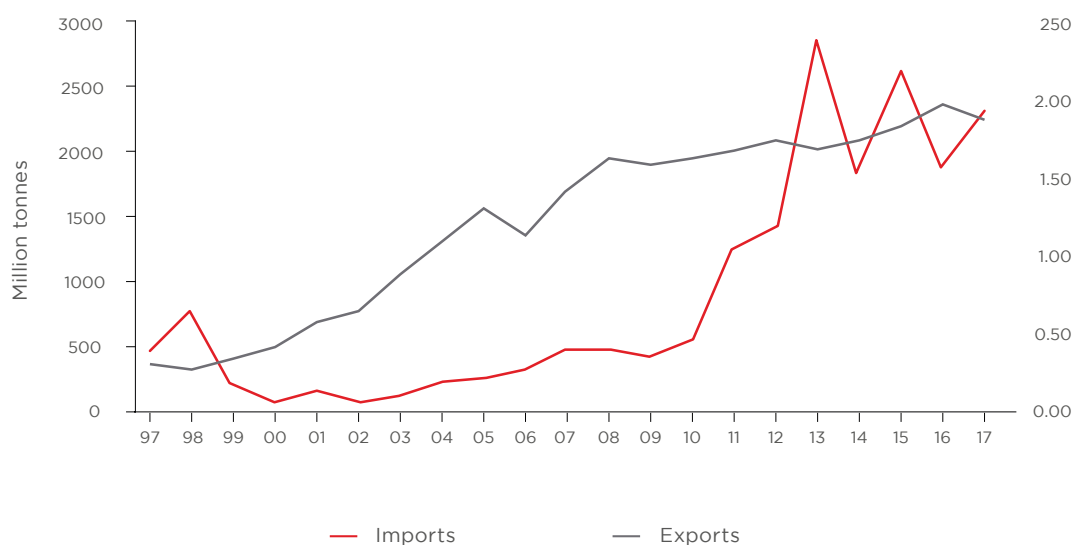
2.4.5 POULTRY

At the present, Brazilian poultry meat reaches more than 150 markets, with about 2 billion tons shipped annually, in addition to the technological advances that promote significant productive advances for the sector.

Like the pork segment, the poultry industry also hit export records in 2016 with strong sales rhythm to several markets in Asia, Europe and the Americas, especially China.

Graph 23

BRAZILIAN EXPORTS OF POULTRY, MILLION TONS BETWEEN 1997 AND 2017



Source: Comex Stat⁸.

In recent years, in terms of volume, Saudi Arabia, Japan and China have been the largest buyers of Brazilian chicken meat and in 2017 accounted for about 37% of Brazilian exports, equivalent to 838 million tons, as shown in Table 10.

8 Available at: <http://comexstat.mdic.gov.br/pt/geral>

Table 10

VOLUME OF PORK EXPORTED BY BRAZIL, IN MILLION TONS, BETWEEN 2015 AND 2017

REGION	2015		2016		2017	
	VOLUME	%	VOLUME	%	VOLUME	%
SAUDI ARABIA	439	19,89	441	18,51	373	16,39
JAPAN	227	10,30	236	9,92	239	10,47
CHINA	181	8,19	303	12,73	226	9,92
SOUTH AFRICA	139	6,29	141	5,91	184	8,08
UNITED ARAB EMIRATES	173	7,85	182	7,62	168	7,38
HONG KONG	138	6,26	147	6,18	148	6,49
EGYPT	45	2,06	62	2,60	102	4,49
KUWEIT	71	3,21	72	3,02	71	3,13
RUSSIA	55	2,49	55	2,31	58	2,53%
IRAQ	24	1,07	36	1,49	55	2,40
REST OF THE WORLD	714	32,40	707	29,70	654	28,70
TOTAL	2205	100	2381	100	2278	100

Source: Comex Stat⁹.

In 2017, the volume of the sector closed with a decrease compared to 2016. Despite the decrease in volume, the export revenue of the sector accumulated a high of 5.7%. The reduction in exported volume contributed to the internal availability of the meat during 2017 and with that the domestic prices of the cutting poultry accumulated monthly drops almost consecutive.

Already in 2018 the scenario has been different. Brazilian poultry exports fell 8.5% in the January- May period, with the world's largest exporter being hit by commercial embargoes imposed by the European Union following a corruption investigation into the sector. The volume of poultry exported in the period was 1.6 million tons, compared to 1.75 million in the same period of 2017. Shipments to the European Union reduced by more than 40%.

9 Disponível em: <http://comexstat.mdic.gov.br/pt/geral>

Brazil sold 92.5 thousand tons to the EU in the period, below the 51.8 thousand tons in 2017. The European Union suspended imports of Brazilian proteins, mainly poultry, in April in a decision that affected 20 units in the country. Brussels related the prohibition to the "deficiencies detected in the Brazilian official control system" after an investigation by local companies and health authorities found that they conspired to cheat quality and safety checks. Just in May, there was a drop of 4.7% in the volume of poultry shipped outside Brazil to 333.2 thousand tons.

The Brazilian export products in this segment are made up of cuts and offal, frozen roosters and chickens, and frozen, uncut pieces of poultry, which together have been responsible for almost 100% of the shipments of recent years, as shown in Table 11.

Table 11
BRAZILIAN PORK EXPORTED, IN MILLIONS OF TONS, FOR THE YEARS 2017 AND 2018

DESCRIPTION	2017		2018*	
	VOLUME	%	VOLUME	%
POULTRY CUTS AND OFFAL, FROZEN, FROZEN	1.535,3	67,39	1.231,3	71,68
MEAT OF CHICKENS, NOT CUT INTO PIECES, FREEZE	742,4	32,58	486,4	28,31
CHUNKS AND CUTS OF POULTRY, FRESH/CHILLED	0,7	0,03	0,1	0,00
TOTAL	2.278,4	100	1.717,8	100

*Valores de Janeiro a Julho.
 Fonte: Comex Stat¹⁰.



3. BARRIERS TO THE COMMERCIALIZATION OF THE MEAT IN BRAZIL

In 1947, the General Agreement on Tariffs and Trade (GATT) was created to promote trade liberalization, with the establishment of international economic law norms aimed at regulating international trade. The GATT over the years did not focus on agricultural products, so there was a gap to the big economies, such as the European, could give different treatment to the agricultural sector related to the industrial sector, leading to the Common Agricultural Policy, the CAP. This policy isolated the European producers from external competition, creating mechanisms of import restrictions, subsidies to imports, which differed from those established by the GATT.

Agriculture only effectively entered the GATT agenda with the Uruguay Round, through the action of a group of developed and developing countries, among them Brazil, that aimed at the liberalization of agricultural trade. The Uruguay Round led to the creation of the World Trade Organization (WTO) and agriculture managed to find institutional space in the Agreement on Agriculture, which initiated a process of change in international agricultural trade. For the purpose of expanding its exports, Brazil, with the support of public and private initiatives, began a process of changes and adaptations to meet the demands of the foreign market. In 1992, it implemented the National Program for the Eradication of Foot-and-Mouth Disease (PNEFA). Since then, institutions have been created to expand the free zones of foot-and-mouth disease. In 1998, it was recognized the first free zone of foot-and-mouth disease with vaccination was established, consisting of the states of Rio Grande do Sul and Santa Catarina. In 2001, there was an expansion of the free foot-and-mouth disease zone with vaccination, with recognition of the states of Bahia, Espírito Santo, Mato Grosso do Sul, Rio de Janeiro, Sergipe, Tocantins and part of Goiás, Mato Grosso, Minas Gerais and São Paulo. In 2003 the recognition was extended to the State of Rondônia. However, in 2005, the free foot-and-mouth disease free zone was suspended in most of the Brazilian states, this situation was only regularized in 2007. In order to give more credibility to the system and promote transparency in the origin of the product, it was created the Bovine and Bubaline Production Chain Traceability Service (SISBOV).

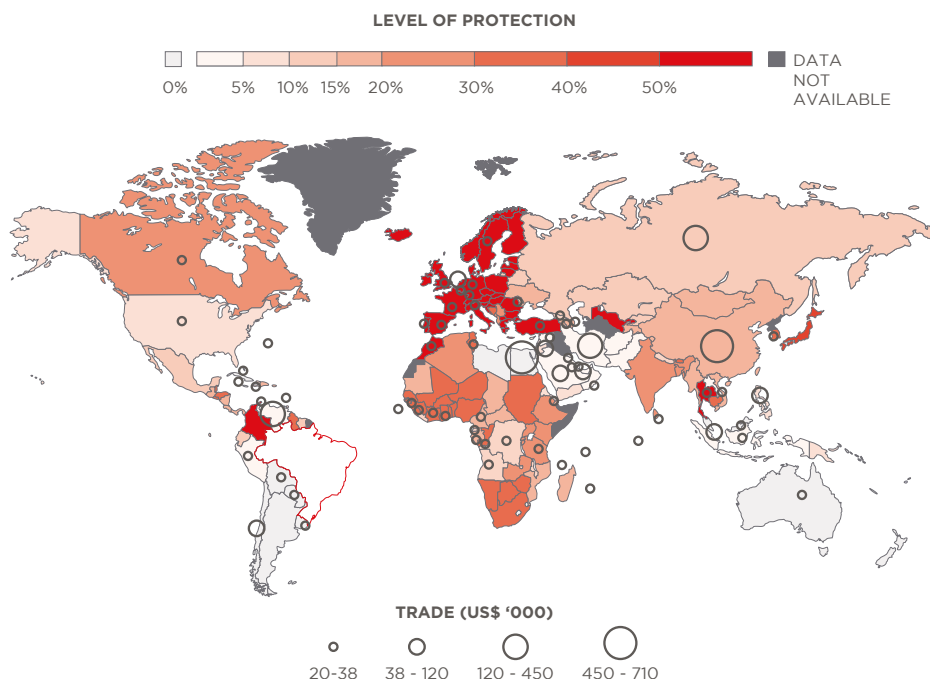
Despite all the Brazilian efforts, in a survey conducted by the National Confederation of Industry (CNI), it is possible to identify at least 20 trade barriers against Brazilian products abroad. The Brazilian slaughterhouse sector suffers from several protectionist measures from foreign markets.

Although Brazil exports animal protein to 160 open markets and stands out for its sanitary status, in the first semester of 2018, embargoes on poultry and Brazilian pork dropped sales of these products abroad. Figures 6, 7 and 8 below present the barriers imposed on Brazilian meats.

Europe as a whole applies tariff barriers above 50% to Brazilian beef, presenting the most restrictive continent.

Figure 06

PROTECTION LEVELS APPLIED TO BRAZILIAN BEEF IN THE INTERNATIONAL MARKET

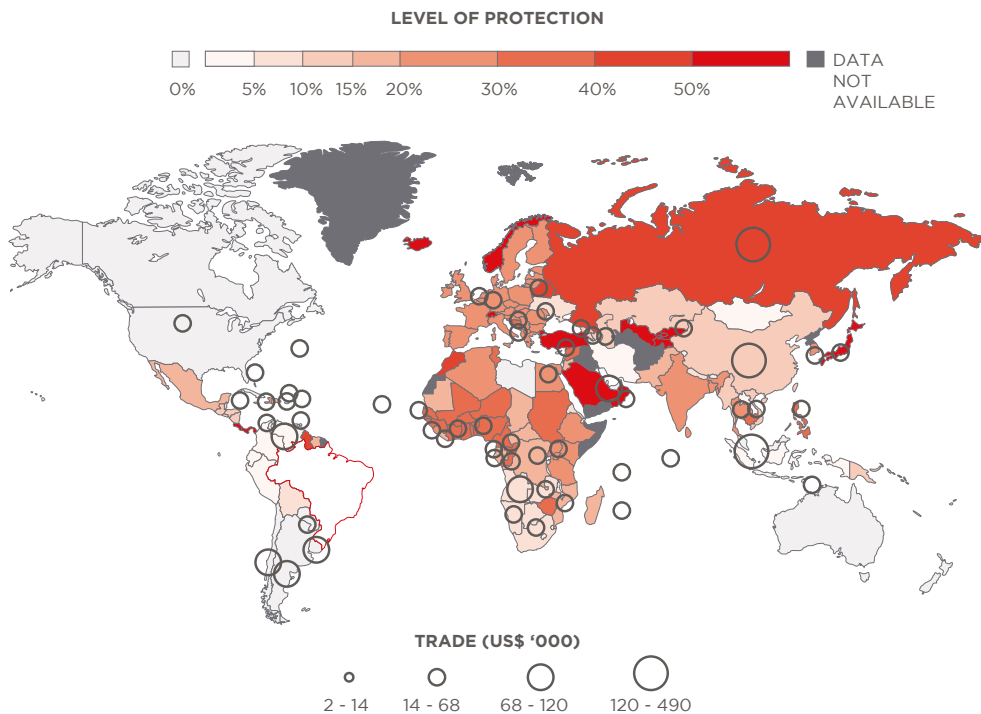


Fonte: Source: Adapted from Macmap (2018)¹.

¹ Available at: <http://www.macmap.org/QuickSearch/FindTariff/FindTariff.aspx>

Russia, one of the main importers of Brazilian pork, imposes high levels of protection, including under the allegation that it has found a substance that is not allowed in imported products. Some countries in Europe, Africa and North America also have high rates. Almost the entire Asian continent, European and African applies commercial barriers to Brazilian pork.

Figure 07
PROTECTION LEVELS APPLIED TO BRAZILIAN PORK IN THE INTERNATIONAL MARKET



Source: Adapted from Macmap (2018)²

The Brazilian poultry meat suffers from the tariff barriers of several places in the world. With the exception of Oceania and South America, the poultry sector has a large number of Brazilian continents.

In addition to the tariff barriers, Brazil can currently export up to 21.6 thousand tons of raw poultry without taxes to the European Union

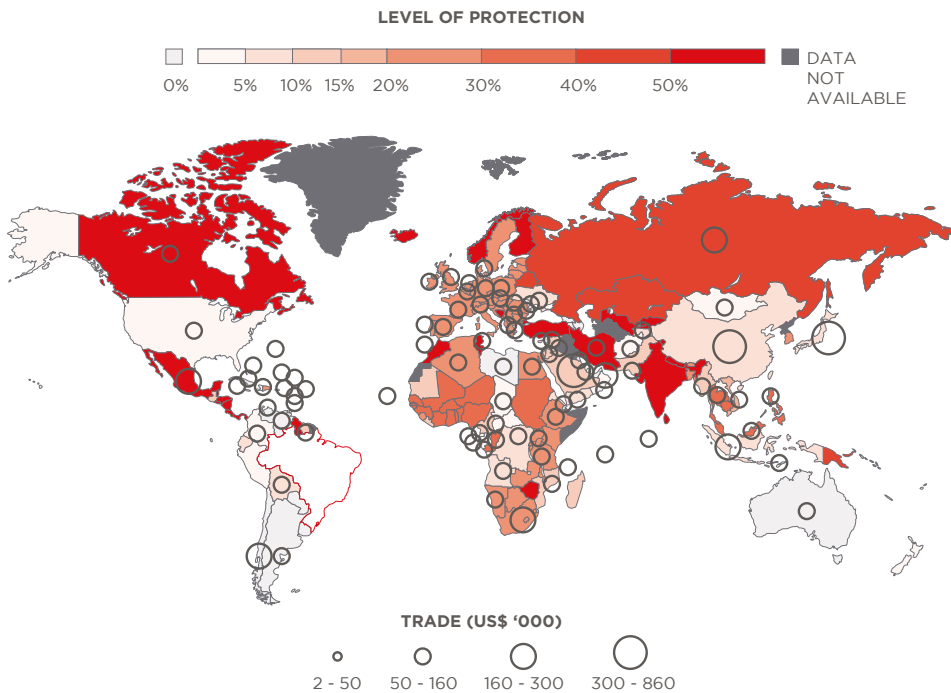
² Available at: <http://www.macmap.org/QuickSearch/FindTariff/FindTariff.aspx>

In addition to this quota, the country can also export 170,800 tons of poultry in natura with an addition of 2% of salt. On these products, 15.4% of taxes are charged and there is a requirement that they do not present 2,600 types of salmonella. The requirement may fall for just two types of bacteria in a case is paid an extra fee of 1,024 per ton.

In the case of China, the Asian country claimed that the entry of poultry meat was hampering local production, and in the first half of 2018 began to apply a surcharge. India has adopted similar measures to China. With the economic growth of the country, the Indians began to consume more animal protein. Thus, there is great potential for poultry meat. The rate applied to the product coming from Brazil is higher than that of other nations, reducing competitiveness.

Figure 08

PROTECTION LEVELS APPLIED TO BRAZILIAN POULTRY IN THE INTERNATIONAL MARKET



Source: Adapt from Macmap (2018)³

³ Available at: <http://www.macmap.org/QuickSearch/FindTariff/FindTariff.aspx>

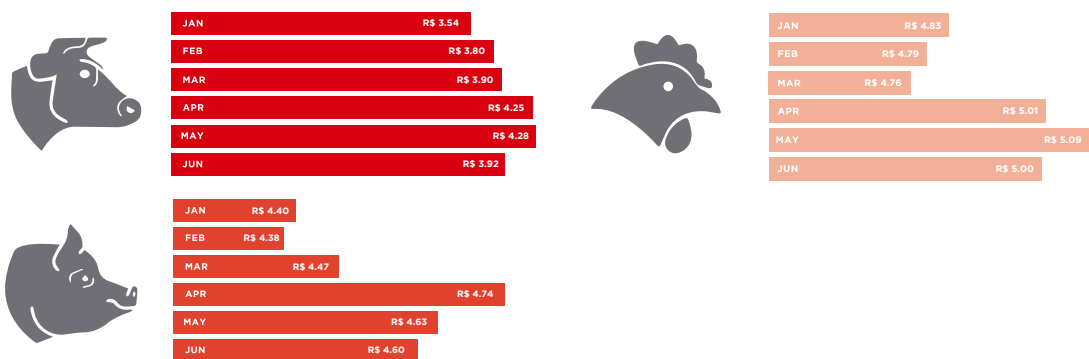
In addition to facing strong export barriers and all negative marketing coming from Operation Weak Meat, the industry also faces internal difficulties. Changes in the external market, such as demand reduction, directly impact the domestic market with increased supply pulling down the final price and thus the price paid to the producer.

In the case of cattle, the slaughterhouses only work with the dead weight, which usually corresponds to between 50% and 55% of the live weight of the animal, but only after slaughtering is certain. The cattle then go to slaughter and then go to the production line, where the parts that are not counted in the weighing are removed. After this stage, called cleansing, are the carcasses, formed only by bones and flesh. In the balance room, the cattle farmer is able to follow the end of the process of slaughtering and weighing the balance. Only then can he know, in practice, how much he will receive for the animals that have just died.

The price paid to the farmer during 2018 in Rio Grande do Sul oscillated over the months and ended June negative for all segments of the meat complex, as shown in Graph 23. In addition, climatic factors such as the absence of rainfall contributed to the increase of the costs of livestock farmers.

Graph 24

KILOGRAM OF LIVE BOVINE AND PORK PAID AND KILOGRAM OF SLAUGHTERED CHICKEN PAID TO THE PRODUCER IN RIO GRANDE DO SUL IN 2018



Source: Cepea⁴

4 Available at: <https://www.cepea.esalq.usp.br>.



EFFECTS OF THE OPERATION WEAK MEAT

The year 2017, which began with a reduction in consumption due to the economic recession, won episodes worthy of threatening the Brazilian leadership in the animal protein segment. Still recovering from the problems caused by Operation Weak Meat and the award-winning JBS delusion, the industry wants to clean the house and return to the growth heights that have lifted it to the

On March 17th, 2017, the Operation Trappa was set off by the Federal Police. The Operation Weak Meat complied 309 court orders. The move has shaken the entire industry, although investigators are not sure how much fraud is involved, how widespread the sale of uneven foodstuffs is, or where they have been marketed, but say they have discovered a system that is at risk of harm to health. The adulterated plan scheme involved public officials responsible for inspection and this operation undermined the credibility of the sector on the international scene.

By the end of March, when the Federal Police made public investigations of irregularities in slaughterhouse inspection, poultry meat shipments were up 12% and pork almost 40% compared to the first half of 2016. After the initial shock, with temporary embargoes, Brazilian industries were able to resume the main import markets, such as Asia and Europe. Only five countries, with little expression, have maintained the suspensions: Albania, Saint Lucia, Zimbabwe, Benin and Congo.

ATTACHMENT 1

PRESENTATION AND DESCRIPTION OF PRODUCTS ANALYZED ACCORDING TO ITS SOUTHERN COMMON NOMEXATURE - NCM

CÓDIGO NCM	DESCRIÇÃO
02011000	Carcases and half-carcases of bovine animals, fresh or chilled
02012010	Non-deboned bovine fresh forequarters, fresh / chilled
02012020	Boneless, boneless bovine hindquarters, fresh / refrigerated
02012090	Other cuts of bone in, fresh or chilled
02013000	Boneless meat of bovine animals, fresh or chilled
02021000	Carcasses and half-carcasses of bovine animals, frozen
02022010	Forequarters, boneless, of bovine animals, frozen
02022020	Boneless, boneless bovine hindquarters
02022090	Other cuts, boneless, of bovine animals, frozen
02023000	Bovine meat, frozen, frozen
02031100	Carcases and half-carcases of swine, fresh or chilled
02031200	Carcasas e meias-carcasas de suíno, frescas ou refrigeradas
02031900	Carcases and half-carcases of swine, fresh or chilled
02032100	Carcases and half-carcases of swine, frozen
02032200	Hams, shoulders and cuts thereof, of bone, frozen
02032900	Other meat of swine, frozen
02061000	Edible offal of bovine animals, fresh or chilled
02062100	Tongue of bovine, frozen
02062200	Bovine livers, frozen
02062910	Beef steaks, frozen
02062990	Other edible offal of bovine animals, frozen
02063000	Edible offal of swine, fresh or chilled
02064100	Frozen pork livers

CÓDIGO NCM	DESCRIÇÃO
02064900	Other edible offal of swine, frozen
02071100	Meat of chickens, not cut into pieces, fresh/ chilled
02071200	Meat of chickens, not cut into pieces, freeze
02071300	Chunks and cuts of poultry, fresh/ chilled
02071400	Poultry cuts and offal, frozen, frozen
02101100	Legs / shovels, pork, bone-in, salted, etc.
02101200	Bellies and breasts, interspersed, pork, salted, etc.
02101900	Other meat of swine, salted or in brine, dried, etc.
02102000	Meat of bovine, salted / in brine / dried / smoked

ATTACHMENT 2

LIST OF ABBREVIATIONS

ACRÔNIMO	DESCRIÇÃO
CCPR	Cooperative Central of Rural Producers of Minas Gerais
CEPEA	Center for Advanced Studies in Applied Economics
CNA	Confederation of Agriculture and Livestock of Brazil
EMBRAPA	Brazilian Agricultural Research Corporation
UE	European Union
GATT	General Agreement on Tariffs and Trade
GDP	Gross Production Value
GVP	Gross Value of Production
IBGE	Brazilian Institute of Geography and Statistics
MAPA	Ministry of Agriculture, Livestock and Food Supply
MT	Millions of tons
NCM	Southern Common Nomenclature
PIA	Annual Industrial Survey Company

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