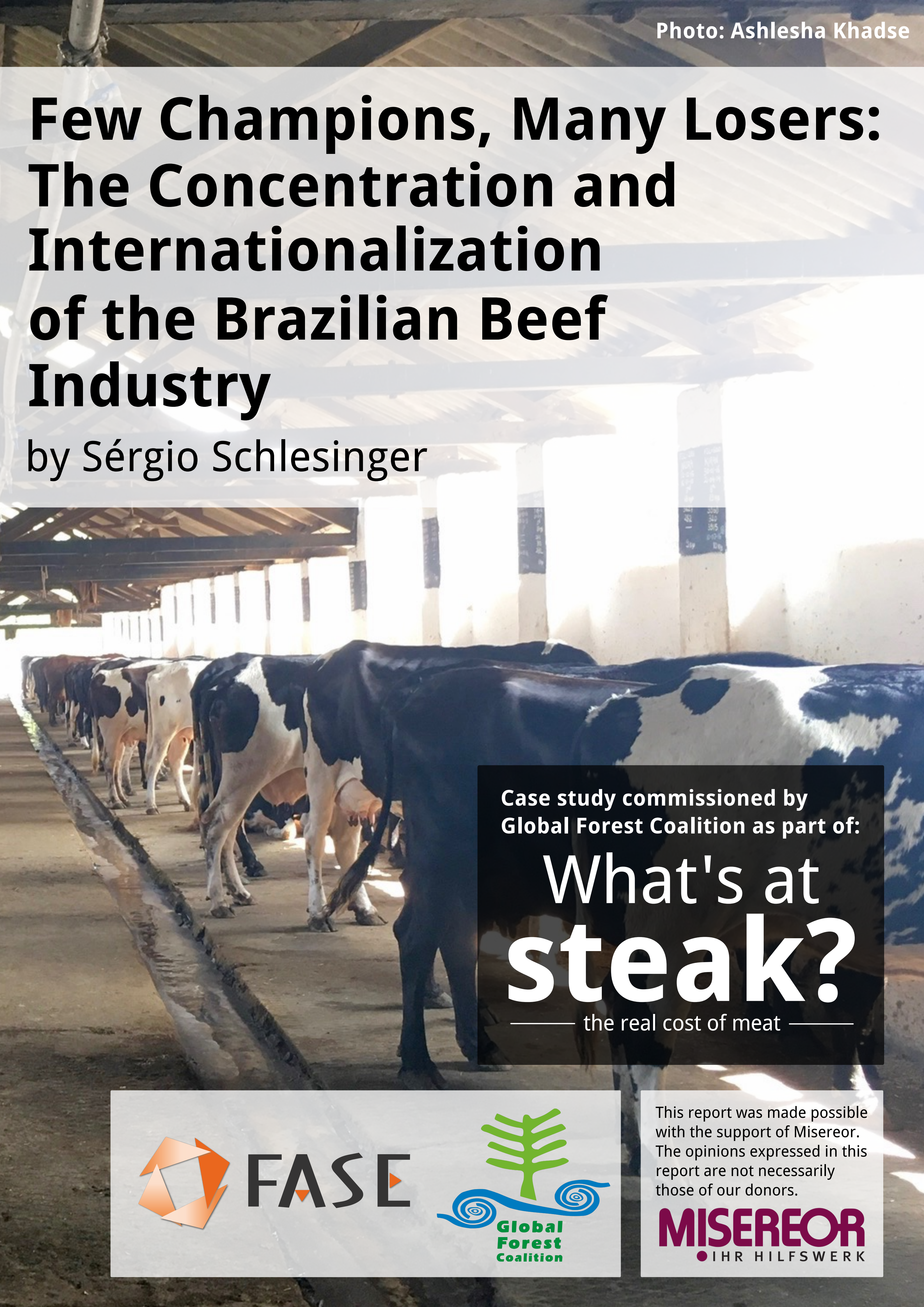

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Few Champions, Many Losers: The Concentration and Internationalization of the Brazilian Beef Industry

by Sérgio Schlesinger

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Few Champions, Many Losers: The Concentration and Internationalization of the Brazilian Beef Industry

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1. Introduction

The Brazilian beef production chain is very heterogeneous. On one end we find the stockbreeders, from the poorest to the wealthiest. On the other end, we find the so-called beef industry, increasingly sophisticated and globalized, responsible for the slaughter and meat processing.

This production chain is among the largest of the world. Brazil is the second largest beef producer and exporter, and the second largest poultry producer and the largest exporter in the world. Regarding pork, it also stands out occupying the fifth place in production and the fourth place in exports. Its internal market is the main destination of the total produced: almost 80% of beef and pork and 70% of poultry. However, their export represent a significant percentage of the total Brazilian exports, as well as a big portion of the total volume traded at the global market.

During recent years, the internationalization of Brazilian industries' activities has gained importance. Some of them acquired a series of foreign companies, located in different countries, with a strong financial support from the federal government. This support was given within the framework of the Productive Development Policy (PDP) that chose the beef sector as a priority to consolidate and internationalize national companies, having the National Bank for Economic and Social Development (*Banco Nacional de Desenvolvimento Econômico e Social*, abbreviated: BNDES) as sponsor, direct investor and agent for mergers and acquisitions. The PDP established among its sectorial goals: '(i) To consolidate Brazil as the main global exporter of animal protein; (ii) To turn the meat mix into the main export sector of Brazilian agro-industry'.

Until recently, the so-called 'national champions' policy prevailed for some years. Resources have been used, above all, in mergers and acquisitions of other companies, not only in Brazil but also abroad. Big Brazilian conglomerates are among the beneficiaries of this policy, including JBS-Friboi, Marfrig and Brasil Foods (BRF).

The objectives of concentrating the sector and internationalizing the companies have been achieved. Regarding beef, for example, eleven big exporters accounted for 70% of total exports in 2007. In 2015, only three companies (JBS, Marfrig and Minerva) were responsible for 80% of the exports. As for internationalization, JBS stands out for its leadership. Nowadays, 90% of its income is generated in other nations. Undoubtedly, there are considerable benefits for those who control these companies. Yet the criteria applied to determine the allocation of large amounts of public resources to the sector and the selection of a small number of big companies as beneficiaries, are still unknown.

It is important to assess the impact that the concentration of slaughterhouses has on small stockbreeders, consumers and the environment. It is also necessary to question the criteria adopted when using resources from the BNDES, in order to ensure that they are meant to effectively stimulate a sustainable economic and social development.

2. The champions

The policy of 'promoting big international companies' competitiveness' was started by the BNDES in 2007 and it prevailed until 2013. Not only did it involve big slaughterhouses, but it also included different sectors such as petrochemical, cellulose, the iron and steel industry, orange juice, the concrete industry, engineering and telecommunications, among others. The bank's investments during that period are estimated at about R$ 18 billion, in only five companies (JBS, Marfrig, Lácteos Brasil, Oi and Fibria), most of which operate in low-innovation level sectors (Souza, 2012). Apart from promoting the growth of national companies that work at global level, the resources resulting from national companies' mergers were used to save big firms going through financial crises while contributing to strengthen buying companies.

For that purpose, they received a great amount of money, not only through loans at a subsidized interest rate but also by the purchase of debentures convertible into shares and the acquisition of part of their shares by BNDES *Participações* (BNDESpar). Between 2005 and 2014, JBS, Marfrig and Bertin slaughterhouses received R$ 11 billion from the bank's shareholding. BNDESpar is an investment fund owned by the BNDES, which has control over every investment in terms of shareholding. The pension funds of public companies also have an important participation in such companies' capitalization.

Until 2002, support for internationalization was restricted to capitalization through shareholding. That same year, a change in the bank's by-laws authorized the BNDES to finance purchases abroad (Siqueira, 2016). Regarding the slaughterhouses, it was also about consolidating and expanding Brazilian leadership as a leading exporter of animal protein. The bank focused its support on a limited number of companies, not necessarily the biggest ones.

The BNDES never made public the criteria used to choose one or another company that would benefit from this policy. The lack of transparency is still the target of criticism, as well as the billions of Brazilian reals invested in companies that could have obtained resources from the private financial market while the rest of them had to face the negative consequences of the concentration process.

However, the lack of transparency is far from being the only criticism received from various analysts of this policy, whose main challenge was to conglomerate the economy. Some of them, especially in the case of slaughterhouses, indicate the increasing dependence on commodities exports due to the non-existence of a national development project; the privilege granted to a few companies that operate at low levels of innovation and added value; the support for mergers and acquisitions of little productiveness from a development perspective, considering in particular social benefits and scientific and technological innovation; the mistrust about the government's capacity to keep companies capitalized with public funds in national hands; the finance of projects with a high rate of individual return in sectors where companies are competitive and could therefore obtain financial resources at the private market without any help from the BNDES; the lack of concern about negative environmental and social impacts, and, in particular, the use of resources to make positions available abroad (Souza, 2012); as well as the state being controlled by big private groups, fostering political clientelism (García, 2011).

As a consequence, the implementation of these policies in the slaughtering sector has the most diverse results. The Minerva group, one of the biggest slaughterhouses of the country today, has not been considered even though it requested financing from the bank. Bertin, also one of the biggest so far, ended up being absorbed by JBS after receiving R$ 3.3 billion from the BNDES, in a merger process also supported by the bank. On the contrary, Marfrig group received R$ 3.2 billion from the BNDES, which is nowadays its second main shareholder, with almost 20% of the total capital. The bank also lead the merger of Sadia and Perdigão, which resulted in the creation of Brasil Foods, one of the greatest giants of meat production in the world.

In 2008, Independencia slaughterhouse which, until that time, was at the fourth position of the national ranking, received R$ 250 million in credits from the BNDES for the purchase of 21.8% of its capital. However, such an amount was not enough for the company to face the financial crisis it was going through. Three months after receiving the funds, the firm filed a request for receivership. According to its former president, the crisis arose after the extraordinary growth of JBS, where the public bank stands out as the main contributor with R$ 10.63 billion expenditures, according to the Court of Audits' analysis carried out in 2015 (TCU, 2015). 'In the policy of national champions, I am the national loser', said the former president at the parliamentary committee of inquiry, created by the House of Representatives to investigate the BNDES's operations.[1]

In fact, JBS was the main beneficiary of the support provided by the BNDES to the sector, and it became the most internationalized company of the country, with 60% of its jobs being created out of the country in 2011. This support is much more than polemics, this support brought an investigation into the most controversial issue regarding the Bank's policy. Because of its operations with the BNDES, the corporation, as well as the bank itself, are being investigated at the judicial level by the TCU and the House of Representatives. The lack of transparency of the BNDES made the TCU resort to the Supreme Court in order to access information about the operations.

The case of JBS leads us to national politics too, since the company turned into the major individual sponsor of political parties and their election campaigns. The date of the initial release of funds from the public bank coincides with the increase in donations from JBS to politicians. Since 2005, when the release of resources began, R$ 463.4 million were transferred from JBS to political parties during elections in 2006, 2008, 2010 and 2014.[2] The company is being investigated under the 'Lava Jato' operation, which is investigating a huge public money embezzlement scheme which involves Petrobras, national politicians and large construction companies.

1http://www1.folha.uol.com.br/poder/2015/09/1685965-sou-o-perdedor-nacional-diz-dono-de-frigorifico-que-faliu-a-cpi-do-bndes.shtml
2http://noticias.uol.com.br/politica/ultimas-noticias/2015/01/28/doacoes-da-jbs-a-politicos-equivalem-a-185-de-emprestimos-com-bndes.htm

Below is a brief description of Marfrig and BRF's business development during the analysed period, as well as a more detailed consideration of JBS, the slaughterhouse that received by far the biggest economic support from the BNDES to selected companies.

Marfrig

Founded in 1986, Marfrig Global Foods greatly expanded since 2000. In 2007, when the BNDES started its new policy, the company went public in order to facilitate raising funds for its expansion plans. During that period, the BNDES invested R$ 3.2 billion in the company and the BNDESpar percentage of shares reached 20% of its capital.

Nowadays, Marfrig is the third largest producer of beef in the world and the second in Brazil. It is also the biggest private beef processing company in Uruguay and the main importer of beef in Chile. With twenty six plants and six distribution centres in Brazil, Argentina, Uruguay and Chile, it can process 5 million heads of cattle, 2.1 million sheep and 1,204 tons of processed food per year[3].

Its plans of internationalization and expansion in Brazil included the purchase of Moy Park in 2008, one of the most important manufacturers of processed food in Europe, with poultry processing plants in England and Northern Ireland. The Brazilian Seara and the North American Keystone were respectively bought from Cargill in 2008 and 2009. However, the high level of indebtedness lead to Seara's sale, in 2013, and Moy Park in 2015, both to JBS. That same year, Marfrig sold most part of its business units in Argentina to the Chinese group Black Bamboo.

Keystone and Marfrig Beef International, two international companies belonging to the group, were responsible for 59% of Marfrig's total income in 2015. Considering also the exports from Brazil (20%), the sales at international markets accounted for 79% of the total (Marfrig, 2016).

Brasil Foods (BRF)

Brasil Foods (BRF) was born in 2009 from the merger of Sadia and Perdigão, the two major producers of the animal protein sector in Brazil. This merger, approved in 2011 by the *Conselho Administrativo de Defesa Econômica* (CADE), gave birth to one of the biggest companies in the food sector.

The concern showed by BNDES about the denationalization of the beef industry has its grounds on the case of BRF. Traditionally, Sadia and Perdigão were the biggest companies of the sector. But big multinationals, like French Le Doux and North American Cargill, were increasing their presence in the market through the acquisition of Brazilian companies. Since 1999 Sadia and Perdigão were trying to merge. Sadia failed in the attempt to incorporate Perdigão through an acquisition offer made in 2002.

Nonetheless, Sadia was deeply affected during the world financial crisis of 2008, after a number of failed derivatives transactions in the foreign exchange markets. As a consequence, the company was forced to merge with Perdigão, with the BNDES

3 http://www.marfrig.com.br/pt/marfrig-global-foods/unidades-de-negocios/marfrig-beef

support in the form of shareholding, loans and pension funds. During the same year, the BNDES granted R$ 342.7 million to Perdigão and R$ 329.8 million to Sadia in credits, through direct operations.

The pension funds from public companies—that already had shareholding in Perdigão—made new contributions. Even though they had already gained stocks control, Previ (Banco do Brasil), Sistel (Telebras), Funcef (Caixa Económica Federal), Petros (Petrobras) and Valia (Vale, which, in spite of being denationalized, was still under the political control of the federal government), also supported the merger. By the end of 2009, they controlled 31.5% of the company.

Nowadays, BRF is the world's biggest exporter of poultry, and one of the ten largest food companies as regards its market value, responsible for 9% of total exports of animal protein in the world. It has 35 industrial facilities and works with 13,000 integrated producers.

According to the data provided by the company's annual report, its net revenues from external markets in 2015 were already slightly higher than its internal net revenues (BRF, 2016). BRF has 16 production facilities abroad: nine in Argentina, four in Thailand, one in the United Kingdom, one in The Netherlands and one in the United Arab Emirates. It also has 40 distribution centres in different countries.[4]

During 2014 and 2015, the internationalization process was intensified with the creation of joint ventures, the opening of new commercial facilities and the acquisition of factories, brands and distributorships. There were, in total, eleven big movements of joint ventures and acquisitions: five in the Middle East (United Arab Emirates, Oman, Kuwait and Qatar), two in Asia (Singapore and Thailand), two in Europe (United Kingdom) and two in Latin America (Argentina) (BRF, 2016). The company announced its plans to prioritize new acquisitions in emerging countries.

JBS

JBS was created in 1953 by the father of the current directors and started operating in a small plant in Goiás, with a slaughter capacity of five head of cattle per day. Until 1969, he kept renting and buying new plants in the region. The same year, he founded Friboi slaughterhouse, today called JBS-Friboi. Between 1970 and 2001 the company went through its first big expansion process in Brazil, buying factories and investing in the existing ones. In 2005, the company started its international expansion through the acquisition of 100% of Swift-Armour's capital (the main beef producer and exporter in Argentina). At that point and for the first time, JBS received support from the BNDES to promote its internationalization. By 2006, it was operating 21 beef plants in Brazil and five in Argentina, reaching a slaughter capacity of 19,900 head of cattle per day.

JBS was the first company of the sector to go public in Brazil, offering its shares in 2007. On that occasion, the BNDESpar bought JBS shares for the first time. The amount was R$ 1.1 billion. That same year, the company bought plants in Brazil, Italy, Australia and the USA, starting an important and still ongoing growth process. In 2009, it consolidated as the most important company in the animal protein sector of the world, after acquiring Swift Foods and Pilgrim's Pride, and announcing the

4 https://www.brf-global.com/brasil/sobre-brf/quem-somos-nossa-historia

incorporation of Bertin, its former most direct competitor in Brazil (Schlesinger, 2009).

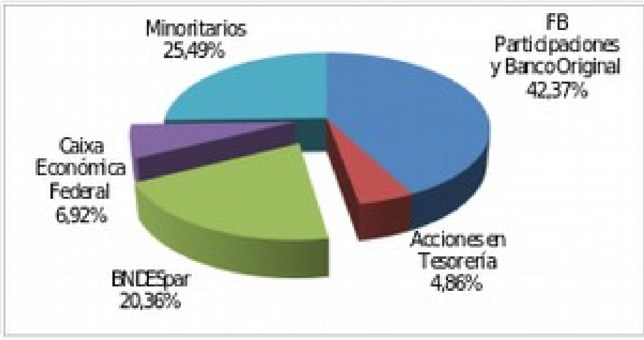
Between 2005 and 2014, the BNDES granted JBS a credit of R$ 2.52 billion and acquired R$ 8.11 billion in shareholding, thus investing a total of $10.63 billion. 'This support has turned the Brazilian state into the major individual shareholder of the company, with 34.66% of the total shares until 2014 (although it is controlled by a private group)' (TCU, 2015). According to JBS, in May 2016 this participation accounted for 20.36%.

Thanks to the boost received from the BNDES in previous years, the company's expansion abroad was still ongoing in 2015. It acquired the Australian group Primo, the Mexican Tyson, Moy Park (belonging to Marfrig and present in various European countries), and the North American Cargill Meat, which means a total investment of R$ 21.6 billion (JBS, 2016). As a result, at the end of 2015 JBS had only 55% of its direct jobs in Brazilian lands. The rest were distributed among the USA, Europe, Australia, Mexico, Argentina, Canada, Chile, China, Paraguay, Uruguay and Vietnam. Nowadays, Brazil accounts for just 10% of the company's total sales, whose net revenues in 2015 were R$ 162.9 billion.[5]

JBS is today the largest producer and exporter of animal protein in the world, the most important non-financial private company of Brazil and the second largest food company in the world, only behind Nestlé Switzerland. Until 2002, it did not even appear among the 400 largest companies in activity in the country. It processes poultry, bovine, porcine and ovine meat and it also operates in the industrialized food sector. It owns more than 300 production units in the whole world, with a daily slaughter capacity of 80,000 head of cattle, 14 million poultry, 110,000 pork and 100,000 pieces of leather.[6] Additionally, the company commercializes leather products, cleaning and hygiene products, collagen, metallic packaging and biodiesel, among others. Eldorado Celulose is another company belonging to the same holding as JBS (J&F). It still has a small share in Petros and Funcef pension funds and is being investigated under the 'Lava-Jato' Operation. The Banco Original, which started operating in 2011, is also part of the J&F Group.

5http://www.valor.com.br/agro/4558625/jbs-transfere-ativos-para-empresa-na-irlanda-que-abrira-capital-em-ny
6http://jbss.infoinvest.com.br/static/ptb/perfil-corporativo.asp?idioma=ptb

JBS Shareholder Structure (May 2016)



Source: JBS

Minority Stockholders 25.49%
FB Participações and Banco Original 42.37%
Treasury shares 4.86%
BNDESpar 20.36%
Caixa Econômica Federal 6.92%

Buying companies in foreign countries is a way to open the doors of strategic markets that, due to the frequent outbreaks of foot-and-mouth and other diseases, impose sanitary barriers on Brazilian exports. With business units like the ones in the USA and Australia, JBS gains access to 50% of the world market that is closed to Brazil. From these new units, the group can reach buyers in the USA, Canada, China, South Korea and Japan, among other countries. It can also export from countries where there are no sanitary barriers like those in Brazil. This strategy is also applicable to trade barriers. Once they are established in other countries, the slaughterhouses not only can access the internal market of the country where they settle, but they can also take advantage of the different commercial agreements the government might have signed with other countries.

Bye, bye, Brazil

A usual criticism to the c*hampions* policy has to do with the total lack of warranties that the public funds transferred to the slaughterhouses with the purpose of buying companies abroad will someday return to Brazil. This concern was confirmed when JBS announced, in May 2016, the decision of relocating to Ireland almost 80% of its business, in terms of revenues. For that purpose, it will create JBS Foods International, a company that will be listed on New York's stock exchange. Ireland is considered a tax haven so many multinationals like Google and Apple moved their headquarters there, resorting to the so-called tax inversion.

It is to be expected that the business in the country will be limited to cattle and other less important products, such as leather and biodiesel, today in the hands of JBS Brazil, and that the company will be under control of the international corporation that will have its headquarters in Ireland. According to Wesley Batista, JBS President, the main advantage expected from these changes is that they will have better conditions to access the international financial market as well as higher stability to stop the risky use of derivatives so as to be safe from fluctuations of the US Dollar against the Real.[7]

7http://ijf.org.br/?p=1518

Therefore, once the operation is confirmed, the result will be exactly the opposite of what the national *champions* policy had proposed: JBS will have turned into a great foreign multinational corporation, with a subsidiary in Brazil. This example reveals how unstable a company's nationality is.

3. Consequences of concentration

The governmental initiative of the *champions* policy is, undoubtedly, a great success for the ones behind it. But it also represents a defeat for many of the excluded slaughterhouses. In only 2008 and 2009, while JBS and Marfrig went through a vigorous growth and BRF was created, seventeen other slaughterhouses went bankrupt.[8]

The initial boost from the government promotes today the expansion of big companies, deepening the market concentration at both national and international levels. Consequently, the large slaughterhouses continue to increase their control over the whole meat production chain in the domestic and international spheres.

During the application period of the so called 'national champions policy' by the BNDES, the concentration of bovine slaughtering in the hands of the three largest abattoirs of Brazil has grown exponentially. The participation of these companies altogether increased from 14.3% in 2006 to 48.3% in 2013. But the most significant increase was visible in JBS which, during the same period, raised from 6.5% to 27.9% of the overall beef production. Regarding chicken, JBS and BRF together already account for 56% of slaughters and 70% of Brazilian exports.

Participation of the three largest companies in bovine slaughter* (head) – Brazil

	JBS	Marfrig	Minerva	Participation
2006	6.5%	5.2%	2.6%	14.3%
2010	21.2%	9.1%	4.9%	35.2%
2013	27.9%	14.6%	5.8%	48.3%

Note: *From data from the Brazilian Institute of Geography and Statistics (IBGE) and Santos, 2015*

* Under the Federal Inspection System (FIS)

4. Social impacts

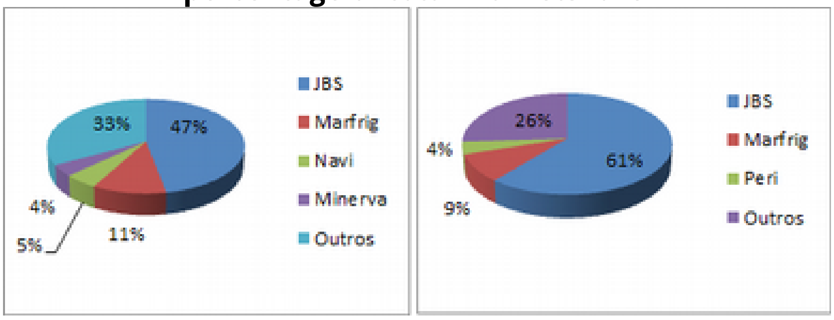
In Mato Grosso do Sul, the state with the fourth biggest herd of the country, the concentration of the beef market keeps on increasing. According to studies made by FAMASUL (Agricultural Federation of Mato Grosso do Sul), between 2012 and 2015 the participation of JBS's slaughterhouses in the total slaughter capacity of the state has grown from 47% to 61%. Assocarnes, an association of slaughterhouses and beef distributors of Mato Grosso do Sul, points out that JBS rented slaughterhouses with

8 http://www.otempo.com.br/capa/pol%C3%ADtica/sou-o-perdedor-nacional-diz-dono-de-frigor%C3%ADfico-que-faliu-%C3%A0-cpi-1.1121204

the only purpose of closing them, to make sure the offer of bovine cattle is available to its own plants.[9]

As a result of this concentration, small cattle breeders with little structure and limited access to the market tend to become captive to big slaughterhouses that pay them lower prices, grabbing their profits. The concentration and possible formation of oligopolies may also imply an increase of consumer prices, at the national and global levels.

Slaughter capacity of plants in Mato Grosso do Sul in 2012 and 2013 as a percentage of total marketshare



JBS
Marfrig
Navi
Minerva
Other

JBS
Marfrig
Peri
Other

Source: *Mascarenhas et al., 2012 and 2015*

Historically, bovine stockbreeding is among the economic activities where working conditions akin to slavery are most blatant in Brazil. In 2014, from a total of 1,590 cases of workers reported in such conditions, 228 belonged to the cattle industry.

According to the NGO Repórter Brasil, 'when slavery is found in cattle ranches, the investigation reports issued by the Ministry of Labour mention very bad working conditions'. Besides, agriculture is one of the activities that generate less working positions: on average, 1 job every 500 hectares of occupied land.

The expansion of grazing areas is the main cause of rural people's eviction and migration to the cities or other regions where there is less pressure over land. Over the centuries, the areas previously occupied by family farmers and traditional communities, such as indigenous people and *quilombolas*, have been replaced by pasture lands for cattle breeding. Thus, the food production is also affected in terms of diversification.

The three largest Brazilian slaughterhouses are also national champions in labour accidents. JBS appears first on the list, followed by BRF and Marfrig. From 2011 to 2014, 4,867 accidents in JBS plants were reported to the Ministry of Social Security. However, the rate of unreported accidents shows that this number relates to just a small sample of the sector. According to data from the Ministry of Labour, between 90% and 95% of the accidents in this sector go unreported.

9 http://www.portaldbo.com.br/Revista-DBO/Destaques/Frigorificos-fechados-crise-ou-ajuste/13526

With regard to the production chain of poultry and pork, the vertical integration scheme stands out: based on a contractual relationship, the agribusiness supplies producers with day-old chicks, chicken feed, medicines and technical support; the producers raise them until they reach the required size and weight, and then send them back to the company. A recent initiative from the Public Ministry of Labour (PML) of Santa Catarina established that most producers (73%) working under contract with Sadia slaughterhouse, were paid below production costs. According to the PML, 'they finance the economic activity of Sadia SA at the expense of their own impoverishment, sickness and indebtedness to financial institutions'. The poor working conditions of slaughterhouses' employees are also striking.

5. Environmental impacts

Bovine stockbreeding has a strong impact over natural resources due to its territorial dimensions. Besides, it is important to emphasize that this activity is responsible for a high percentage of total greenhouse gas emissions in Brazil. The emissions from the enteric fermentation during the cattle's digestive process represent the highest percentage of total emissions from the stockbreeding sector.

Brazil's cattle population is currently estimated at 214 million head, so outnumbering the country's human population (206 million people). The grazing lands, with the addition of areas already degraded and abandoned due to this activity, exceed today 200 million hectares (almost a quarter of the country's territory).

The recent expansion cycles are the main cause of destruction of the Amazonia and the Cerrado. Although the preservation of the Amazonia has got most of world attention, the figures about the increase of the area dedicated to bovine stockbreeding show that the Cerrado is the most affected biome by the production growth in the last decades.

With reference to the breeding and processing of poultry and pork, it is important to highlight the high amount of residues, from animal remains to its wastes, the high consumption of water and its contamination with liquid effluents, which might compromise the aquatic life in productive regions, and the greenhouse gas emissions.

Due to its gigantic scale, Brazil's poultry industry is increasingly criticized, even by its own consumers, and doubts have arisen about the products' quality. The intensive use of antibiotics and the low concern about the animals' welfare, above all considering the intensive confinement system they are raised in, are frequently brought into question. Regarding public health, the whole world is discussing the development of antibiotic-resistant bacteria (Demattê Filho and Moruzzi, 2014).

6. Conclusions

The investment in Brazilian multinationals' creation and expansion is based on the idea that capital has a homeland, and that it will always be loyal to it. But the announcement that JBS would move to Ireland is just another example that this belief is groundless, and confirms that the eventual return to the country of the public funds invested in the industry, based on the profits obtained abroad, is far from materializing.

Although the nationality of the multinationals, Brazilian or not, is still to be defined, the effects of the power concentration on the slaughterhouses that control the market is a fact since the BNDES intervention. The sector, once highly fragmented, turned into an oligopoly, thus reducing the stockbreeders' alternatives of sales and the choices available to the consumers. All this resulted from mergers, acquisitions and the closure of small abattoirs.

The choice of this sector as a target for the government's incentives policy, with the BNDES as its main instrument, can be questioned for different reasons, as well as the election of a certain segment of companies disregarding others, based on arguments yet to be explained. The resources allotted could produce better social and environmental results if they were used to promote the family farm production of diverse foods.

The alleged reason is that Brazil is strongly competitive in this sector and that the BNDES offers financing according to the companies' demand. We believe this should be the role of private banks, and that it represents exactly the opposite to what we should expect from a public bank, oriented to economic and social development. Other factors, such as the capacity to create jobs, the environmental sustainability and the development of science and technology, need to be considered when defining investment priorities. It must be taken into account that the Fund for Workers Protection (*Fundo de Amparo ao Trabalhador*, abbreviated FAT) is the BNDES's main source of pecuniary resources. Additionally, Brazil lacks infrastructure in the fields of sanitation, public transport, health and education. Building this infrastructure would generate many jobs and benefits for the entire population.

Regarding foreign trade, the choice of the bovine stockbreeding sector only deepens the already great dependency on commodities exports with little added value and a low level of innovation, such as mineral and agricultural products. Brazil is already under an unequal exchange relationship, since it exports commodities and imports highly technological products. It makes no sense for the national development bank to spend public funds so that a company that already sells meat can start selling even more.

References

BRF 2016, 'Relatório Anual 2015'. Available from: https://www.brf-global.com/brasil/responsabilidade-corporativa/relatorio-anual. [23 July 16].

DEMATTÊ FILHO, F & MORUZZI, P 2011, 'Dinâmica tecnológica da cadeia industrial da avicultura alternativa: multifuncionalidade, desenvolvimento territorial e sustentabilidade. Segurança Alimentar e Nutricional', *Campinas*. Available from: http://www.cpmo.org.br/artigos/artigo_dematte_revista.pdf. [13 November 15].

GARCIA, A 2011, 'BNDES e a expansão internacional de empresas com sede no Brasil'. Available from: http://www.auditoriacidada.org.br/wp-content/uploads/2013/10/bndes-e-a-expanso-internacional-de-empresas-com-sede-no-brasil.pdf. [22 July 15].

JBS 2016, 'Relatório da Administração 2015'. Available from: http://jbss.infoinvest.com.br/ptb/3605/DF%20JBS%20311215%20Portugues_Parecer%20e%20RA%20Completo%20Final.pdf. [23 July 16].

MARFRIG 2016, 'Relatório da Administração 2015'. Available from: http://ri.marfrig.com.br/PT/Documentos/3856_2015-T%20MFG_RADM_PORT_v20_LIMPA20hrs.pdf. [25 July 16].

MASCARENHAS, A. et. al. 2012 e 2015, 'Participação de Mercado das Indústrias frigoríficas em Mato Grosso do Sul', *Famasul e Unitec*. Available from: http://famasul.com.br/public/banco-de-imagens/6848-artigo-10-artigo-frigorificos-em-ms-maio-2015.pdf. [25 September 15].

SANTOS et al. 2015, 'O complexo agroindustrial da carne bovina', *Sober*. Available from: http://www.cepea.esalq.usp.br/pdf/Complexo_carne_comautor.pdf. [25 September 15].

SCHLESINGER, S 2010, 'Onde Pastar? O gado bovino no Brasil', *Fase*. Available from: http://fase.org.br/wp-content/uploads/2010/06/Onde-pastar.pdf. [20 December 2010].

SERRAT, D 2012, 'Intervenção do Estado na economia – a participação acionária do BNDES e dos fundos de pensão de estatais para a criação da BRFoods'. Available from: http://www.tcc.sc.usp.br/tce/disponiveis/89/890010/tce-01082013-085559/publico/TCCDanielaMottaMonteSerrat.pdf. [22 July 2016].

SIQUEIRA, M 2016, 'Os determinantes da internacionalização das empresas brasileiras do setor de carne bovina', *USP*. Available from: http://www.teses.usp.br/teses/disponiveis/11/11132/tde-04052016-110931/?&lang=pt-br

SOUZA, A 2012, 'BNDES, campeões nacionais, expansionismo e integração regional'. Available from: http://www.aahe.fahce.unlp.edu.ar/jornadas-de-historia-economica/iii-cladhe-xxiii-jhe/ponencias/Matos%20Souza.pdf. [18 July 2015].

TCU 2015, 'Auditoria nas operações de crédito e de mercado de capitais realizadas pelo BNDES e pela BNDESpar com o grupo JBS', *Tribunal de Contas da União*, dezembro. Available from: http://portal.tcu.gov.br/lumis/portal/file/fileDownload.jsp?fileId=8A8182A151356F96015181D739787E32. [18 July 2015].