# Industrial Policy: Opportunity to Innovate with Responsibility

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In both academia and in politics, the theme of *industrial policy* has returned to the center of discussions. Not that it had completely disappeared, but it was for some time relegated to the sidelines. The debate is controversial and sometimes heated. On one side we have those who are against any kind of industrial policy.<sup>1</sup>On the other, there are those who equate economic growth to industrial policies.<sup>2</sup>At the center there are those who support "good" industrial policies<sup>3</sup>. Some countries, such as France, have a long tradition in promoting industrial policies<sup>4</sup> and others, such as the United States and the United Kingdom, at least in political discourse, oppose the idea. In any case, there is evidence that it is increasingly difficult to find examples of countries that have experienced leaps in productivity in some sectors of their economies, without somehow using targeted industrial policy incentives<sup>5</sup>. Countries like South Korea, China and other Asian tigers are constantly cited as examples of countries where industrial policies have worked<sup>6</sup>.

In Brazil, there are increasing levels of public debate over industrial policy in the meatpacking sector. The Productive Development Policy (PDP) document aims to "give more power to Industrial Policy, through the expansion of its scope, the deepening of the actions already undertaken and the capability to design, implement and evaluate public policies". This document specifically deals with the meat packing industry, setting goals such as to "(i) uphold Brazil's position as the largest exporter of animal protein, and (ii) make this segment, the main meat export sector of agribusiness." Furthermore, the major challenges identified in the PDP for the meat packing industry with a view to retaining

<sup>&</sup>lt;sup>1</sup>Canêdo-Pinheiro, M, P.C. Gomes Ferreira, S.A. Pessoa et al, "Por que o Brasil não Precisa de Política Industrial", in Ensaios Econômicos EPGE, n 644, 2007.

<sup>&</sup>lt;sup>2</sup>Rodrik, Dani, "Industrial Policy: Don't Ask Why, Ask How," Middle East Development Journal, 2008, pp. 1-29.

<sup>&</sup>lt;sup>3</sup> There is a consensus about industrial policies related to "research and development". The argument pro state aid in such investments is related to the idea that many types of scientific research may potentially benefit different individuals; a potential private investor would not have the correct incentives to invest socially desirable quantities on them. Nevertheless, some argue that, despite the benefits from state aid, there is a risk of crowding out of private investments in some areas of research and development.

<sup>&</sup>lt;sup>4</sup> These countries have formulated and implemented different types of industrial policies and often tried to create a "national champion". See: OECD "Policy Roundtables. Competition Policy, Industrial Policy and National Champions", 2009.

<sup>&</sup>lt;sup>5</sup> Subsidies, tax breaks, credit lines from public banks, use of procurement policies, preferences for national companies, among others. These are just a few examples of instruments used in promoting industrial policies.

<sup>&</sup>lt;sup>6</sup>Although the academic debate and policy admits that industrial policies were not solely responsible for the productivity gains in these economies, it is also recognized that this was an important variable in the process. See: Chang, Ha-Joon, "Industrial Policy: Can we go beyond an unproductive confrontation?" a Plenary Paper for ABCDE (Annual World Bank Conference on Development Economics).

Brazil's world leadership in the sector are to: (i) expand access to markets by eliminating trade barriers, (ii) improve the health status of the national livestock (iii) modernize and expand the logistics infrastructure, (iv) ensure the supply of inputs for livestock production, (v) increase the number of cows in the national herd, and (v) add value to exported meat.

Although the goals of the PDP are essentially sectorial, political practice has shown that specific private groups seem to have benefited more than others. In particular, recent examples indicate that the Brazilian government is aiming to strengthen international mergers between Brazilian companies that produce *commodities* and other international companies that produce low-tech products. We can observe this behavior by examining loans from the Brazilian Development Bank (BNDES) to Bertin, JBS / Friboi and Brazil Foods groups, which received US\$ 1.25 billion, US\$ 500 million and US\$ 350 million,<sup>7</sup> respectively. In particular, JBS / Friboi is already the world's largest distributor of animal protein, with operations in over 20 countries. Furthermore, beyond the direct loans, the equity arm of BNDES (BNDESPar) acquired almost all of the debentures issued by the JBS/ Friboi operation that allowed for the acquisition of the U.S. based chicken processor Pilgrim's Pride. In total, JBS/ Friboi raised R\$ 1.726 billion, with BNDES accounting for 99.92% of this total, or US\$ 1.724 billion. These examples indicate how the internationalization of JBS/Friboi's business and business-sector concentration is in some way linked to an official "industrial policy" implemented by BNDES, BNDESPar and pension funds<sup>8</sup>.

A possible problem caused by the PDP is a disruption of the internal meat market. Given that these companies received financial aid, they were able not only to grow but also to buy smaller companies that were struggling to survive the 2008 crisis. The result of these acquisitions could be a less competitive sector. This market disequilibrium

<sup>&</sup>lt;sup>7</sup> According to the Relevant Fact published by JBS S.A., on December 31<sup>st</sup> 2009, the acquisition of Bertin was completed after approval by an extraordinary general meeting of its shareholders. As a result, JBS/Friboi and Bertin are now part of the same group. This M&A is awaiting a hearing by the Board of Economic Defense, CADE.

<sup>&</sup>lt;sup>8</sup> In 2008, the four largest direct operations from BNDES in the industrial sector involved the "food/meat" sector. The Bertin group received loans worth R\$ 2.5 billion (26% of total); JBS, R\$ 700 million (14,66% of total); and Independência, R\$ 500 million (13,89% of total). Likewise, BNDES's stake in these groups, in 2008, was 26,92%, 13%, 16,66% and 13,89% respectively. (Almeida, Mansueto, "Desafios da Real Política Industrial Brasileira do Século XXI", paper for discussion IPEA nº 1452.

created a gap between the price farmers' received and the price paid by consumers shown above.







The meatpackers that received financial aid from the government act as middlemen in the meat market, that is, they buy the animals from the farmers and sell the frozen meat to the final consumers. Therefore, if there is a market concentration in the hand of a few companies, then it is possible that this market power will turn into more profits for them. The meatpackers may be in a position to take over a largest slice of the consumer and producer surpluses. The key question that arises is: was there any harm to the Brazilian meat market caused by meat market concentration? If yes, who is to blame, financial aid from the BNDES or the 2008 financial crisis? In order to shed some light on these questions we developed an empirical approach that uses the difference and difference methodology. Preliminary results show that the price received by farmers decreased and the price paid by consumers increased. These results indicate that meat producers are worst off after the PDP was implemented by the BNDES. More precisely, the PDP has made the meat market more concentrated allowing a handful of companies to control this market.

In Section II, we establish an empirical approach to the questions and describe our database. In Section III, we discuss our empirical findings. Section IV contains some concluding remarks.

### **Section II - Empirical approach**

The goal of this empirical exercise is to measure (I) if there was any harm caused to the Brazilian meat market by possible market concentration, and (II) if yes, who's to blame, the BNDES financial aid to the meatpackers or the 2008 financial crisis? Two important events occurred in 2008 that shook the national meat<sup>9</sup> market: the international financial crisis (officially beginning on September 15<sup>th</sup> with the bankruptcy announcement of Lehman Brothers<sup>10</sup>) and, simultaneously, the BNDES' loans to the meatpackers. However, since both episodes occurred almost at the same time, there is an initial impossibility to separate both effects in the price of Brazilian meat. This occurs because we don't know the precise date of the loans, and even if we knew, the effects would still be masked by the crisis, given that the events overlapped. Therefore, it is necessary to obtain a control group, i.e., a group with similar characteristics with the treatment group (meat) but with no direct or indirect correlation with BNDES' loans. It is more likely to define a causal relationship (between the BNDES' loans and changes in the meat price in possession of a treatment and control groups), as opposed to just a simple correlation.

The choice of the control group was based upon the necessity of having similar characteristics to the treatment group (primary goods and important to Brazilian exports)

<sup>&</sup>lt;sup>9</sup>By meat we mean beef, pork and poultry

<sup>&</sup>lt;sup>10</sup>Lehman Brothers Holdings Inc. was an investment bank and a provider of other financial services, with global activity. It was a global financial services company that, until declared bankruptcy in 2008, did business in the field of capital investments in fixed income sales, trading, and investment management. Its primary dealer was the U.S. Treasury securities Market.On September 15, 2008, the company filed for bankruptcy because it has had losses caused by the subprime crisis in the United States. It is known as the biggest bankruptcy in U.S. history.

and not has suffered impact from the BNDES' loans to the meatpackers. It is important to highlight that the selection of the control group must be carefully done given that it's what validates our empirical strategy. Take as an example soybean; at first it seems to have all of the desirable characteristics that are needed to be part of the control group (important in the Brazilian export's basket, a primary good and not too important in terms of the import's basket). However, soybean is used as an input for cattle ration, therefore making it indirectly related to BNDES' loans. The same occurs with corn, another item that, in principle, seems ideal to compose the control group, however it is also used as an input for cattle rations. Based on the established criteria, mentioned above, we will use three goods to compose our control group: orange, sugar and coffee.

The proximity between the control and the treatment group can also be observed through their weight <sup>11</sup>(US\$FOB) in the Brazilian exports basket. Orange, sugar (more specifically, sugar-cane) and coffee have respective weights of 0.007%, 5.47% and 0.37%, while the respective weights of beef, pork and poultry are 1.98%, 0.64% and 1.34%. With the exception of sugar, the importance of the control group and the treatment group within exports baskets very similar.

We work with a database of over 128 observations and 6 variables. We divided the database into variables that contain prices received by farmers and prices paid by consumers. We work with three types of meat: beef, pork and poultry. Our database therefore contains information on farmer's received price and consumer's paid price for these three types of meat. We also have three types of primary goods: orange, sugar and coffee. Analogously, we insert into the database the farmer's received price and the consumer's paid price for these three types of primary goods. The database has monthly periodicity, beginning in December 1999 and finishing in July 2010. We can thus observe the behavior of all variables before and after the 2008 crisis. In section III-B, we give further details of our database.

### II-A - Methodology

<sup>&</sup>lt;sup>11</sup>Source: Trade, Industry and Development Ministry

The application of the *difference-in-difference* (DID) methodology requires a control group and a treatment group. We were able to collect the price data of the control group (orange, coffee and sugar) and the treatment group (beef, pork and poultry) from IBRE.<sup>12</sup>The empirical strategy starts from the premise that BNDES selected the meat sector randomly. This premise is certainly subject to criticism, however, this was the argument used by BNDES itself. According to BNDES, it did not make discretionary choices with regards to the benefited sectors. Additionally, a strong hypothesis is needed for the implementation of DID methodology; we must assume that the treatment group and the control group have a common trend. This works, roughly, as parallel curves between the variables of control and the treatment group. We will try to demonstrate that these two groups (control and treatment) had the same macro trends until the 2008 crisis, when the government only chose to help some companies pertaining to the treatment group.

The only way to separate the BNDES financial aid from the 2008 crisis is to compare the treatment group with the control group. They are both export goods so, presumably, they both should demonstrate similar effects before, during and after the crisis. The importance of the DID methodology relies on the ability to separate BNDES' loans effects from those arising from the 2008 crisis.

We can face the granted loans as a natural experiment once it was characterized by a phenomenon that induced a randomization between eligible agents (exports goods) to "treatment". This method is typically used to make comparisons between groups before and after the phenomenon (BNDES' loans in our case).

We assume a change in policy occurs at time t = k and each individual observed before and after the policy change, at times  $t = t_0 < k$  and  $t = t_1 > k$ , respectively. For simplicity of notation, we denote by  $d_i$  (without the time subscript) the treatment group to which individual *I* belongs to. This is identified by the treatment status at  $t = t_1$ . Therefore, the group beef, pork and poultry have  $d_i = 1$  and the group orange, coffee and sugar have  $d_i = 0$ .

<sup>&</sup>lt;sup>12</sup>http://portalibre.fgv.br/

The DID estimator uses a common trend assumption between the control and the treatment<sup>13</sup> group, i.e., as if both groups presented parallel curves over time<sup>14</sup>.

Since DID is based on randomization hypothesis assumption<sup>15</sup>, therefore there is no specific factor in the treatment group that can explain a shift in its price but not in the control group's price. In other words, on average, everything that affects the treatment group, besides the BNDES' loans, also affects the control group. Hence, the groups are supposedly similar.

Under the DID hypotheses and with a little algebra<sup>16</sup> it is possible to have an estimator:

$$\hat{\alpha} = \left[\overline{y}_{t_1}^1 - \overline{y}_{t_0}^1\right] - \left[\overline{y}_{t_1}^0 - \overline{y}_{t_0}^0\right]$$
(1)

Where  $\overline{y}_t^d$  is the average outcome over group *d* at time *t*. DID estimator measures the excess outcome change for the treated as compared to the non-treated.

<sup>13</sup>i.e,

 $y_{it} = \beta + \alpha_i d_i + u_{it}$ 

where  $E(u_{it} \mid d_i, t) = E(n_i \mid d_i) + m_t$ 

In the equation above,  $n_i$  is an individual fixed effect unobservable and m is an aggregate macro shock.

<sup>14</sup>It is not necessary to be so strict on this aspect. The explanation is merely illustrative.

<sup>15</sup>  $E(u_{it_1} - u_{it_0} | d_i = 1) = E(u_{it_1} - u_{it_0} | d_i = 0) = E(u_{it_1} - u_{it_0})$ 

<sup>16</sup>Under DID hypothesis:  $E(y_{it} | d_i, t) = \beta + E(a_{it} | d_i = 1) + E(n_i | d_i = 1 + m_t)$  se  $d_t = 1 e t = t_i$ 

We can eliminate both  $\,eta\,$  and the errors by doing sequential differentiations:

$$\hat{\alpha} = E(\alpha_i \mid d_i = 1) = \left[E(y_{it} \mid d_i = 1, t = t_1) - E(y_{it} \mid d_i = 1, t = t_0)\right] - \left[E(y_{it} \mid d_i = 0, t = t_1) - E(y_{it} \mid d_i = 0, t = t_0)\right]$$

This is precisely the DID identification strategy:  $\hat{\alpha} = \left[\overline{y}_{t_1}^1 - \overline{y}_{t_0}^1\right] - \left[\overline{y}_{t_1}^0 - \overline{y}_{t_0}^0\right]$ 

The DID identification depends on the hypotheses that the control and treatment variables have the same macro trends, i.e., are subject to the same macro shocks. If this is not true, then the DID estimator won't consistently estimate the desired parameter.

### II-B - Data

The database has monthly periodicity, begins in December of 1999 and finishes in July of 2010; therefore we can observe the behavior of all variables before and after the 2008 crisis.

As previously mentioned, the treatment group consists of beef, pork and poultry. To evaluate the impact of the BNDES' loans to the meatpackers, we used the producer's received price series from FGV<sup>17</sup>: Beef ( $pp_b$ ), Pork ( $pp_k$ ) and Poultry ( $pp_y$ ), respectively. To assess the impact on consumer we used the consumption price index (CPI) also from FGV: Beef ( $pc_b$ ), Pork ( $pc_k$ ) e Poultry ( $pc_y$ ).

The control group consists of orange, coffee and sugar. From the producer side, the data belong to the same producer's received price series: Orange  $(pp_o)$ , Coffee  $(pp_{cf})$  and Sugar  $(pp_s)$ . From the consumer's perspective the series is, again, the CPI: Orange<sup>18</sup>  $(pc_o)$ , Coffee<sup>19</sup>  $(pc_{cf})$  and Sugar<sup>20</sup>  $(pc_s)$ .

All of the variables are in logarithms (ln(x) where x is a price variable).

## **Section III - Empirical Findings**

<sup>&</sup>lt;sup>17</sup>Fundação Getulio Vargas

<sup>&</sup>lt;sup>18</sup> The pera orange corresponds to about 70% of the Brazilian cultivated area.

<sup>&</sup>lt;sup>19</sup>We chose ground coffee instead of instant coffee due to the smaller availability of data from the last.

<sup>&</sup>lt;sup>20</sup>We chose white sugar instead of coarse sugar due to less availability of data from the last.

As mentioned, DID was used as our model. The estimation was made in pars, i.e., comparisons of the element i from treatment group with the element j from control group. Therefore, the results presented have the equation (1) structure, repeated above:

$$\hat{\alpha} = \left[\overline{y}_{t_1}^i - \overline{y}_{t_0}^i\right] - \left[\overline{y}_{t_1}^j - \overline{y}_{t_0}^j\right]$$

Where *i* =beef, pork, poultry and *j*= orange, coffee, sugar

Note that more than one estimator can be estimated (up to nine)

The estimation of equation (1) is only possible based on the assumption, among others already mentioned, that there is a common trend between the variables. To reaffirm this common tendency we shall use the following parameters as an evaluation method: (1) series' graphs (to perform a visual analysis); (2)  $\rho_{x,y}$ : correlation<sup>21</sup> among variables *x* and *y*; and (3) *t* statistic of a simple regression<sup>22</sup>- between treatment variable (*y*) and control variable (*x*) - bigger than 2,57, i.e., at 1% level of significance.

The series which presented a larger correlation r than  $0,75^{23}$  and  $\hat{\beta}$  at 1% level of significance were considered with to have the same macro trends and, therefore, were able to be estimated using equation (1). Put in another way, the variables that successfully pass criteria (1)-(3) are able to become a part of the control group.

The sequence of analysis was first to visually analyze the graphs to determine whether there were any common tendencies. Next, we verified the correlation index among the variables. And finally, we analyzed the t statistic concerning the simple regression between the treatment and control variables (Table 1-A until 1-C).

Let us now perform the analysis by groups: (1) beef, (2) pork and (3) poultry. In the group 1 (beef) it was possible to confirm the common trend with the following items in terms of prices paid by consumers: coffee and orange (Figures 1 and 2). This meant

<sup>&</sup>lt;sup>21</sup>Correlation coefficient indicates the strength and direction of the linear relationship between two random variables. The correlation can vary between -1 and 1, where 1 indicates perfect correlation, 0 indicates no correlation and -1 indicates perfect negative correlation.

<sup>&</sup>lt;sup>22</sup>*T* statistic of  $\beta$  from a simple regression:  $y = k + \hat{\beta}x$ 

<sup>&</sup>lt;sup>23</sup>This parameter choice was *ad hoc*.

that orange and coffee showed a common trend with beef when we dealt with the price paid by consumers. In terms of the price received by producers, coffee and orange also presented a common trend with beef (Figures 3 and 4). The next item to be analyzed is the correlations between series. We are only interested in correlations above 0,75, as shown in Table 2-A. The most correlated series with beef is coffee, both for price paid by consumers ( $\rho$ =0,82) and price received by producers ( $\rho$ =0,83).

Table 2-A			
		Beef	
		Price Paid by Consumers	Price Received by Producers
Coffee	Price Paid by Consumers	ρ=0.82	-
	Price Received by Producers	-	ρ=0.83
Orange	Price Paid by Consumers	ρ=0.88	-
	Price Received by Producers	-	ρ=0.80
Sugar	Price Paid by Consumers	ρ=0.66	-
	Price Received by Producers	-	ρ=0.69

Correlation coefficient among line and column items. Note that it only makes sense to calculate correlations between the same types of price (or price paid by consumers vs. price paid by consumers or price received by producers vs. price received by producers).

For group 2 (pork), the common trends in prices paid by consumer segment were again with orange and coffee (Figures 5 and 6). In terms of prices received by produce's, the only good that showed a common trend was coffee (Chart 7). Differently from beef, pork only had 3 correlations above 0,75 and they all had almost the same value, proximally 0,83. For example, the correlation between pork and coffee is 0,83, both for price paid by consumers and price received by producers as shown in Table 2-B.

Table2-B

Tablez-D			
		Pork	
		Price Paid by Consumers	Price Received by Producers
Coffee	Price Paid by Consumers	ρ=0.83	-
	Price Received by Producers	_	ρ=0.83
Orange	Price Paid by Consumers	ρ=0.84	-
	Price Received by Producers	-	ρ=0.70
Sugar	Price Paid by Consumers	ρ=0.72	-
	Price Received by Producers	-	ρ=0.70

Correlation coefficient among line and column items. Note that it only makes sense to calculate correlations between the same types of price (or price paid by consumers vs. price paid by consumers or price received by producers vs. price received by producers).

Finally, group 3 (poultry) considering the consumers paid price segment, only orange and coffee presented common trends with poultry (Figures 8 and 9). Analyzing the producers received price segment, only sugar appears to have common trend with poultry (Figure 10). For the price paid by consumers, we found that poultry was correlated with coffee and orange, 0.79 and 0.80 respectively. And for price received by producers we found that poultry was correlated with orange and sugar, 0.78 and 0.77 respectively (Table 2-C).

Table 2-C

		Poultry	
		Price Paid by Consumers	Price Received by Producers
Coffoo	Price Paid by Consumers	ρ=0.79	-
Conee	Price Received by Producers	_	ρ=0.58
Orange	Price Paid by Consumers	ρ=0.80	-
	Price Received by Producers	_	ρ=0.78
Sugar	Price Paid by Consumers	ρ=0.73	-
	Price Received by Producers	-	ρ=0.77

Correlation coefficient among line and column items. Note that it only makes sense to calculate correlations between the same types of price (or price paid by consumers vs. price paid by consumers or price received by producers vs. price received by producers).

Table 3-A

		Beef	
		Price Paid by Consumers	Price Received by Producers
Coffee	Price Paid by Consumers	α= 21.2%	-
Conee	Price Received by Producers	-	α= -2.5%
Orango	Price Paid by Consumers	α= 14.2%	-
Oralige	Price Received by Producers	-	α= 5.1%
Sugar	Price Paid by Consumers	-	-
Jugai	Price Received by Producers	-	-

Equation (1) coefficient

After confirming the hypothesis of common trend, we estimated the coefficients of interest (Table 3-A) using equation (1). Analyzing separately, one can note that the BNDES' loans had an impact on beef prices. At the consumers paid price segment, there was an increase of approximately 21.2% when we used coffee as a control variable and a 14.2% increase when we used orange as the control variable. Looking at the producers'

side, there was an increase in price of roughly 5.1% using orange as control group and a decline in prices of 2.5% using coffee as control.

The price of pork paid by consumers had an increase of approximately 2.0% using coffee as control group and a decline of 5% using orange as a control group. The prices received by producers fell about 12.4% when using coffee as a control group (Table 3-B).

Table 3-B			
		Pork	
		Price Paid by Consumers	Price Received by Producers
Coffee	Price Paid by Consumers	α= 2.0%	-
	Price Received by Producers	-	α= -12.4%
Orange	Price Paid by Consumers	α= -5.0%	-
	Price Received by Producers	-	-
Sugar	Price Paid by Consumers	-	-
	Price Received by Producers	-	-

Equation (1) coefficient

The price of poultry paid by consumers increased of about 1.6% using coffee as a control and declined of 5.4% using orange as a control. The price received by producers fell by approximately 9.9% using orange as a control and increasedby1.2% using sugar as control group (Table 3-C).

Table3-C			
		Poultry	
		Price Paid by Consumers	Price Received by Producers
Coffee	Price Paid by Consumers	α= -5.4%	-
	Price Received by Producers	-	-
Orange	Price Paid by Consumers	α= 21.2%	-
	Price Received by Producers	-	α= -9.9%
Sugar	Price Paid by Consumers	-	-
	Price Received by Producers	-	α= 1.2%

Equation (1) coefficient

Our results show that there is evidence that the profit of meat packing industry increased, or put in another way, that farmers started receiving less and that consumers started paying more. Take for example the beef group, which represents 37.9% of the

meat consumption basket. According to the data, the price paid by consumers increased by 21.2%, but the price received by farmers fell about 2.5% (using coffee as control group). When we used orange as a control group, the consumers' price increased by approximately 14.2% and the producers received price increased by about 5.1%, i.e., the gains originated from the rise in prices were not given to farmers nor to consumers. The increase in meat prices paid by consumers grew more than proportionally than the increased price farmers received.

The loans offered by the BNDES to the meatpacking industry seem to have caused a concentration of power in the meat market in Brazil. The meatpacking industry would be extracting the producers' profit and hence the consumers' surplus.

A future research could supplement the results of this article by inserting some points not yet addressed here. First, it would be interesting to use an index to verify whether there really was a greater market concentration in meat packing industry in Brazil after the BNDES' loans, such as, the Herfindahl-Hirshman (HHI) index. It would also be interesting to try to find other control groups or complement the group that has already been used in the article.

# Conclusion

In both academia and in politics, the theme of industrial policy has returned to the center of discussions. Not that it had completely disappeared, but it was for some time relegated to the sidelines. The debate is controversial and sometimes heated. On one side we have those who are against any kind of industrial policy. On the other, there are those who equate economic growth to industrial policies. We tried to shed some light over this debate. We empirically demonstrated the impact of BNDES' loans on the Brazilian meat market by using the difference-in-difference methodology.

Our results indicate that there is evidence that profits into the meatpacking industry have increased, or put another way, that farmers started receiving less and consumers started paying more. Analyzing the beef segment, we conclude that there is evidence that the price paid by consumers increased by 21.2% and the price received by

farmers fell by about 2.5% (using coffee as a control group). Even if we use orange as a control group the prices would have been mismatched. In this case, the consumers' price increased approximately by 14.2% and the price received by the farmers increased only about 5.1%, i.e., the gains were not passed through. The increase in the price of meat for the consumer was higher than the increase in the price received by farmers.

With these results, we have incentives to discuss clear and transparent criteria for the process of decision-making for industrial policies strategies. Once the discussion is no longer whether to have or not have industrial policy, but at what price we should have one.

Moreover, if we assume that any form of industrial policy should be directed to gains for society and not for profit of private business groups, then we must safeguard from dubious practices and abuses, as well as, to proceed with the use of transparent and accountable instruments to promote industrial policy. We can seize the momentum of Brazil as an opportunity to think and invent alternatives regarding the goals and ways to make industrial policy. Yet, at same time, we must ensure the possibility of transparency and control mechanisms of the democratic decision making process. We have an opportunity to innovate. But we must take it responsibly.

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# Appendix





























