

Competition Conditions in the Argentinean Oleaginous Sector

Summary ¹

1. According to article 18º, section a) of Law N° 25,156, the Comisión Nacional de Defensa de la Competencia (CNDC), Argentina's competition authority, has the power to commission research in order to understand the competitive conditions of markets which it considers relevant, understood as having an impact on consumption and production.
2. In this context, the CNDC requested to Dr. Carlos A. Romero a report on the Argentinean market of edible oils. The purpose of such study was to quantify and assess the market structure, size, agents, binding regulations and other relevant aspects of the production and distribution chain of edible oils for consumption. With the report at hand, the CNDC can diagnose and suggest the necessary measures to strengthen and improve the competition conditions in the identified relevant markets.
3. In the first section, we will describe the market structure and chain value of the oleaginous complex. Section 2 assesses relevant markets, concentration levels and analyzes the competitive conditions. Section 3 shows price and margin analysis. Finally, section 4 exhibits the study's main conclusions.

1. Market Structure, Production Technology and Players

4. Argentinean production of oils derives mainly from soybeans, sunflower and corn grains. Domestic consumption is mainly based on sunflower oil (unrefined or mixed), followed by corn oil. Soybean oil and its derivatives are mostly exported.
5. The oil industry represents 11% of the national food industry value added and 2% of the total manufacturing industry value added. On the other hand, the oleaginous complex as a whole represents 27% of the country exports.²

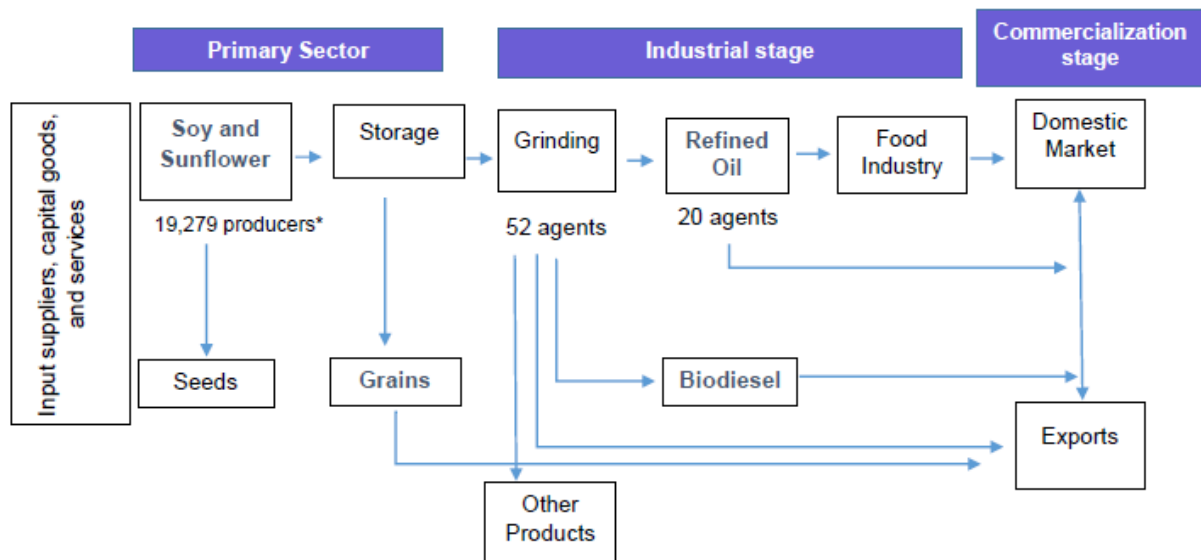
¹ This document is based on the work by Carlos Romero, *Estudio sobre las Condiciones de Competencia en el Sector Oleaginoso de la República Argentina*, September 2016, from now on Romero (2016).

² Average 2010-2014 (latest available information).

1.1 Oleaginous Complex Value Chain

6. The value chain of the oleaginous complex consists of three main stages: primary production (grains), industrial (processing), and commercialization. Graph 1 shows each stage in detail.

Graph 1. Oleaginous Complex Value Chain



Nota (): Number of producers of cereal, oleaginous and forage.*

Sources: Romero (2016) based on information of DIAR-DIAS (2011), MECON. Argentinean Provisional Integrated System (SIPA), Year 2013 MTE and SS. CNDC (2014).

7. The sector dedicated to the oleaginous complex primary production in Argentina is atomized and very competitive, it is made up of 19,279 companies involved in the harvesting of cereals, oleaginous and forage.³ Its production is sold to oil processing companies in the country (75%), or in the foreign market (25%).
8. In the industrial stage, grains are processed by grinding (or crushing) and are transformed into uncooked oil and oil meals or expellers.⁴ Then, the uncooked oil is either exported or refined to be transformed into edible oil (also known as refined oil). Oil flakes and pellets,⁵

³ Information updated to 2013.

⁴ The expellers are coproducts of the milling activity.

⁵ The commonly called "pellet" is obtained through the solvent oil extraction process. This product typically contains a residual of 1-2% of fat. On the other hand, oil meals or expellers are obtained through extrusion and pressing, without added chemicals, and contain between 5% and 7% of fat.

with high protein value, are sold as animal food and are no longer part of the oil value chain.

9. Finally, the production of industrial refined sunflower and soybean oil is usually fractioned and bottled to be sold to wholesalers, shops, supermarkets, and other distribution channels.

1.2 Production Technology in the Industrial Stage

10. The stages which encompass the oleaginous processing are essentially three. Firstly, seeds are prepared for their use at the mills, which implies their cleaning, husking and conditioning. Secondly, unrefined oils and protein meals are extracted through a process (grinding) with the use of solvent in the case of soybean and by means of press in the case of sunflower. Finally, on the basis of unrefined oil, the oil refining is carried out.
11. The grinding process is capital-intensive and it is characterized for having large economies of scale and high energy consumption. The most widespread technology is the oil extraction by means of solvent with hexane, a petroleum derivative. However, this process is contaminating and costly.
12. Oils refining is also capital-intensive, and composed of the following stages: degumming,⁶ neutralization,⁷ bleaching,⁸ winterizing (or dewaxing)⁹ and deodorizing.¹⁰ These stages differ, depending whether soya or sunflower oil is being refined, due to their specific characteristics.
13. The refining process has two alternative methodologies: chemical and physical. The latter offers advantages over the former, since it generates less effluents and lower water consumption, oil shrinkage and processing costs. Although in Argentina chemical production is predominant, the large oil companies foresee that, in the medium run, physical production will become predominant, despite the fact that a high initial investment is required.

⁶ Unrefined oil hydration, from a water degumming, followed by one of acid.

⁷ Fat acids neutralize the oil by mixing it with caustic soda.

⁸ Adding powdered clay.

⁹ Oil cooling after the bleaching to allow the formation of wax crystals.

¹⁰ It is the last stage of refining. It is carried out to remove the spots and odors present at the start of the refining process and those produced in the previous stages.

1.3 Characterization of the Supply

1.3.1 Primary Production

14. During the period 2010-2015 Argentina has produced an average of 55.7 million tons (Mt) per year of oleaginous grains.¹¹ The average production of soybeans was 50.9 Mt (and has shown an increase of 17% in this period), while that of sunflower grains was 2.9 Mt (which implies a growth of 41%).¹² Corn production went up to 33.8 Mt in 2015, although a significant fraction of this production is not intended for the oil industry.¹³

15. Part of the production of grains is sent to storage facilities, where grains are kept for storage until the sale and delivery date. The invention and common use of the silo bags allowed the producer to become, to a large extent, free from the traditional transportation logistics and storage system.

1.3.2 Industrial Stage

16. In 2014, the oils production went up to 8.1 Mt.¹⁴ However, in the period 2010-2014 the sector's production did not vary significantly (-1.1%), even though there was a strong decrease in sunflower oil production (-17%), this was countered by a strong output increase in soybean oil production. In this period, soybean oil accounted for 84% of the total volume of oleaginous oils produced, while sunflower oil accounted for 16%.¹⁵

1.3.3 Commercialization

17. Soybean unrefined oil production is intended for exports (61%), biodiesel production (27%) and refining (12%).¹⁶ Approximately half of the sunflower unrefined oil production (47%) is exported and the rest is refined mainly for domestic use and, in a lower fraction, for other uses within the food industry.¹⁷

¹¹ The oleaginous grains included are: soybeans, sunflower, peanut, cotton, linen, safflower, and rapeseed.

¹² The production of other oleaginous oils is minor.

¹³ Annual average participation for the period 2010-2015, without important changes in each year.

¹⁴ It only includes the oleaginous oils' production: soybeans, sunflower, linen, cotton, peanut, safflower and rapeseed.

¹⁵ Corn oil is not included due to missing information.

¹⁶ Average 2010-2015.

¹⁷ Average 2010-2015.

1.3.4 International Trade

18. The oleaginous complex accounts for 29% of Argentinean exports,¹⁸ mainly due to the soybean sub complex. The balance of trade of the oil industry, historically positive, was around USD 4500 million (about 6 Mt) in 2015. This value is fundamentally explained by the soybean oil exports, which amount to 4.4 Mt per year and establishes the country as the main worldwide exporter of this product.¹⁹ With respect to sunflower oil, Argentina is the third most important exporter with an average of 0.6 Mt per year.²⁰

2. Relevant Markets, Concentration and Competition Conditions

2.1 Product Relevant Market

19. A qualitative analysis of the Argentinean oleaginous complex makes it possible to differentiate relevant product markets in each value chain link. The relevant product market in the first chain is grain, differentiating for each oleaginous grain and corn. In the industrial stage, the relevant product markets are unrefined oil and refined oil (sunflower, corn and mixed).²¹

2.2 Geographic Relevant Market

20. According to the analysis of the CNDC in recent opinions, the relevant markets, both for grains and oils, are defined as being of national scope. As an example, in 2012, Opinion 933 of the CNDC concerning the acquisition by Calyx Tierra S.A. of four batches belonging to Cargill, states that *“the geographic dimension of the markets of the abovementioned grains for the analysis of the current transaction (wheat, corn, soybean and barley) is defined with national scope”*. At the same time, a report made by the CNDC concludes that the geographic market of the big edible oil producing companies is national.²²

¹⁸ Average 2010-2015.

¹⁹ Average 2010-2014.

²⁰ Average 2010-2014.

²¹ In the segment of edible oils, olive oil constitutes a different market from sunflower, corn, and mixed oils, due to differences in prices and quality perception.

²² Another example is Opinion 921 of the CNDC of 2012 about the acquisition of Kadesh Hispania S.L. and Leterton España S.L. of shares of Simoneta S.A., which determines that the relevant geographic market in the grains market (soya, sunflower and corn) is the entire national territory.

2.3 Market Concentration

21. Although the oleaginous complex has many primary producers, in the soybean sub complex 6% of producers concentrate 54% of the production. This group, representative of the large-scale agriculture (sowing pools), has consolidated as a new player over the last decade and occupies the role of administering the production means of third parties.
22. The industrial sector is composed of 52 companies dedicated to grains’ grinding and 20 companies carrying out the oil refining. Table 1 shows that, even though the four biggest companies concentrate 54% of the market, the resulting HHI is not too high (1035) and seems to indicate that the market concentration is low.²³

Table 1. Concentration at Industrial Stage – January 2015

Group/Company	Production capacity (Mt per day)	Percentage participation
AGD	31,000	15.0%
Vicentin	31,000	15.0%
Cargill	26,200	12.7%
Bunge Argentina	24,200	11.7%
Molinos Río de La Plata	21,500	10.4%
Louis Dreyfus	20,000	9.7%
Oleaginosa Moreno Hnos. - Glencore	15,150	7.3%
Nidera	11,000	5.3%
Buyatti	4,806	2.3%
Other companies	22,075	10.7%
Total companies	206,931	100.0%
C4	54.3%	
HHI	1,035	

Source: Romero (2016) based on information from Rosario Stock Market on J.J. Hinrichsen S.A. database and consultations made to companies.

²³ The Herfindahl–Hirschman Index (HHI) is defined as the sum of the square of the companies’ market shares. The HHI could go from values close to 0 (in the hypothetical case of very decentralized markets, with multiple providers having minimal market shares) and 10,000 (monopolist market). According to the American regulations on horizontal concentrations (Horizontal Merger Guidelines, FTC-DOJ, 2010) a market could be considered as “decentralized” when the HHI is below 1500 points. To illustrate this, an HHI of 1500 points would correspond to a market with 7 companies, all of them with the same market share.

23. It is observed that the four main brands concentrate between 85% and 87% of the sales volume and 74% of total turnover of the companies of the oil industry in sales to consumers through the hypermarkets, supermarkets and the so-called discounts.^{24,25} The level of concentration is moderate, with an HHI close to 2000 every year.

Table 2. Concentration of Sales to the Consumer through Oils' Distribution Channels (2011-2013)

Sales volume (liters)						
Company	Year 2011		Year 2012		Year 2013	
	Turnover	Participation %	Turnover	Participation %	Turnover	Participation %
Molino Cañuelas	35,938,983	26.1%	35,148,441	25.3%	38,512,026	26.5%
Molinos Río de la Plata	29,233,727	21.2%	33,387,030	24.1%	36,703,459	25.3%
AGD	41,636,164	30.2%	36,585,948	26.4%	35,346,889	24.4%
Nidera	12,763,926	9.3%	12,718,234	9.2%	12,835,067	8.8%
Germaíz	4,591,111	3.3%	4,391,219	3.2%	3,369,184	2.3%
Vicentín	586,120	0.4%	1,237,925	0.9%	1,947,201	1.3%
Arcor	752,816	0.5%	708,310	0.5%	440,803	0.3%
Distributor brand	8,229,382	6.0%	7,958,344	5.7%	8,871,063	6.1%
Other companies	3,931,159	2.9%	6,620,685	4.8%	7,127,118	4.9%
	137,663,388	100.0%	138,756,136	100.0%	145,152,810	100.0%
	C4	86.9%	C4	84.9%	C4	85.0%
	HHI	2,181	HHI	2,044	HHI	2,059
Turnover (pesos)						
Company	Year,2011		Year,2012		Year,2013	
	Turnover	Participation %	Turnover	Participation %	Turnover	Participation %
Molinos Río de la Plata	206,249,696	25.2%	274,792,800	27.9%	327,515,030	27.0%
Molino Cañuelas	160,748,600	19.7%	185,387,241	18.8%	267,073,111	22.0%
AGD	211,010,478	25.8%	210,916,732	21.4%	232,205,611	19.1%
Nidera	51,895,178	6.4%	56,806,194	5.8%	67,860,666	5.6%
Germaíz	26,580,358	3.3%	31,791,619	3.2%	27,151,484	2.2%
Arcor	9,537,922	1.2%	12,075,674	1.2%	10,614,611	0.9%
Vicentín	2,458,540	0.3%	5,800,393	0.6%	9,726,027	0.8%
Distributor brand	63,866,796	7.8%	83,801,479	8.5%	112,955,212	9.3%
Other companies	84,836,583	10.4%	124,226,602	12.6%	158,129,405	13.0%
	817,184,151	100.0%	985,598,734	100.0%	1,213,231,157	100.0%
	C4	77.1%	C4	73.9%	C4	73.7%
	HHI	1,804	HHI	1,707	HHI	1,704

Source: Romero (2016) based on information of CCR Latam Argentina.

²⁴ Small self-service or smaller distribution channels.

²⁵ Information for the years 2011 to 2013 about the database of CCR Latam Argentina.

2.4 Vertical Integration

24. There are a very few cases of vertical integration between the oleaginous' primary production and the oil-refining industry. The only relevant vertical integration takes place in companies which have more than one activity in their productive process, among collection, mill capacity, refining, fractioning/bottling and distribution activities. Table 3 summarizes this information.²⁶

Table 3. Activities of the Most Important Oil Companies

	Primary production (grains)	Collection	Milling	Refining	Fractioning- / bottling	Distribution	
AFA	There is no integration between the oil industry and the Oleaginous primary production	√	√	√	√		
AGD			√	√	√	√	
Arcor				√	√	√	
Bunge Argentina		√	√	√	√	√	√
Buyatti				√	√	√	
Cargill		√	√				√
Germaíz				√	√	√	
LDC Argentina		√	√				
Molino Cañuelas				√	√	√	
Molinos Río de la Plata			√	√	√	√	
Nidera		√	√	√	√	√	
Oleaginosa Huanguelén				√			
Oleaginosa Moreno Hnos.				√	√		
Tanoni				√	√	√	
Vicentín				√	√	√	√

Source: Romero (2016) based on information of CNDC (2014) and DIAR- DIAS (2011).

2.5 Identification and Analysis of Barriers to Entry

25. Although the primary sector of the Argentinean oleaginous complex is very competitive, there are relevant barriers to entry, both economic and technological. The first are due to investment and sunk costs in the agricultural exploitation for the oleaginous farming, fundamentally related with land acquisition or leasing. The technological barrier is related to the access to lands profitable enough so that grain production is carried out at a competitive cost.

26. In the case of the oil industry, the main barriers to entry are economic and technical and refer to the sunk cost of installing a processing plant and to the necessary investment to comply with health and quality regulations. It is important to highlight that the processing industry is characterized for being capital-intensive, with high asset-specification. On the

²⁶ CNDC (2014).

other hand, taking into account that the oil processing can only be carried out economically in large-sized plants and when production is close to full capacity, it becomes difficult to expand capacity in the short run, because this would directly imply increasing the number of plants. Salary costs become especially important for the small edible oil companies (craft production, by means of pressing, and more labor-intensive).

27. As regards to regulatory and health barriers, the refined oils have to comply, in the production and commercialization processes, with a series of norms, regulations and good practices. Among them, these products are regulatory classified under the Argentinean Food Code (AFC).²⁷

3. Distribution, Commercialization Margins and Consumer Prices

28. 42% of the refined oils' production is destined to the internal market and it is mainly distributed through wholesalers, supermarkets and hypermarkets. Out of the total volume of wheat and soya refined oils delivered to family consumption, 44% is destined to distributors, 30% to wholesalers and 26% to big supermarkets.²⁸

3.1 Evolution of Margins

29. The following analysis refers to the evolution of margins per oil liter throughout the oleaginous chain, that is, the evolution of the difference between the prices charged and paid at each stage of the soybean and wheat oil production process.²⁹ In order to compare the measurement units of raw material and sold products in each stage, the price of each product sold in the chain has been taken to the equivalent value per liter of edible oil (VLAE).³⁰

²⁷ The CCA contains a set of dispositions which govern the hygienic-sanitary, bromatological and quality regulations which the establishments and food products should comply with in Argentina and which agree with the Codex Alimentarius (body of norms which is the most important reference as regards food).

²⁸ Average August 2013-February 2016.

²⁹ The analysis is restricted to these two oleaginous, due to its relevance and availability of information about prices.

³⁰ The value of liter of equivalent oil (VLAE) represents the value of each product of the oil chain in the equivalent of "refined oil liter".

30. During the 2009-2013 period,³¹ the value the primary producer received for grains sales was the most important element in the price per liter composition of sunflower oil (around 30%).³² The value received by the milling industry for unrefined sunflower oil was around 15%, while the share of the refining stage strongly decreased and reached 3% in 2013. Finally, the value received by the distribution stage was 28%.
31. The milling industry margin increased by 146% in the period, while that of the refining and bottling industry decreased by 73%. At the same time, the commercialization margin increased by 82%.

3.2 Consumer Prices

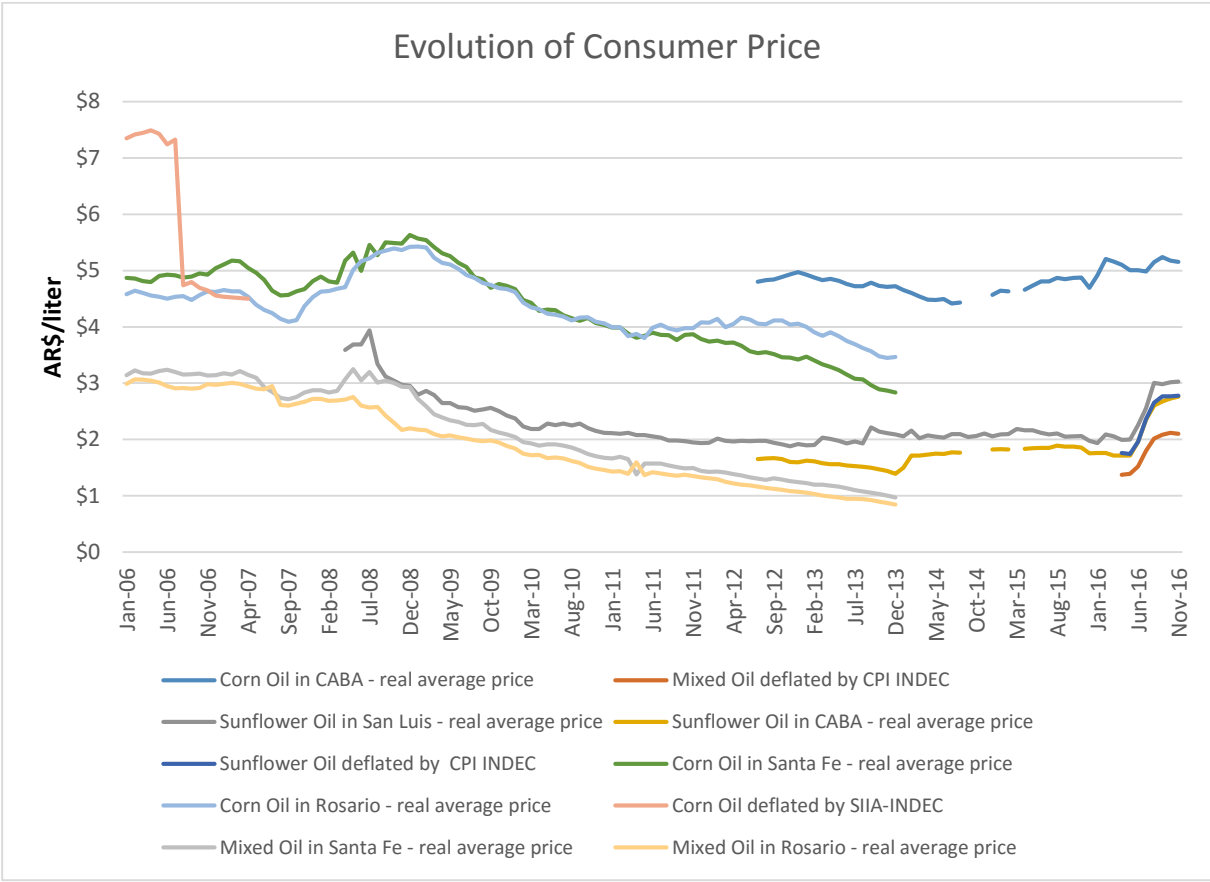
32. The prices paid to the grains' producers showed a strong upward trend, which became more marked since January 2009, in an inflationary context. The evolution of unrefined and refined oil prices paid to edible oil producers followed international prices of each kind of oil. The general tendency has been negative since 2011, not only for soybean oil but also for sunflower oil.³³
33. The international price per ton of unrefined sunflower oil shows an upward trend until the end of 2010. In May 2016, the international price per ton of unrefined sunflower oil was USD 868; the FOB export price for the unrefined oil was of USD 800 per ton and that of the refined oil was of USD 841. In the domestic market, the price for the sunflower unrefined oil reached a value of USD 818.8 and that of the refined sunflower oil was of USD 982.3. At the same time, the value of the ton was USD 715 for the soybean oil and USD 889 in the case of corn oil.
34. The evolution of consumer prices since January 2006 to November 2016 (measured in real values) in the domestic market for refined oil can be seen in Graph 2. It is observed that up to May 2016, prices did not generally increase. The price of corn oil increased more than the price of mixed and sunflower oil, these last two regulated within the framework of the Oil Trust (*Fideicomiso Aceitero*) and included in the Program of Controlled Prices (*Precios Cuidados*).

³¹ Due to the lack of systematized information, it is not possible to do an updated analysis for the years 2014 and 2015, or before 2009.

³² The analysis is restricted to sunflower oil because of its relevance in local market consumption

³³ It should be highlighted that, throughout the analyzed period, soya oil exports paid an export tariff of 32%, which decreased to 27% in December 2015.

Graph 2. Corn, Sunflower, and Mixed Oil Prices – Constant Argentine Pesos per Liter (January 2006 – Nov 2016*)



Note (): The series are incomplete for the analyzed period due to lack of public information.*

Source: Own production based on Romero’s information (2016) and provincial consumer price indexes (Santa Fe, San Luis and Buenos Aires).

35. As of June 2016, however, edible oil prices increased significantly. According to the New INDEC³⁴ CPI, between May and November 2016, the final internal price paid by consumers (measured in real values) for mixed oil increased 51.0%, while sunflower oil increased 59.2%.

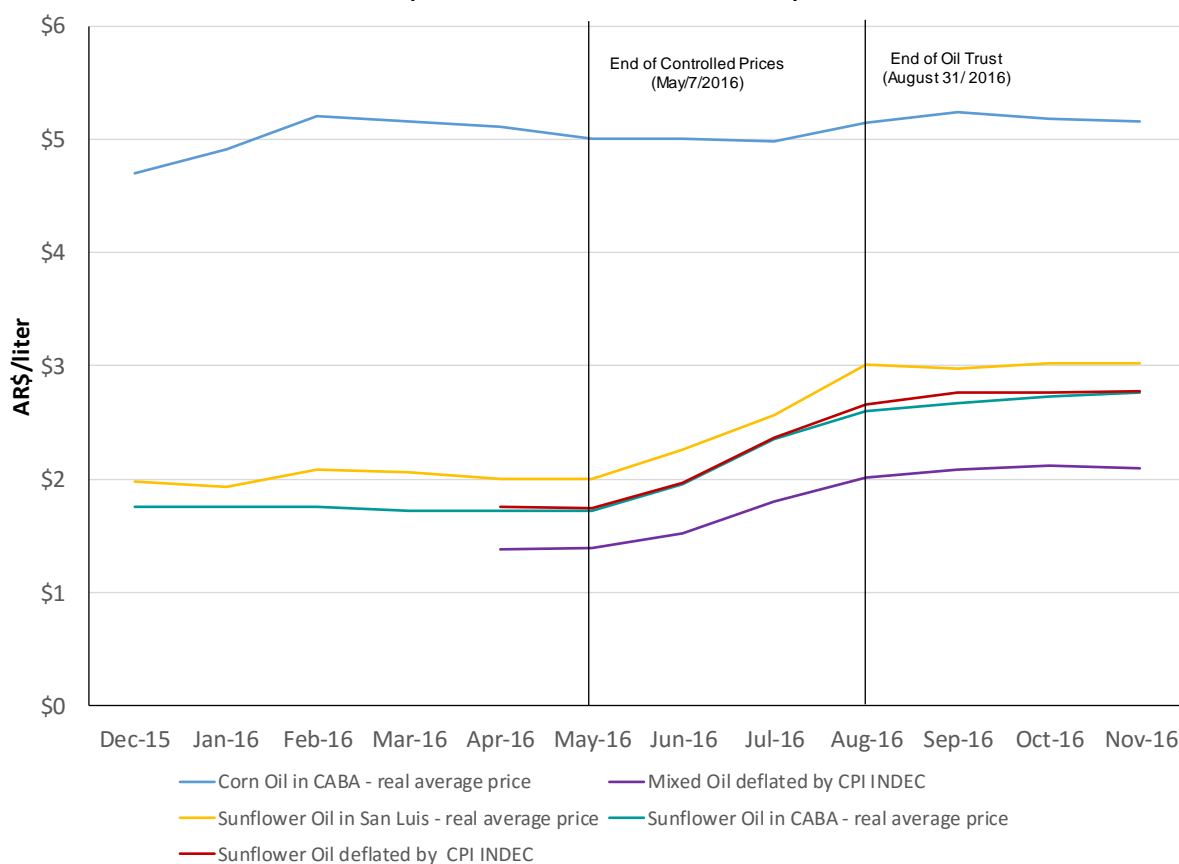
36. At the same time, sunflower oil average deflated prices using the San Luis and Buenos Aires City CPI went up 51.4% and 61.1%, respectively, between May and November 2016. In this period, corn oil average deflated price using Buenos Aires City price index increased

³⁴ National Institute of Statistics and Censuses OF Argentina (INDEC, in its Spanish acronym).

2.9%. Such evolution of prices can be seen more clearly in Graph 3, which only covers the period between December 2015 and November 2016.

37. The main reason which explains these important increases is the end of the Oil Trust, on the 31 August 2016, which was preceded by a transition period that started with the exclusion of sunflower and mixed oils from the Program of Controlled Prices of the Secretary of Commerce, on May 7th, 2016. The vertical lines during May and August in Graph 3 mark these events.

Graph 3. Mixed, Corn, and Sunflower Oils Prices – Constant Argentine Pesos per Liter (December 2015 – Nov 2016)



Source: Own production based on Romero's information (2016), INDEC and provincial consumer price indexes (San Luis and Buenos Aires).

3.3 Price Regulation Policies

38. Over the last decade, the country went through an inflationary process with an upward tendency in prices, particularly, in food and drinks.³⁵ In this context, the National Government sanctioned a series of measures with the purpose of maintaining consumers' purchasing power. As regards edible oil, the carried out measures were the following:

- a. As of May 2007 the Government established sales prices for the public for bottles of up to 5 liters of mixed, soya and sunflower oil.
- b. Between 2008 and 2010 the "private self-compensating mechanism" was implemented, a system instrumented through a private trust with state control, from which the oil subsidies were no longer paid by the State and became a responsibility of the edible oil industry.
- c. From 2010 up to August 31st, 2016, the "Trust Fund for compensation of domestic consumption" was applied ("Oil Trust"). Within the framework of the agreement, the trustors are the soybean and sunflower primary products' exporting companies; the beneficiaries are the industries supplying oil to the internal market, and the trustee is the Bank of Galicia. The Trust established that:
 - i. The oil volumes which the supplying companies destined to the domestic market could neither be lower than 500 million liters per year, nor lower than 42 million per month.³⁶
 - ii. 1.2% of all Argentinean exports of soybeans and pellets of soybeans and sunflower made up the Trust. These resources compensate the suppliers (beneficiaries) of edible soy, sunflower and mixed oils sold in bottles of up to 5 liters in the domestic market for the difference between the FAC price of refined oil (published by the Agricultural Markets Department - DIMEAGRO) and the supply price in the domestic market (base price fixed by the former Ministry of Economy),³⁷ multiplied

³⁵ Inflation between January 2006 and May of this year, measure by San Luis' CPI, was of 922%. The registered increase in Food and Drinks was of 1075%.

³⁶ The June 2008 agreement was originally effective until December 2015 but then it was prolonged until 31 August, 2016.

³⁷ The FAC price (Free Alongside) is the same as the FOB price less "fobbing expenses" (such as export tax, loading and unloading costs, use of pier, among others). The calculation is carried out in US dollars and its result is converted into Argentine pesos by means of buyer exchange dollar rate of Banco de la Nación Argentina.

by the respective physical quantities produced in the domestic market, for which compensations have been requested, that is, the amount of refined oil used for the production of edible oil.

39. According to the Oil Trust Managing Board, sales prices of sunflower, soya and mixed oils would be below the market value which would guarantee the supply. The difference covered by suppliers to keep the oil price at the subsidized price since April 2008 to December 2015 was USD 1284 million. In 2014 the CIARA considered that the Argentinean oil was sold at 60% below the international price, so that the impact on the domestic price of the oil trust was similar to what would be observed with an export tariff.
40. It is important to highlight that the existence of the Oil Trust generates an adequate space for the exchange of information and division of the market among competitors within the oil producing market. Mechanisms of this kind may result in instruments which facilitate collusion in the market.

4. Conclusions

41. The findings or results obtained by the consultant which are most interesting for the CNDC are presented in the following paragraphs.
42. The results show that the level of concentration is low/moderate in the relevant markets analyzed. Therefore, this does not seem to be a problematic factor from the point of view of antitrust. The sales prices in each link of the oleaginous complex value chain show evolutions similar to the international prices, with exception of the sales prices to the public of refined sunflower and mixed oils bottles, which were regulated by the National Government until August 31st, 2016 through the Oil Trust.
43. The effect of the Oil Trust as a price regulatory mechanism during the period studied in the report and the inclusion of products until May 2016 of the Controlled Prices Program did not allow to analyze the suppliers' behavior through the prices of the main products. In this context, it becomes relevant to thoroughly analyze the evolution of edible oil prices after such event.
44. Likewise, and along with the previous point, it becomes relevant to analyze the commercial practices of the retail distribution chains, taking into account their buying power.