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**"GOVERNANCE STRUCTURES IN THE ARGENTINE CHICKEN INDUSTRY".**

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Area 3. Effective Food Chain Management.

## **1. INTRODUCTION**

Since the beginning of the process known as “industrial aviculture” (1960), Argentina has registered sustained growth in production, consumption and exports of avian flesh. This growth was important during the 90’s as a consequence of a direct price transfer due to technological and organizational improvements achieved in the sector. These improvements were due to investments in state of the art technology, genetic improvement, the use of better raw materials and organizational innovations. In addition, Argentina has a status of Country Free of Avian Flu and Newcastle.

Global demands and their changes require the correct coordination and alignment of the business from R&D to the consumer. In this way the businesses incorporate technology, resource management and alliances in order to guarantee the consumer what he/she demands. Knowing these major demands makes the specific assets involved in the whole chain larger. This was exactly what the chicken industry has performed: Trying to adapt the production to local and global demands not only investing in new technology but also organizing and coordinating the value chain; in other words, incorporating specific assets.

Williamson (1996) shows the responsibility of the transaction costs as the levels of the specific assets change. This analysis defines three ways to govern transaction costs: The market, the firm or hierarchy and contracts or hybrid forms, based on the level of specificity of the assets. As the number of specific assets rises, the inability of the markets to handle adapting to them is reflected in a rise in transaction costs. After reaching a critical level of asset specificity, the lower costs shift from the market to the contracts or hybrid forms as the specific assets continue to rise; later, the demand for more direct controls can only be satisfied through internal organizations or hierarchies.

Based on this theory, it is possible to ask, “Why have the chicken companies adopted different governance structures?”

The objective of this paper is to identify the different governance structures in the chicken industry. The secondary objectives are: a) identifying the patterns of the companies that influence the election of the governance structures, b) describing the Argentine chicken agribusiness and its participation in world commerce, and c) identifying the types of specific assets in these agri-food business.

This paper follows describing the methodology and the theoretical framework. Then, it characterizes the Argentina chicken agribusiness, following with the multiple-case study. The paper is finished with the discussion and conclusions.

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## **2. METHODOLOGY**

Methodologically, this paper has two approaches: the study of aviculture in Argentina in general and the study of a case in particular.

The study of the sector is based on primary and secondary information sources, interviews with experts in the sector (producers, industrialists, chamber representatives, etc.) and bibliographical search. We shall try to understand the motives behind the different institutional changes from a macro perspective in order to determine whether these contributed to the sector's competitiveness.

To understand the reasons for the use of different governance structures we shall conduct a multiple case study involving three businesses, the names of which shall be kept confidential. This multiple case study will serve to test the theory (Stems et al., 1998) formulated in an el Williamson's previous chapter (1996). According to it, case studies are used to determine whether the theory stands under specific conditions and parameters in a given case. The necessary information was obtained in interviews and by means of a pre-designed questionnaire with closed questions for all three businesses.

## **3. THEORETICAL FRAMEWORK**

The theoretical framework is the New Institutional Economics, especially Transaction Cost Economics (TCE) and the Theory of Dynamic Capabilities. The analysis is focused on the institutional arrangements (IA) which determine how the agents involved cooperate and operate in the development of a certain activity (Mizumoto & Zylbersztajn, 2006), in this case, the chicken industry.

In the analysis of an economic system, institutional environment and its enforcement are as important as the way in which organisations develop in that environment (Palau & Jatib, 2003). Besides, firms that have the function of producing –neo-classical theory– and transacting –neo-institutional theory– require a certain degree of technology and organisational tights to carry out their activities. Organisations buy or produce the goods they need to produce their own goods or services, considering (at least for the TCE Theory) on transaction costs. Organizations thus appear as an organisational structure rather than a technological function. The cost of the price mechanism, the cost of the market –the transaction cost– is what leads to the way of governing the transaction.

Transaction costs depend, among other things, on the institutions governing a country, system, region or specific sector (North, 1990). Institutions are the rules of the game in a society (North, 1990), country, sector, etc. They are the laws, executive orders, National Constitution, regulations, etc. –formal institutions–; they are also the culture, tradition and habits of the sectors analysed –informal institutions. Williamson (1985, 1993) considers institutions from a “microanalytic point of view” as being “Governance Structures or Institutions” –Market, Hybrids and Hierarchies–, that should be used to identify, explain and mitigate any form of contractual risk. The efficiency of the governance structures is the result of the alignment of the transaction costs with the correct governance structures (Zylbersztajn, 1996).

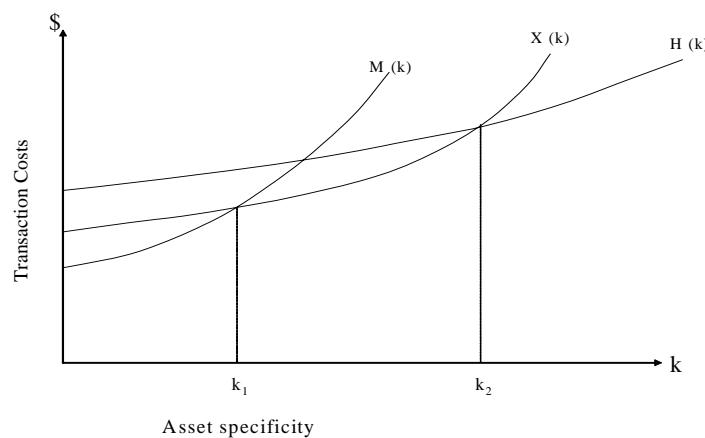
According to Williamson (1993), the transaction depends on three variables: uncertainty, frequency and asset specificity. Although uncertainty and frequency are very important for the companies on the decision of which governance structure to choose, this paper focuses only on the asset specificity variable. This variable gives “rise to bilateral dependency, whereupon what may have been a large numbers supply condition at the outset gets transformed into a small numbers exchange relation thereafter” (Williamson, 2002:107).

Asset specificity has reference to the degree to which an asset can be redeployed to alternative uses and by alternative users without sacrifice of productive value (Williamson, 1991). There are six main types of asset specificity: a) site specificity, b) physical asset specificity, c) human asset specificity, d) brand names, e) dedicated assets, and f) temporal specificity (Masten et al., 1991). Origin and quality certifications represent a mix of all these types of asset specificity.

Williamson (1991) states that asset specificity creates bilateral dependency and poses added contracting hazards. The common consequence is a condition of bilateral dependency builds up as asset specificity deepens. Not only the supplier would lose the productive value if he gives alternative uses to these assets, but also the buyer only would buy the good or service from the market paying a higher price (Williamson, 2003). As a result, highly specific assets could represent sunk costs that have relatively little value beyond their use in the context of this specific transaction. Hence, identity matters as investments in transaction-specific assets increase, since such specialized assets lose productive value when redeployed to best alternative uses and by best alternative users (Williamson, 1991).

Figure 1 shows that under low asset specificity, the spot markets (M) are the most attractive governance mechanism because their transaction costs are the lowest. Under very high asset specificity, i.e. if product-specific investments are needed, a hierarchy (H) is most suited (based on Williamson, 1993; Zylbersztajn, 1996; Hofstede, 2004). The intermediate form is the typical co-ordination mechanism (X) based on contracts, trust, relational network, leadership and formal government, what is known also as netchains (Lazzarini *et al.*, 2001; Menard, 2003). In other words, high asset specificity requires strong contracts or internalisation to combat the threat of opportunism or high levels of transaction costs.

**Figure 1. Governance structures as a function of asset specificity and transaction costs.**



Source: Williamson (1993) and Zylbersztajn (1996).

In a similar way, Institutional Arrangements (IA) choice considers incentive and control levels needed to organize production (Mizumoto & Zylbersztajn, 2006). Market arrangement offer more incentives. However, the discipline to perform the deal depends on the existence of potential substitutes. As much as control is needed, firm chooses contractual arrangements because enforcement is possible by litigation threat. If this mechanism is not efficient or very expensive, firm may internalize the activities to apply fiat-power to organize production. In this case, firm chooses hierarchy arrangement motivated by better control, at cost of lower incentive than market arrangements. When transaction frequency is high, firm has incentives to internalize sequential contracts, then, hierarchy arrangement may take place.

Finally, North (1990) introduces the notion of historical time in his analysis of institutions and of economic performance. According to him institutions and organizations learn from the past, since the present and the future are a consequence of the continuity of institutions in society. He

also introduces the notion of “path dependency” to provide history with the conceptual framework in its predetermination of the present. Path dependency and history are paramount to explain institutional and organizational development.

Matching the concept of governance structures and path dependency, culture (informal institutions) plays an important role explaining why companies follow different governance structures in order to carry out their trade of goods and products. It would be possible that people (CEO’s) continue governing their transaction using a special structure, spite that they know there are other possible alternatives. Williamson (2000) states that there are much less changes in a institutional level than organizational and technological. Path dependency though is an important variable to take into account when we want to understand why companies use different governance structures.

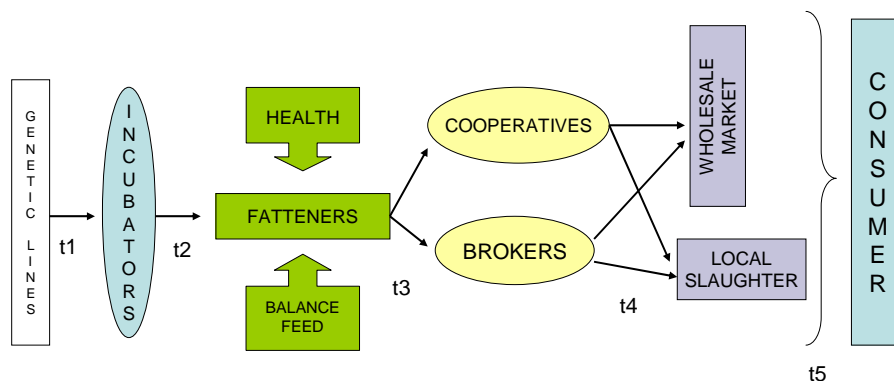
#### 4. CHICKEN AGRIBUSINESS IN ARGENTINA

Poultry production in Argentina goes back to 1857. By 1945 there was already an important poultry population, with a semi-industrial exploitation concept and low specificity levels, with pedigreed mother lines and some double-purpose cross breeding: hens for egg production and chickens for consumption. They were fed with feed mixes based on grains and raised in semi-freedom on pasture land.

Commercialization was organized through storage facilities and consignments represented by individuals or organized in cooperatives. Most of the stored goods ended up at the “**Mercado Concentrador de Aves y Huevos de la Capital Federal**”, where the most important wholesalers operated. Here most of the products were prepared, eggs were selected and prepared, and classified for consumption, and live five-month-old chickens were sold with a weight of five pounds; so were other kinds of birds. Upon request, chickens were slaughtered and plucked; no evisceration took place.

This structure continued into the early 1960s, with slight growth and progressive organization of the production. Chicken fatteners had invested in sheds, mainly in the Argentine agricultural production area (provinces of Entre Ríos and Buenos Aires) in order to gain easy access to the feed necessary for chicken production. In Figure 2 we can see the organizational structure of aviculture in the 1960s. By then there were already incubator businesses that supplied baby chicks (hybrid chickens). These were bought (t2) by the fatteners, who fattened them by purchasing balanced feed and contracting veterinary services (health). Once fattened, the chickens were sold to middlemen or cooperatives (t3), or to brokers who visited the areas of production or were located near the large consumption centers.

**Figure 2. Organizational Structure of Aviculture in the 1960s.**



Source: Authors.

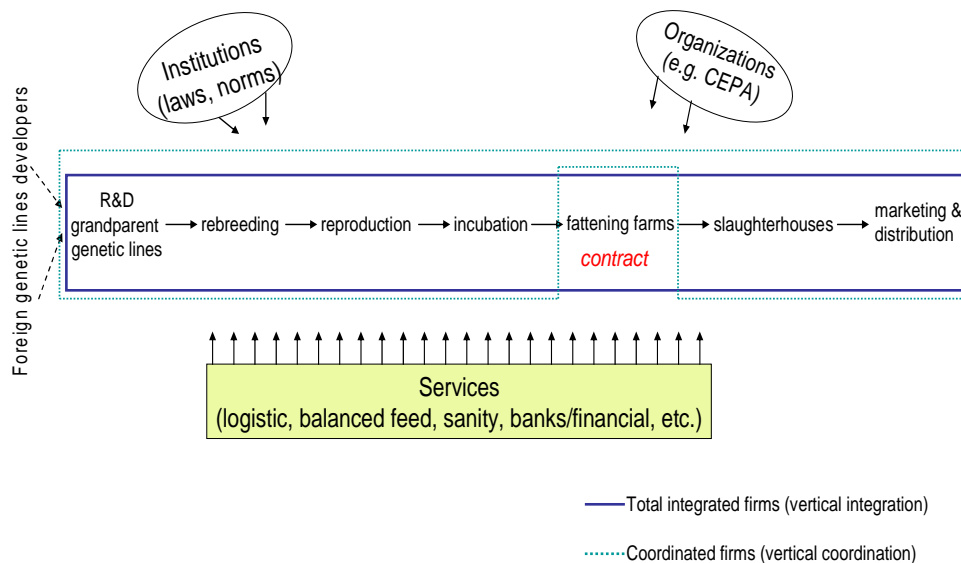
Within this organizational structure there existed risks inherent to production/fattening, risks related to acquiring or selling products, and financial risks. The assets involved did not have high specificity: specificity was mainly given by the baby chick (physical asset specificity), the fattening know how (human asset specificity) and the area of production (site specificity).

However, the market governance structure generated very high micro transaction costs (at organizational level), the product of buy-sell uncertainty and price fluctuations, and of opportunistic actions. Normally the chicken fattener had the least amount of information in the chicken chain and suffered these transaction costs most. In addition, at technological level, fixed and variable costs were also high, since production efficiency was low (approximately 11 lbs of feed-2.2 pounds of chicken) and there were high health risks (mortality) and low scale. Summarizing, this organizational design generated high costs and diseconomies of second and third order, and, although efficiency was greater than that in the 1940s/1950s, total production costs were still high and generated a high price for the local consumer and a loss of competitiveness globally.

The process of vertical integration and coordination with the chicken fatteners started in 1976. Whoever wanted to be competitive had to seize the stages of the productive chains and sell a finished, eviscerated chicken. The fatteners had the production know how and the infrastructure (the sheds), but they could not afford new breeding of chicks due to economic or financial incapacity. In addition, the commercial system based on “storage-Consolidating Market-open air slaughter” could not withstand the larger volume, in quality and quantity, of the domestic demand; however, neither could the industry withstand this level of costs if it were looking for more competitiveness before its main competitor, beef.

Thus, between 1976 and 1983 the sector was partly vertical integrated, with some businesses producing the fertile eggs, the baby chicks, the feed, the slaughter and the distribution, while others opted for coordination, signing contracts with the fatteners to later slaughter and commercialize the chickens (see Figure 3). Whatever caused a “better” governance structure in each business (vertical integration or coordination) depended basically on that firm’s culture (e.g., businesses that were originally fatteners chose to integrate vertically rather than coordinate).

**Figure 3. Organizational designs in the Argentine poultry industry.**



Source: Authors.

The first case appeared when the agents internalized more than one stage of the chain. For instance, fatteners who had fattening sheds later acquired incubating plants and then built meat processing plants. This is the case of Rasic (Cresta Roja) who was “forced” to choose this system due to the low number of fatteners in its production area. In addition, this business had started as a chicken fatterer and this path dependency conditioned it to continue fattening instead of signing contracts with other agents.

Vertical coordination, on the other hand, appeared in the case of chicken fatteners with low financial and managing capacity for integration and who wanted to continue in this activity. Thus, they tried to sign agreements or contracts with agents above and below the chain (slaughterers and suppliers of baby chicks). In this case, the chicken fatterer signs a contract with the “coordinator”, by which the former has the obligation to provide sheds, handling and energy (electricity and gas), and the latter must provide the baby chicks, the feed and the health care. At the end of the fattening process, the fatterer receives a price per fattened chicken, adding bonuses or penalties depending on the efficiency of feed conversion, the use of energy or the mortality percentage. This makes it possible for the fatterer to have a greater incentive to produce efficiently and therefore have larger returns. At the same time, the coordinator lowers its production control costs and insures a greater number of birds to slaughter. This is the case of Las Camelias or Tres Arroyos<sup>2</sup>.

On the other hand, the sector started to incorporate greater amounts of technology to the processes (reproduction, incubation and fattening) and to the products (slaughter and finishing of the chicken). In addition, the slaughtering capacity of the meat processing plants was increased.

In conclusion, changes may be summarized as follows: a) an organizational redesign (lowering transaction costs, second order economy) and b) the construction of slaughter and refrigeration plants (lowering industrialization costs, third order economy). This new productive concept, which lowered the final consumer price even more, consolidated the habit, raising consumption to about 31 lbs.

This modernization of the organizational and technological structure of the chain started in the mid-1970s and became consolidated in the 1990s. Vertical integration or the contracts served to safeguard the specific assets involved (genetic development or breeding, fattening, slaughter and distribution) and the total costs (transaction and transformation costs) decreased, while consumption went from 22 lbs. in 1970 to almost 40 lbs. per inhabitant per year at the beginning of the 1990s, a product of the lower prices of chicken at the supermarket.

In the mid-1990s there were innovations, mainly at institutional level, which impacted on the Argentine poultry industry. Convertibility, State deregulation, privatizations and the free market (lower import and export taxes) generated a greater institutional stability and the possibility for the industry to introduce modern technology and improve the organizational model.

Technologically, the leading companies that had more than one activity in the chain gave priority to investment in specific assets: the construction of processing plants following international quality standards and the purchase of reproduction grandparents in order to generate a greater fattening efficiency by means of genetic improvements (conversion rate). At the same time, they developed contract models with the chicken fatteners, gaining greater legal certainty regarding the property of the baby chick (by avoiding possible opportunistic sales of the asset to other competitors), generating a larger production scale with lower investment at the fattening stage, and allowing the chicken fatterer to produce without buying baby chicks or supplies (feed and health services), while at the same time guaranteeing the sale of the fattened chicken (see Annex 2).

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<sup>2</sup> See Annex 2: “Combination of the shared revenue contract and the combined contract”.

The sources consulted state that the development of the grandparent and parent genetic lines, incubation and slaughter are the processes that are hardest to control and that must be internalized in the business (greater specificity of assets and use of vertical integration, see Williamson 1996). Distribution in some businesses is their own and in others is done by means of contracts with distribution centers.

Therefore, the industry shifted from an organizational design with high transaction and production costs in the 1960s to a new world class business design (price and quality). Thus the habit of chicken consumption was consolidated, increasing consumption in the domestic market to over 55 lbs./inhab./year and the incipient export of chicken parts, mainly chicken claws and giblets, which allowed it to come in contact with the markets.

However, the subsequent economic recession of Argentina (1998-2002), which caused a fall of consumption and production (see Annex 1), and a global market that demands more and more beef, led the local poultry industry to look for new competitive advantages.

From 2000 on, the fatteners and industrialists grouped into two private chambers (CAPIA and CEPA, respectively) started working on medium and long term strategic aspects for the entire sector. The most important were: a) the export of fresh chicken and chicken pieces, b) the defense of Argentine industry against dumping actions by the Brazilian poultry industry, and c) the health condition of the Argentine poultry industry. Details on each of these aspects are provided below:

- a) In order to make chicken exports possible, the processing plants had to improve their quality and food safety. Institutional support was obtained to finance the industry with this objective in mind. At present, 50% of the plants are enabled for export.
- b) During 2000 the industrialists grouped in CEPA requested from the national government anti-dumping measures against the Brazilian poultry industry, generating a ban on the entrance of parent lines, fertile eggs and baby chicks from Brazil into Argentina.
- c) At the same time, the sector and the government worked towards the eradication of the two main avian diseases, Newcastle and Avian Influenza, and the establishment of a free status regarding both of them.

At the beginning of 2002, as convertibility was abandoned, the poultry industry faced two scenarios: a lower domestic consumption—the product of a decrease of the purchasing power due to the devaluation of the peso—and the possibility of exporting fresh chicken and chicken pieces. In spite of the institutional crisis (and the great uncertainty that characterized Argentina in those times), the sector had the following opportunities:

- asymmetrical *pesification* of their debts (most plants built and investments made during the 1990s and beginning of the 2000s were liquidated thanks to this differential treatment of credits),
- export rights or withholdings on farming products (which generate a lower price of corn and soybean with respect to external markets and, therefore, lower production costs),
- lower labor costs (due to devaluation),
- devaluation of the currency (which generates a competitive advantage regarding exchange with respect to other world competitors).

Although this situation was true for all meat-producing sectors (bovines, hogs), the poultry sector was the only one that managed to take advantage of this change, basically due to two factors that had taken place in past decades: a strong upgrade of technology of the sector during the 1990s (by means of investments) and organizational structures aligned with the institutional and technological environment, both within the businesses and between businesses, which

generated lower transaction costs and a sector with common lobbying and objectives among all the participants<sup>3</sup>.

It is important to mention that the development of contracts among the parties consolidated as time went by, minimizing opportunism and improving the rights and obligations of the parties through greater controls and incentives. There are seven different contractual arrangements: “Open Account” (Cuenta Abierta), “Guaranteed Prices” (Precios Garantizados), “Fees” (Honorarios), “Shared Revenues” (Ganancias Compartidas), “Feed Conversion” (Conversión Alimenticia), “Combined” (Combinado) and “Shared Revenues/Combined” (Ganancias Compartidas/Combinado) (see Annex 2).

The result is a greater production and export of poultry products and a reduction of the price of the product at the supermarket in comparison with other meats (see Annex 1).

## **5. MULTIPLE-CASE STUDY.**

### **5.1. Introduction.**

In order to supply foreign and domestic markets, the leading agro industrial companies in the Argentine poultry sector have formed a totally integrated or coordinated, highly technical, vertical structure. They constitute full-time avian industries and perform the different tasks concerning poultry either by internalizing the activities or farming them out to different agents. These activities entail all processes carried out in farms, balanced feed mills and incubation plants, the acquisition of grandparent genetic lines, rebreeding, reproduction, incubation, fattening farms, processing of the animals in slaughterhouses, and storing, marketing, distribution and sale of the product in national and international markets. These processes, the technologies involved, and the knowledge of the markets and their demands constitute highly specific assets that are part of this system.

The chain’s great coordination or integration is due to the genetics and poultry producers’ greater focus on the external consumer, avid for products with true quality and information. However, the use of the two main governance structures may be due to the origins or path dependency of the businesses, and based on the governance structure that generates lower transaction costs. Some companies started raising and fattening chickens by means of completely integrated structures. These companies have maintained their way to conduct their transactions or their business to a certain extent. On the other hand, some businesses arose or expanded at a different period of the industry (mainly during the 90s) and developed hybrid governance structures or contracts.

There is therefore a bilateral dependency between the poultry businesses and the breeder-producers; the latter establish this dependency relationship by means of durable, specialized investments. Such a dependency presents contractual risks based on asymmetrical information and incomplete contracts, although the frequency of the transactions increases trust among the parties and consequently lowers transaction costs.

Below is a description of three case studies of poultry producing and processing businesses. Among them they are responsible for 50% of the total chicken produced in Argentina. The companies themselves have provided the information, asking that their names be kept confidential.

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<sup>3</sup> The poultry industry with CEPA representation has been one of the few sectors in Argentina that has managed to develop a 10-year strategic plan (2000-2010). This has given the sector predictability, greater representation before the government and interest groups (lobbying power) and a collective strategy both for the domestic and the external market.

## 5.2. Company A

“A” is a business in the province of Entre Ríos. Founded in 1936, it made the leap from manual to mass production in the 1980s, acquiring its first processing plant in 1986<sup>4</sup>. Other activities of the business included grain production, cattle raising, milk and cheese production and, to a lesser extent, the production and sale of eggs. Except the cattle raising activity, all other activities have been discontinued.

“A” produced mainly baby chicks; as the organizational changes of the poultry industry took place in the 1970s it decided to “grow forth” by means of governance structure “contracts”. It has a grain storage and balanced feed processing plant, two egg incubating plants, a model processing plant at national level, with cutting edge technology, with 8 nuclei of its own for reproduction (Breeders) and over 350 nuclei for the breeding of broilers, ready for slaughter. The Grandparents are obtained from Brazil, the US and Chile with standardized genetics and constant adaptation to improvements that may be implemented. In this way, the factor that limits the total productive capacity is the number of chickens that the nuclei can produce (i.e., the number of baby chicks to be fattened), since the rest of the productive centers show idle capacity. Commercialization takes place through 14 business-owned distribution centers (vertical integration) located at the company’s processing plants in Entre Ríos, in Buenos Aires, in Ayacucho, in Mar de Ajó and in Valeria del Mar.

The following Table shows the company’s production and sales.

**Table 1. Company “A” - Production of Baby Chicks and Annual Sales.**

Year	Production of baby chicks (x 000)	Annual Sales(US\$ x 000)	Production Variation (%)	Annual Sales Variation (%)
2000	14,000	35,000	--	--
2001	14,500	34,000	3,5%	-3%
2002	14,000	16,202	-4%	-18%
2003	15,000	22,569	7%	39%
2004	18,000	30,000	20%	33%
2005	22,500	45,000	25%	50%
2006	25,500	50,000	13%	11%

Source: data provided by the company

“A” adapted constantly to the institutional and commercial changes of the 1990s and has tried to direct part of its sales towards the export market. At present, the company exports 40% of its production as whole chickens to the Middle East and claws to China; it is also one of the few Argentine businesses that hold accreditation to enter the European Union. The other 60% is sold in the local market, most of it as whole chicken, some of it as chicken pieces; in the year 2000 the industrial stage began with the production of breaded chicken patties.

“A” relies on the pillars of quality and efficiency to determine its competitive advantage. At the processing stage it uses HACCP as an additional tool to insure the quality of the processes. In addition, it has developed a complete program of animal traceability, from R+D to the supermarket shelf. The company has obtained ISO 9000 certification, GMP (Good Manufacturing Practices), BRC (British Retail Consortium), IFS (International Food Standard) and is about to obtain ISO 22000 certification. It has also been certified for *halal* chicken processing (a Muslim certification) in order to access Muslim markets.

To sum up, it has two governance structures: contracts and vertical integration. The contracts operate at the stage of fattening the baby chicks, while vertical integration takes over in research

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<sup>4</sup> That first plant processed 3,000 animals per hours and employed 150 workers. At present, the plant processes 10,000 chickens and employs 250 people.

and development, reproduction, incubation and processing. The reason for using different governance structures is the greater control that vertical integration offers at the more critical points: grandparents, reproduction and processing. On the other hand, the company states that investing on sheds for baby chicks involves a substantial investment that would preclude investing in other aspects, at present considered of greater priority, such as a larger number of reproducers and incubation plants and a greater processing and distribution capacity. There is also, however, a historical question or path dependency of the business as a producer of baby chicks and not as a fattener of these.

### 5.3. Company B

This company is an agro industrial business, a leader in the poultry sector, founded in 1958. The brand that it developed is well known in the domestic market as well as in other markets. At present it exports to countries in South America, Central America, Africa, Europe and Asia.

In order to supply its clients in different countries and in Argentina in a timely fashion, the company has decided to develop a totally integrated and highly technified organizational structure (although there is a percentage of fattening farms under contract) that employs 2,000 people. The company owns grain storage facilities and balanced feed manufacturing plants; it has grandparents' genetic lines, a reproducers' farm, and the development of hybrid chickens. Most of the fattening farms also belong to the company, as does the slaughtering and processing plant.

Production is 150,000 tons a year, by means of the production of over 70 million baby chicks (approximately 150 million dollars annual sales). This production takes place under strict biosafety conditions in all processes, applying certifications such as GAP, GMP, HACCP and traceability. Slaughter and cutting up take place in two plants with a capacity of 9,000 chickens per hour each. There are some differences in the byproducts and processing of the chickens in each of the plants after that stage.

Whole chickens, chicken pieces and processed chicken (patties, hamburgers, etc.) are later sent to the company-owned distribution center (which maintains vertical integration in distribution). This makes it possible to be very efficient in the Just in Time (JIT) of distribution to the different markets served by the company. Sales are made directly to local wholesale and retail supermarkets by means of rented trucks with strict control of the cold chain.

To sum up, company "B" is basically vertically integrated, although 35% of the chicken production takes place under contract. The sources consulted mentioned that this governance structure is due to the fact that, at the time of the organizational change of the poultry industry, the company was a producer/fattener of baby chicks and continues to respect that model, having also integrated the other stages of the chain.

### 5.4. Company C

"C" is an Argentine company with 40 years' experience in the poultry market; in the last few years it has managed to become one of the leading companies in the industry. Its greatest participation is in the local market but it also exports to the five continents; it processes an average of 300,000 birds daily and employs 2,500 workers. These achievements are the result of investments in technology at the different plants, the hiring of professionals, the constant training of its personnel, and the acquisition of modern work methods in order to innovate and improve the competitiveness that the markets require (specific assets).

The company started as a "stall vendor" at the Chicken Consolidating Market in Buenos Aires; in 1962 they installed a plucking plant and in 1965 they moved to a city in the province of Buenos Aires to produce and process chickens.

Since 1962 the company has developed grandparent reproducers of the Cobb line. Because of the international success of the Cobb 500 line, the need arose in Argentina to develop a production structure of the highest technological and health level. A site was chosen in Santa Elena, in the province of Entre Ríos, a highly isolated area away from all pollution. Six farms were built there: two for rebreeding that would supply another four for laying. Within the complex, a balanced feed plant was added to insure all the nutritional requirements, as well as an incubation plant, equipped with the most advanced technology. Both plants make it possible to obtain reproducer chicks of the best quality, maintaining the required standards.

Rebreeding of the parents takes place in company-owned sheds where healthy animals are obtained with an antibody count capable of transferring immunity to the chicks they will produce, a goal that is achieved with the correct Health Plan. The animals are mated and the eggs are later sent to the incubators, also company owned.

Once the chicks are born in the incubation plants, they are transported to the breeding plants in special trucks. These farms, located in the provinces of Buenos Aires and Entre Ríos, may be company owned or not (contracts with poultry fatteners). Approximately 70% of the fattening takes place in contract farms. The feed for all the animals of the different stages is prepared by the company itself in mills located near the different production centers.

Once the birds reach the average weight necessary for commercialization, they are loaded and sent to company owned processing plants –one in the province of Buenos Aires and one in the province of Entre Ríos, with a processing capacity of 300,000 animals a day. Both plants are totally automated with state-of-the-art technology and have certification for the most demanding export markets. Exports go, among other markets, to members of the European Union, Switzerland, Chile, Japan and the Middle East. Exports represent 30% of the total produced.

Thanks to integration and vertical coordination, company “C” can apply the concept of traceability. In addition, it complies with national and international norms and certifications of quality and sanitation such as BPM, BPH, SSOP’S, Plan Creha (National Plan for Residue control and Sanitation in Foods), HACCP, IRAM- ArgenINTA Foundation, IMO (certification to export to Switzerland).

Besides its permanent search for excellence in the quality of each of its products, another great advantage of company “C” is its practical and flexible commercialization system, design to offer prompt response to all areas of the country, as well as to all requests coming from other countries. Although its head office is in Buenos Aires, the different offices and company owned sales outlets, strategically located, form a wide distribution network that covers the main local markets. In this way, the different product lines (whole chicken, chicken pieces, flavored chicken, giblets, ready-to-cook dishes, claws, etc.) are marketed through four main channels:

- Great chains of supermarkets and hypermarkets.
- Large and medium wholesale distributors.
- Large retailers and restaurant chains.
- Exports.

To sum up, vertical integration appears mainly at the stages of grandparents, reproduction and incubation, and later in processing and distribution, where control is an important product of asset specificity. There is a contract stage in the fattening of baby chicks. The company started as a chicken distributor, integrating and coordinating backwards, and this path dependency is still present in the company’s philosophy.

## **6. DISCUSSION AND CONCLUSIONS**

Coordination in agribusiness arises as the result of applying different mechanisms that provide the base to satisfy the consumer’s demand, bearing in mind the incentives to obtain the expected

results and the controls of the agents who perform the task. Therefore, in situations of high perturbation-adaptation, hybrid governance and vertically integrated structures are chosen as the best options.

During the 1970s the poultry industry made progress in technological development, decreasing its fixed and variable costs. However, this cost improvement did not allow it to adapt through time to the needs of the global consumer (price and world quality). Evidently, it was the reengineering of the business in the organizational environment and the increase of investment in process and product assets that deepened in the 1990s that allowed it to venture into the world poultry business. This new way to do business not only allowed it to continue investing in technology but also brought about a steep decrease in micro transaction costs and a competitive price of the product, both locally and globally.

In general, with the object of supplying a very competitive external market, national poultry businesses have faced the need to develop certain strategies:

- Guaranteeing the best health standards by isolating breeding and fattening.
- Insuring high quality raw materials for the manufacture of balanced feeds by means of systematic checks.
- Implementing BPM -HACCP- BPA Standards and traceability.
- ISO 9000-ISO 22000 Certification.
- Investing in state of the art technology by means of:
  1. Importing grandparent genetic lines.
  2. Modern vaccination and birthing machines.
  3. Research on avian nutritional needs in order to manufacture the best balanced feed for each stage of development.
  4. Logistics of supply and distribution of these balanced feeds.
  5. Modernization of the breeding barns and slaughterhouses.
  6. Logistics through a network of operators who supervise the maintenance of the cold chain for the products.
  7. Telemarketing and Call Center Services for the internal market, through which orders and customer complaints can be respectively channeled.

These strategies have only been implemented (and expanded through a national strategic plan developed by the sector) because there is great integration and coordination among the different actors of the chain.

The companies described as cases in this paper adopted the different forms of governance depending on their culture and the possibilities at the time when the process of coordination and integration of the business started. Thus, all the companies show a greater or lesser degree of coordination (contracts with the chicken fatteners) and, at the same time, a greater or lesser degree of vertical integration. Vertical integration has meant investing in sheds, but there is capital left to invest in other specific assets, essential for improving competitiveness: genetic improvement, handling improvement and improvement of the processing plants and of distribution.

The current challenge is how to grow further. The demand for avian meat is increasing worldwide, especially from those countries free of Newcastle and avian influenza. The local industry is working at full capacity. Supplying an increasingly demanding external market without neglecting the domestic market implies increasing the number of baby chicks, the fattening farms and the processing plants. This involves two fundamental aspects:

- investments in technology,
- a greater number of chicken fatteners.

If the coordinating industry had to make the necessary investments to increase production — fattening farms— in a country with low access to credit, no investments would be possible in

slaughter and processing plants. Therefore, raising the number of chicken fatteners constitutes the greatest concern of many businesses in this sector.

The future research agenda is: a) to study contractual conflicts between the coordinating companies and the chicken fatteners, and b) to study the processes of organizational change of the Argentine poultry industry based on this greater demand of avian meat worldwide.

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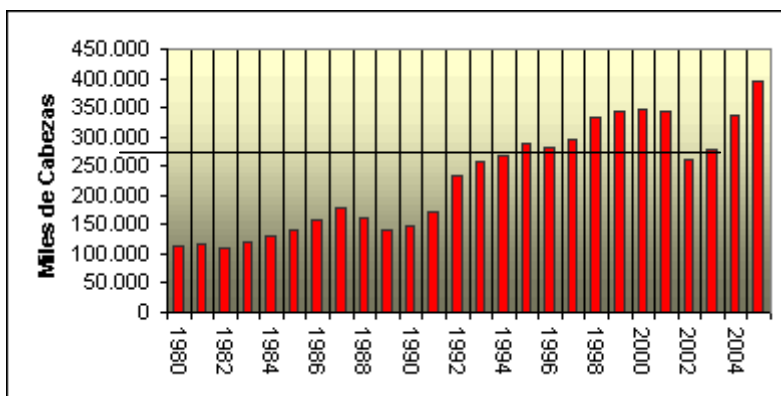
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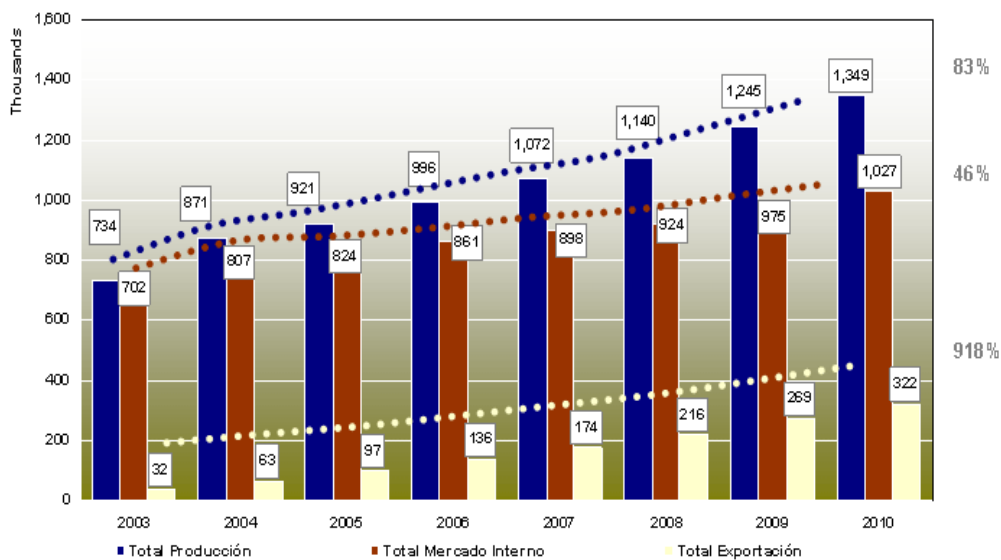
**ANNEX 1. PRODUCTION AND TRADE IN ARGENTINE AVIAN INDUSTRY.**

**Figure A.1. Evolution of avian slaughter in heads 1980-2005**



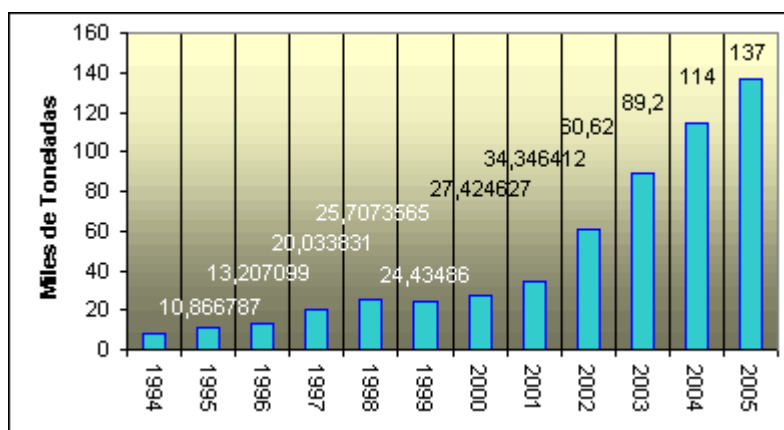
Source: CEPA

**Figure A.2. Production and commercialization of avian meat in Argentina.**



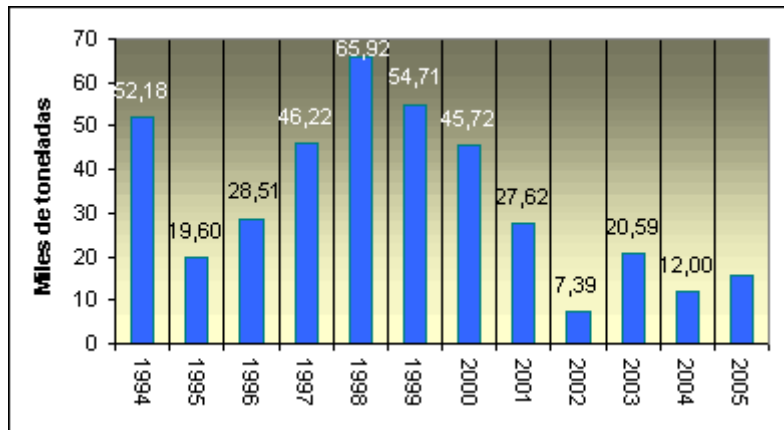
Source: CEPA

**Figure A.3. Evolution of avian exports (in Tons) 1994-2005**



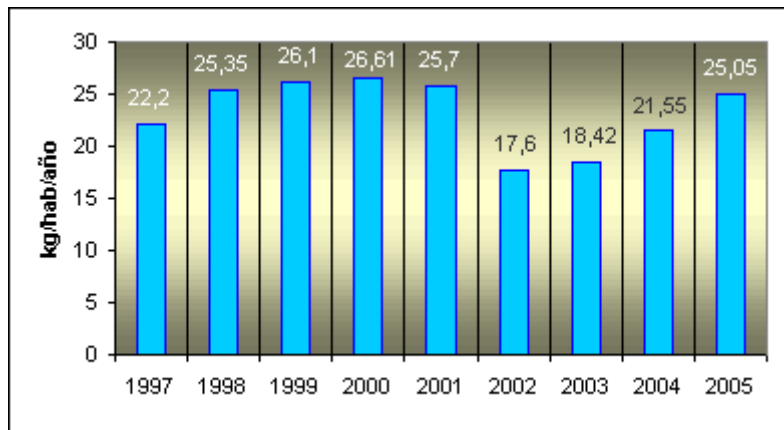
Source: SAGPyA

**Figure A.4. Evolution of avian imports (in tons) 1994-2005**



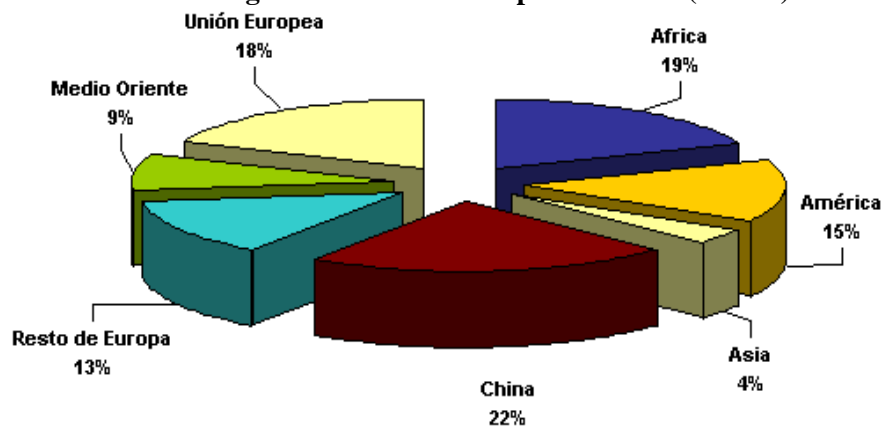
Source: SAGPyA.

**Figure A.5. Evolution of avian consumption (in Kg/inhab./year) 1997-2005**



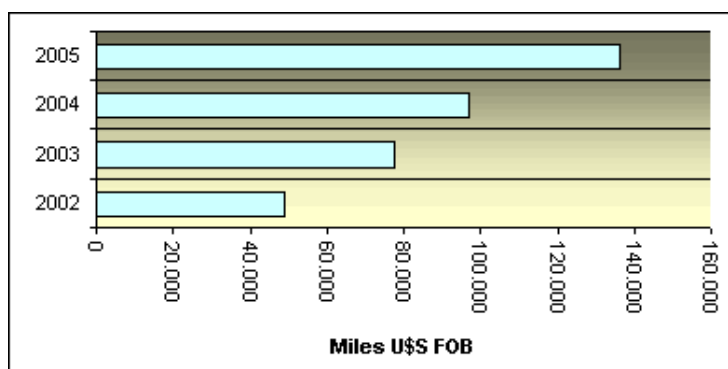
Source: SAGPyA.

**Figure A.6. Destination of Argentine avian meat exports in 2006 (in tons).**



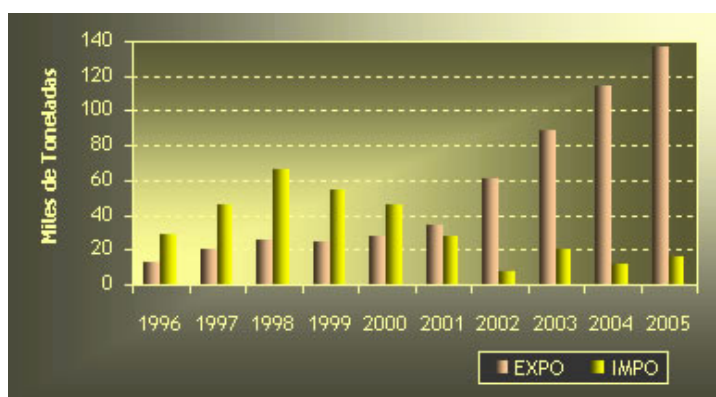
Source: CEPA

**Figure A.7. Evolution of avian exports (in thousands of US\$ FOB).**



Source: SAGPyA.

**Figure A.8. Evolution of Argentine avian foreign trade (in thousands of tons) 1996-2005**



Source: SAGPyA.

## ANNEX 2. TYPES OF CONTRACTS IN THE POULTRY INDUSTRY.

**OPEN ACCOUNT (CUENTA ABIERTA):** the farmers (chicken fatteners) were simply given a loan to acquire consumables, especially balanced feed, baby chicks, and vaccines and other medicines; this alleviated their need for capital. Thus, the farmer contributed the capital for land and improvements, fixed working capital, labor, fuel and other consumables. As the farmer sold the fattened chickens, he paid the debt contracted with the business and an overprice for the financing of the purchase of consumables. Under this type of contract, the balanced feed companies did not participate in the commercialization of the product. At the producers' level, the price of chicken meat was determined by the free play of supply and demand; the producer took the product to market and sold it to highest bidder. Of course, the transaction costs associated with this type of price formation through the market were high.

**GUARANTEED PRICE CONTRACTS (CONTRATOS DE PRECIOS GARANTIZADOS):** the leading company promised to buy the entire production of chickens, guaranteeing at the same time a price per unit. Thus, the risks associated with prices and placement of the product in the market shifter from the farmer to the coordinating company. Under these contracts, when the guaranteed price did not cover the cost of consumables, the farmer received a difference. However, the farmers were still susceptible to the risks of the prices of consumables and the high requirements of capital to pay the coordinating company in case of loss. In addition, guaranteed prices fostered opportunism on the part of the farmers, who produced low quality chickens while the price was maintained independently. The process of price formation of chicken meat at the producers' level is different; it is a price fixed and administrated by the leading integration company that buys the totality of the product. The advantages for the farmer consist in a decrease of the transaction costs related to the process of

price formation; a disadvantage for the leading company lies in the rise of transaction costs due to the farmer's opportunist behavior.

**FEE PAYMENT CONTRACTS (CONTRATOS DE PAGO POR HONORARIOS):** as in the contracts mentioned before, the integrating companies provided all consumables and technical assistance for the fattening of the chickens; the **difference** lay in that **the integrating companies retained the property of the chickens** and the farmers were only in charge of the fattening. This new concept in contracts reduced the risks run by the producers, who no longer became indebted to the integrator for the consumables: once the chickens were sold, the farmer received a fee for each chicken. For the integrator, the disadvantage was that he faced the risks of commercialization, price fluctuations, etc. For the farmer, the disadvantage was that payments were not based on his efficiency and his efforts were not supervised; these contracts stimulated opportunism, since fee payments were made regardless of their performance. The process of forming the price of chicken meat at the producers' level consisted in paying for the service rendered in the form of fees, payment for the service of breeding; that is, what is negotiated in the transactions is the service rendered by the farmer.

**SHARED REVENUES (GANANCIAS COMPARTIDAS):** in this type of contract both parties figure as partners for the benefits, although the revenues are shared unevenly. The revenues obtained by the sale of the birds were shared by both parties after the integrating company had deducted its costs. When there were losses, the integrators absorbed them but raised the prices of consumables unfairly, lowering the amount of revenues to be shared. Another disadvantage for the farmer was that he was subject to price risks and to the risks of the integrator's placing the products in the market.

**FEED CONVERSION CONTRACTS (CONTRATOS DE CONVERSIÓN ALIMENTICIA)** offer an incentive to improve production practices. In addition to performance fees, the farmer received an extraordinary payment (or bonus) based on feed conversion, the pounds of feed consumed per pound of chicken produced. In other words, the farmer received a fee plus a performance bonus; this arrangement precluded opportunistic behavior, since the revenues were directly tied to the farmer's performance. In spite of the performance bonus, the farmer still faced the risks of climatic conditions. The process of price formation in this type of contracts includes a new element: **a mechanism that applies a price formula**. Therefore, there is no longer a uniform price, since this will vary from one producer to another according to the performance of each.

**COMBINED CONTRACTS (CONTRATOS COMBINADOS):** these included fee payments to the farmer, which were adjusted through a performance bonus in order to discourage opportunistic behavior. In this type of contract the objective is to reward the more efficient farmer by means of bonuses and make deductions from the paycheck of the less efficient farmer.

**COMBINATION OF THE SHARED REVENUES CONTRACT AND THE COMBINED CONTRACT:** the coordinating company supplies the balanced feed, the baby chicks, medicines, technical assistance and transportation, and the farmer contributes the farm, the equipment, the labor and other consumables. The chickens belong to the coordinating company. The value of the production is calculated by multiplying the number of pounds of chicken delivered to the processing plants by the unit price; the latter is adjusted by means of a bonus, that depends on the relative performance of the producer as compared to that of other farmers. The cost of the consumables provided by the company is deducted from the value of the production and the difference to the producer is calculated. This way, the opportunistic behavior of the farmer is reduced, as the price of chicken meat is formed based on his performance. In addition, the risk of production is decreased as the farmer's performance is compared to the average performance of the other producers. The formation of the price of chicken meat at the producers' level is established by means of a price formula mechanism. Below is a list of the most common contractual obligations of both parties, which will influence the formation of prices and costs of chicken meat for fattening.