

# THE RECENT PERFORMANCE OF THE AGRICULTURAL SECTOR OF THE PAMPAS: THEIR POTENTIAL AND PROSPECTS. ANALYSIS OF ECONOMIC EXPLANATIONS

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## ABSTRACT

The insertion of Argentina as an exporter of primary products and manufactures of agricultural origin explains the importance of agricultural production in the process of national accumulation. In consequence of this, economic science, from different conceptions, has focused on the study of this sector to know its potential to boost the growth and development of the Argentine economy. As a result of this, when approaching the specialized literature, there is a multiplicity of economic approaches that explain and analyze the Pampas agricultural sector from different perspectives.

From our point of view, the dissent that is verified in the literature on this sector, is related to the way in which economic science addresses the phenomena that constitute its object of study. The aim of the present work consists in making a documentary analysis of the different explanations about the recent performance of the Pampean agricultural sector -specifically, the soy boom-, structuring it in such a way to expose the way in which they approach what they intend to explain. The result of the analysis not only manages to highlight the correspondence between the ways of knowing about agrarian explanations and the epistemological postulates of economic science, but also that which underpins the lack of consensus among specialists to explain the Pampean agrarian sector.

**KEY WORDS:** Economic Development; The Agricultural Sector of the Pampas; Soybeans; Bibliographic Analysis of boom.

## INTRODUCTION

Argentina's participation in international trade as one of the largest exporters of primary products and manufactured goods of agricultural origin determines the importance of agricultural production in the process of national accumulation. Thus, with the interest mainly in the understanding of potentialities of the agricultural production of the humid pampas to

boost the growth and the national economic development, it appears the need to study this sector from the economic theory. However, a first approach to the specialized bibliography reveals that there are different conceptions about the performance and characteristics of the pampean agrarian sector.

Specifically, this distinctive feature is evident in two specific historical moments. First, in the decades of 1960 and 1970 when, after a long period of 'stagnation' of the Pampean agrarian production - from the decade of 1930 until the decade of 1970, an important debate develops among the scholars of the sector with the aim of clarifying the causes of their deterioration, without reaching consensus, which has been recognized by many analyzes that take up this discussion (Sabato, 1987; Barsky and Gelman, 2001). Second, since the mid-1990, but more deeply during the first decade of the new century, when the performance of grain production stands out, but this time by its spectacular growth. Again, it seems that there is no consensus among the authors of the specialized literature when explaining this fact.

From our perspective, the dissent that is verified in the literature about the agricultural sector of the pampas motivates to study the different conceptions, paying special attention to the way in which each one of them approaches the phenomenon that is intended to explain. Thus, our main goal is to shed light on the potentialities and limitations of conventional economic perspectives on the agricultural sector of the pampas to account for its features and recent performance, from a critical perspective regarding to the knowledge method in which they are based.

From our point of view, the lack of consensus in the specialized literature is based, mainly, in that the different positions, when analyzing and characterize the performance of the sector, they build their explanation on the basis of the identification of an explanatory specific engine, according to the general method of knowledge of economic science. In other words, each conception, either to explain a period of stagnation or growth of the pampean agricultural production, after evaluating, implicitly or explicitly, the set of determinations that characterize the behavior of the sector during a given period, they perform hypothesis with the aim of building the explanation. In pursuit of such construction, while some characteristics will have a dominant role, others, in contrast, will be a consequence of secondary or even the first. In this sense, we say that each conception makes a particular cut of the reality – by selecting what it considers relevant to the explanation that seeks to build- and then to hypothesize about the behavior of those selected items and thus to build the explanation of the phenomenon that has been dealt with. The result of this is a multiplicity of approaches, which are presented as equally valid (Denari, 1991). As an additional issue, which is often found is that each

explanation is temporary; that is to say, it is developed for a specific historical moment without any aim to give an account about the development of the sector in the medium or long term.

At this work we will focus on the conceptions that analyze the performance of the pampean agricultural production from the mid-1990s until the end of the first decade of the new century-specifically, the boom in soybean production - for the purpose of contributing to the understand of the potentialities and prospects of the sector at present. In line with this, it constitutes a first specific objective of this research to verify if there is again a time of dissent among the scholars of agricultural production of the Pampas, in relation to the recent performance of the sector, due to this case - unlike the debate in the 1970s - has not been extensively analyzed in the literature. Secondly, we propose to identify the main explanatory factor in the different analyzed concepts to give account of the performance and the characteristics of the sector; that is, to point out the aspect that it is emphasized but at the same time it is partially addressed.

We understand that the importance of studying the specialized literature to identify these issues lies in the need to highlight the imperative to advance in the understanding of the sector, in its unity and specificity. Thus, the general objective in which this research is framed, although it exceeds the limits of the present work, is to show the need for a complementary view of the recent performance and the characteristics of the Pampean agrarian production in order to understand it in the accumulation unit. of capital in Argentina and its role in the International Labor Division (ITL). In the same way, the critical reflection on the recent performance of the sector, allows to count on greater tools at the time of planning strategies of production in the Pampas agriculture.

## **Methodology**

In the present work we focus on agrarian production of the pampas, leaving aside not only the livestock activity but also the crops of other regions of the country. This decision is based, not only in the greatest literature available for that production, but also in its relevance to the national economy.

The methodological approach is qualitative, using the documentary method. Then the empirical position is constituted by the objective work of the researchers, that is, the scientific production. Therefore, the sources are texts, in the form of scientific books and articles and the technique to use is the historiographic method.

Finally, the selection of the authors is carried out in such a way as to cover the range of concepts that are in discussion around on how to explain the performance of the pampas agrarian sector in the mentioned period (from the mid-1990s until the first decade of the year two thousand). After an extensive bibliographical review, the authors and texts, more

representative of each of the identified currents, are selected on which the present research focuses. In this sense, it is not intended to include in an exhaustive way different authors, but to those who, in our opinion, represent better the different conceptions that are intended to characterize according to objectives of this work.

The development of this work consists of three sections. The first of them presents the historical background in which it is intended to characterize the situation in the agricultural sector of the Pampas since the mid-1990s. In order to do this, it is included references to the international and local situation. In the second section, the authors who constitute our object of analysis are outlined. Finally, the results of the research are presented in the last section.

## **DEVELOPMENT**

### **The historical Background**

Before presenting the analysis of the different conceptions, we briefly develop the historical context based on the writers who are going to be studied later. The purpose is identifying the various approaches that attempt to explain the behavior of the agricultural sector in the Humid Pampa since the mid-1990s. Thus, the following is a self-elaboration based on the authors who tell the story of the Agro of the pampas, such as Inigo Carrera (1999), Barsky and Gelman (2001), Anlló et al., (2013) and Basualdo (2013).

The last years of the government of Alfonsín, characterized by the great instability of the macroeconomic variables, coincide with the interruption of the expansive process of the Pampean agriculture (SIIA, 2017). With the start of the Menem government, the reforms imply for the agricultural sector, a plan to eliminate export rights and the liberalization of foreign trade, which, however, the sector is affected by the low profitability and the reduction of production, since local policies seem not to be achieved to counteract the fall in prices and international demand (Data Bank, 2017). From 1991, the deepening of economic deregulation implies the dissolution of all the bodies operating in the sector, the elimination of taxes and fees on exports, the reduction of tariffs on the import of inputs and agricultural products and the lowering taxes on inputs such as diesel fuel and tires. In addition, the set of macroeconomic measures restores the volume of credit, including for the agricultural sector.

During the decade of 1990, It was registered in the agrarian production of the pampas various effects. On one hand, the intensification of capital investments, the deepening of technological changes and the expansion of the agricultural frontier initiated in the previous years produce expansive processes. The economic measures of the Menem government achieve the improvement of the profitability in the sector which boosted by the great rise of the

international prices of cereals and oilseeds that takes place in the middle of the decade, between 1994 and 1997. In the 1997/98 campaign, Argentina became the world's second largest exporter of soy flour and in the first exporter of soybean oil, sunflower oil and pellets (data bank, 2017).

In relation to the deepening of technological change, the processes of liberalization of markets enable the reduction in prices of agricultural inputs and machinery. Thus, the improvement in world prices in the mid-1990 (data bank, 2017), together with the recovery of credit, induce the growth of investments in the sector. Seeding pools provide a tool which channeled the savings from other sectors toward agriculture. They have the advantage of producing a larger scale, leading to better marketing conditions both for the purchase of inputs as well as the sale of their products. In addition, the diversification of production that characterizes allows the reduction of climate risks. It also consolidates technological change by using a greater amount of inputs and by having the advice of professionals. In addition, its action contributes to the concentration of production, although it does not modify the property holdings. The advances that are incorporated in these years have to do with precision devices, electronic sensors, commands, geographic positioning systems, satellite TV and complementary irrigation for extensive agriculture. In turn, the use of herbicides, fungicides, insecticides and fertilizers is multiplied.

However, the most decisive innovation of the decade is the introduction of transgenic varieties of soybeans and corn, which involve the application of a new technological package integrated mainly the greater diffusion of direct sowing, the incorporation of more complex machinery and the increase in the use of fertilizers and agrochemicals - especially glyphosate (wheat, 2016). The new package implies lower costs - due to the reduction of tillage work-, better control of weeds and increases in yields. Transgenic soy not only has the particularity to be resistant to herbicides (glyphosate) and can be introduced in areas that until then were non-arable land, but also has the property of being self-pollinating, which implies that it is a seed self-reproducible. This feature - which do not possess the hybrid seeds - facilitates its quick diffusion.

Toward the end of the decade of 1990 an important fall on international prices, which has an impact on the profitability of producers (data bank, 2017). This period also shows the disappearance of a large number of farms (SIIA, 2017).

After the convertibility, the devaluation of the year 2001 involves a great transfer of wealth toward the exporting sectors, including agriculture. While the export duties are restored, they do not counteract the effects of devaluation. In addition, a large part of agricultural producers who have been heavily indebted during the previous decade, thanks to the asymmetric pesification, liquefy their debts.

From there, a favorable period begins for the sector: the domestic market is expanded and the international prices are recover (Data Bank, 2017). Likewise, from the State, the resources are increased to the INTA (National Institute of Agricultural Technology) and to the development of science and technique for the sector.

Then begins in the decade of the 2000 a process of expansion of the production, which is reflected in both the improvements of the yields as well as in the extension of the agricultural frontier (SIIA, 2017). With regard to the latter, on the one hand, technological changes allow the cultivation in non-traditional areas, especially direct seeding allows working with lower levels of humidity; On the other hand, transgenic varieties allow two harvests per year, which means a doubling of the usable area (Lacelly e Ybran, 2016).

In the process of agricultural expansion of the first decade of the 2000, the role of soybeans is crucial (Leavy and Allen, 2015). Since its introduction in the decade of 1970, it comes to represent more than half of the area sown and the volume produced in the mid 2000 (SIIA, 2017).

Finally, in relation to innovations, the introduction of 'precision agriculture' has been advanced in recent years. Thus, the incorporation of technological complexities implies that the productions require a more intensive use of capital and a minimum scale of exploitation, as well as a more complex management process, all of which leads to the concentration of production. In relation to the actors of the deepening of technological change that occurs during the p post-convertibility, the growing role of the machinery contractors and suppliers of inputs can be seen.

In conclusion, since the beginning of the new century, the consolidation of the new productive package, based on soy, occurs at the same time that Argentina, year after year, achieves production records and increases its holdings in international markets (Data Bank, 2017). Since the mid-1990, the agricultural production of the pampas is more than doubled, as a result not only of the increased of the sown surface, but also of the yields (SIIA, 2017). Reducing the productive gaps and in the Pampean crops Argentine yields resemble international registrations. Without a doubt, this national agricultural expansion is given at the same time as international demand -mainly of Chinese origin- growing steadily (Oviedo, 2015; Desai, 2015)

### **Economic Explanations on the pampean agro**

For the presentation of the conceptions that emerge from the boom in soybean production that begins to be consolidated in the middle of the decade of 1990, It is intended to subgroups to give account of the explanatory engine found in each one of the authors. In

relation to this point, it is important to point out that the division of the explanations in sets does not imply that they do not have points of contact between them. As a result, what guides the proposed structuring is the identification, in each case, explanatory engine which, we believe, structures the whole argument of the authors, which does not invalidate that, without prejudice to it, there may be other determinants in the explanations.

In addition, the following proposal is not intended to be exhaustive. On the contrary, the objective is to analyze the specialized literature including a significant variety of authors so as to be able to verify the hypotheses of this work.

Since the mid-1990, the records in the levels of agricultural production of the pampas are accompanied by significant productive and technological transformations, which therefore, have lead increases in yields per hectare. In each case, the authors rescue an aspect that characterizes the sector's performance and make it the engine of that behavior. As well, there are those who focus on the dynamics of technological paradigms (1), those that do it in the favorable context, either international, understanding the process as a global or either local, thanks to Argentine economic policy (2). Those who consider that the basic issue is the presence of new actors -planting pools- (3). And those who structure their explanation by analyzing the power relations - in this case, the crucial factor is that the oligarchy becomes part of the dominant bloc- (4).

We understand that in each conception may be a feature of the process under analysis, from which to construct the argument, without leaving aside other traits that appear as contextual or complementary.

### **Dynamics of the process of innovation: technological paradigm shift**

Anllo et al., (2013) argue that the extraordinary performance of the sector in the years 2000 is due to a process of change of technological, organizational and productive paradigm which is part of the biological revolution in progress at the global level. This explanation is inscribed in evolutionary theory, which understands that the economic systems are dynamic and evolve over time, through processes of learning, interaction with the environment and influence of the past. Therefore, from this perspective, the economic cycles are explained on the basis of the succession of technological paradigms. The consolidation of a new paradigm explains the upward phase of the cycle, and the depletion of an old paradigm, the downward phase. The change of one paradigm by another is initiated, according to these authors, when a group of renewed entrepreneurs risks to implement new technologies, thus obtaining rents.

Specifically, in relation to the performance of the sector since the mid-1990, these authors explain that what occurs is the consolidation of a new paradigm, whose first signs begin to occur in the decade of 1970. In his view, the exhaustion of the previous system

induces various responses that are laying the bases of the technologies which would be basic in the new model (mayor of mechanization, especially tractors- hybrids, early advances in direct sowing, the more intensive use of fertilizers and biocides). However, it is in the decade of 1990 that the incipient dynamism of the international markets, plus the reforms in the local economy - with its corresponding reflection in relative prices - produce the conditions to carry out an abrupt process of capitalizing characterized by technological modernization, the concentration of production and increasing indebtedness. Then, as the authors continue, there is a consolidation of the new model of production and technology that dramatically improves the profitability of the sector with the end of convertibility. This way, after several decades, the Argentine agro returns to show a similar dynamism that characterized it in the early 20th century.

Finally, it should also be mentioned that however, the context, plays an important role for the authors Bisang et al. (2015). For them, at the beginning of the decade of 1970, It begins to take place the first preconditions for future changes, due to the changes in economic policy. However, it is from the decade of 1990 that the consolidation of change is produced by the conjunction of several factors, namely: the dismantling of a series of local economic regulations, the recovery of international prices and the consolidation of new crops (soybeans). Thus, in those years, there is a process of growth with debt by appealing to technological change. In the second half of the decade of 1990, the authors explain that the conjunction of the public sector indebtedness with the unfavorable international conditions and problems of convertibility, induce the massive incorporation of cost saving techniques and technologies, and a new organizational model (agriculture under contract). With the purpose of the convertibility, the asymmetric pesification is produced (when the liabilities of the sector are blended), it improves profitability and the possibility of self-financing by the sector appears. Then, the technological capabilities accumulated during the previous decade, reductions in the liabilities, the improvements in international prices and later, in domestic relative prices, lead to new records of production, continue to Anllo et al. All this, of course, accompanied - and made it possible- by an increased in the international demand. Later, the authors conclude that in the second half of the first decade of the 21st century, international prices explode, which constitutes a new force for the growth in production, the increase in the frontier and the deepening of the technological model. In summary, from this approach, the extraordinary performance of the agro of the pampas in the years 2000 is the consequence of the consolidation of the new technological paradigm, being that the succession of paradigms responds to its own logic, although there are more contexts favorable for its consolidation (both in local and international terms).

## **Favorable Context**

Pierri and Abramovsky (2010) also emphasize the adoption (and consolidation) of the new technological package to explain the soy boom and the production records of the last decades, which, they point out, is made possible by the improvement in profitability that occurs thanks to the growing demand for countries in the Orient and to the change in economic policy - essentially, the devaluation implies to liquefy the liabilities of a sector heavily indebted. In other works, (Pierri, 2004; Pierri and Junior, 2017), however, these authors warn that the literature tends to overestimate the importance of technological innovation and the private effort, minimizing the role of the State and the global context- regarding the possibilities of that production find international demand. In this way, they seek to emphasize, on the one hand, the influence of the state initiatives to improve the production and export of soybeans and, on the other hand, the international context in which the production - and the demand of soybean explodes. Thus, the main conclusion of this approach is that the explanations on the sector's performance should not focus exclusively on local aspects, being essential to the international context, that is, the extraordinary global demand for agricultural production in the Pampean region, which has an impact on prices for these products.

Also highlighting the importance of understanding the phenomenon worldwide, Anino and Mercatante (2009) argue that increases in yields of the last decades are due to global processes of technological advances and expansion of the agricultural frontier throughout the world. However, the authors recognize that Argentina benefits relatively more than other countries from the improvements that allow the increase in yields in the agriculture. In their opinion, what differentiates the Argentine process and explains the increase in income, is the massive scale with which to apply new technologies that simplify the production process. In our country, from the decade of 1970 begins a process of agriculturization that is increasing the yields per hectare and the profitability of crops. The introduction of the transgenic seed allows the development of simpler and much more standardized production processes that rest in the machinery and less in the expenditure of labor force. Thus, the authors explain, the reduction of the necessary work results to increase the productivity (same yields with less work), which generates more income and extraordinary profits. The authors' conclusion is that the increase in yields and the shifting of the border that occurs at the local level are part of a global process orchestrated by multinationals seeders, agrochemicals suppliers and grain exporters. Thus, the updating of the agricultural of the pampas is given at the same time that it subordinate character is deepened. To understand the authors, the process that is reflected in the increase of production aggravates, however, the insertion dependent of Argentina, as agricultural appendix of the central countries.

Barsky and Gelman (2001), when they analyzed the performance of the sector since the last decades of the 20th century, indicate that there is a new expansion of production which, although it was based on the deepening of technological change, could not have been given without the extraordinary rise in international prices of cereals and oilseeds. In the middle of 1990 the record harvest of the previous decade is exceeded, which identifies as a continuation of what is already happening in the sector, in relation to the expansion of production, the deepening of technological change and the expansion of the agricultural frontier.

However, the authors point out that in the last years of the twentieth century, the sector is harmed by facing adverse conditions: Fundamentally, international prices drop to its previous levels (it had reached very high values between 1995 and 1997), which is combined with a local context of political and economic instability (rise of the interest rate and domestic prices). This situation is reversed, according to Barsky and Gelman, in the 2000, thanks to the change in economic policy, added to the possibilities given by the consolidation of technological change (both the increase of the yields and the expansion of the agricultural frontier), causes spectacular leaps in the production of cereals and oilseeds. In this way, we see that this perspective, in explaining the evolution of the sector's performance, prioritizes the international context, specifically international prices, highlighting secondly, the influence of local policies.

In the same way that Pierri, et al., (2006) also emphasize the role of the State to explain the process that crosses the agro pampean in recent decades, although in this case appears as the determinant factor in the extraordinary performance of the sector. These authors explain that, as a result of the devaluation, the relative prices structure, which implies a reduction of the costs in dollars for the sector and leads to a multiplication of profitability. Thus, the conclusion of Rodriguez and Arceo (2006) is that the extraordinary growth of the agricultural production of the Humid Pampas is produced by the increase of the profitability that takes place from the end of the convertibility. In this sense, according to these authors, the role of the State is key to explain the performance of the Agro of the pampas in the early twenty-first century, since the last cause is the economic policy that takes place.

### **New actors**

Looking at the performance of the sector in recent years, Fernandez (2010) pointed out that a new form of production is developed, led by the planting pools. In his view, the growth of production is the result of the saving of capital that derives from the fact that the production is carried out on a larger scale, with the corresponding homogenization of technology; therefore, says Fernandez, the process led by the seeding pools allows the release of capital that can be used in ways other (such as, for example, be offered as income for the rent of more

land to expand the scale), although it does not imply that occurs with higher yields per hectare. This does not necessarily lead to greater investment, but rather to a more powerful investment -lower costs per hectare sown- by the use of economies of scale. In this sense, this explanation emphasizes the role of the seed pools - that is, the emergence of new players in the sector - to understand the productive boom of agro from the pampas. In his view, planting pools imply that it occurs more efficiently, which led to the growth of production.

### **Power relations**

Basualdo (2013) also identifies that the extraordinary performance of the sector relates to the emergence and consolidation of a new paradigm and intends to investigate the processes and actors behind it.

To understand this author, although the productive and technological paradigms are developed internationally, their incorporation in Argentina depends on the decision of the land owners, who evaluate them according to its maximization of profit. Thus, what happened in the 1990, a new paradigm of agriculture matures and, it is not the exception in this sense: the owner is the key player in the soybean model. Consequently, this perspective challenges the idea of the consolidation of a new type of innovative owner, since it argues that the productive and technological transformations that take place in the last quarter of the 20th century are carried out by the great traditional landowners, starting from the interruption and the substitution of imports in 1976 (Arceo and Basualdo, 2005).

To understand the transformation of the agricultural sector of the pampas, from this perspective, it should be understood that from the facto government installed in March 1976, a process driven by the oligarchy, which is once again constituted in the dominant bloc, is initiated which means a forced interruption of the substitutive industrialization. As a result, there is an alteration of relative prices in favor of the pampas oligarchy, which results in an increase in the production and productivity of the agricultural sector. At the end of the dictatorship, with the first democratic governments, especially during the convertibility, the tendencies towards the deindustrialization are consolidated, causing the transition from an industrial economy to another financial, agricultural and services, says the author.

In this context, according to Basualdo, the technological change is carried out by the historical subject of the sector, that is, the owner. Thus, the current soybean paradigm not only does not question the importance of the owner, but it is the central actor in its operation, although it acquires new features. As the economies of scale are exacerbated, the importance of the great property is strengthened, so the centrality of agricultural production is exercised by a specific fraction of the owners: pampean landowners. In summary, in this approach, the transformation of the agricultural sector of the pampas is mainly explained by the central role

of the oligarchy within the dominant sector from 1976. As well, the pampean landowners from their dominant position decide the introduction of a new productive and technological paradigm -which is available internationally - because it means a higher income.

### **The analysis of the economic explanations on the agro of the pampas: the hypothetical-deductive popperian method**

The process of knowledge of modern science, from the perspective of the hypothetical-deductive popperian method (Popper, 1962), consists in the search of hypothesis that can be evaluated according to its correspondence with the reality, that is, it can be contrasted with empirical evidence to be collected in relation to a certain phenomenon that wants to be understood.

The problem faced by Popper is to demonstrate the development of scientific knowledge with objective principles, since, in his view, it is not possible to justify, from logic and reason, the connection from the singular statements to a universal statement. In other words, the author confronts the problem that involves the inductive method in relation to how to justify the universal statements. Thus, in an attempt to justify the process of scientific knowledge, He points out that the functioning of science consists in proposing the hypothesis about a certain portion of reality - the phenomenon that is intended to be explained - from which, through the deduction, conclusions can be obtained that have the form of a testable predictions, that is, that can be compared with the empirical basis, which is constituted by a set of singular statements whose veracity is not questioned.

Specifically, the predictions should be set forth that may be false from empiric; therefore, for Popper, while it is possible to conclude the falsehood of a hypothesis, instead, it cannot be concluded its truth. In this way, the process of knowledge is to test repeatedly the capacity of the hypothesis of not being rejected for not being, so far, the empirical experience that contradicts the predictions that emerge from them. If a prediction is contradictory to the empirical experience, the hypothesis from which it is derived has been false. The falseness of a hypothesis means that it is not fit to the practical experience, being that it is considered a faithful reflection of the phenomenon that it is intended to be explained. This fundamental characteristic of the method presented by Popper is what gives the name of falsifiability. The consequence of the method as the author is that the truth can never be reached directly: Theories, Hypothesis, cannot be demonstrated as true. On the contrary, these are preserved as corroborated while there is no singular statement of the empirical basis that contradicts the predictions derived therefrom.

From this point of view, it is not problematic, for the development of science, the fact that it cannot be known whether the Truth has been reached, because the method guarantees

move closer to it; therefore, science advances through the refutations, on a path in which the absolute truth acts as a regulatory principle. It follows the importance of theoretical systems being susceptible to being false so they can be part of science. In turn, this method holds that truth is not only static but immediate, since the hypotheses are contrasted with descriptive singular statements (empirical basis). As a result, from this conception, It is intended to explain the reality but at the same time it is formally possible to address it capturing partial aspects of the phenomena.

Next, we propose to see how this form of knowledge is presented in the conceptions that attempt to explain agricultural performance of the pampas. As we advance in the introduction, the aim of the present work is, once it is identified the recurrent dissent that is verified in the literature on agricultural performance of the pampas, to study the various recent conceptions through a methodological analysis. The hypothesis that guides this analysis is that the lack of consensus among the authors comes from the general way of approaching the phenomena. In this sense, the popperian method describes the process of elaboration of hypotheses or theories and, therefore, as it is tried to show then that which, we understand is directly linked to the existence of a multiplicity of conceptions equally valid (that is, the lack of consensus).

In the preceding section, we present a variety of explanations referring to the performance of the agricultural sector of the pampas. Depending on the proposed structure, we intend to highlight how, beyond the observation of the same phenomena, explanations are constructed that are far from each other. In other words, the different conceptions, even with the same characterization of what they intend to give an account, argue about the performance of the pampean agricultural production by identifying various explanatory engines.

Thus, the phenomenon which is intended to explain -the extraordinary performance of 2000-, the different approaches start from identifying the elements that considered relevant. In this way, in almost all conceptions, the same characteristic elements appear: the transformation of the productive process, technological change, the improvement in international prices and the modification of the local economic policy that becomes more favorable for the sector (opening and economic liberalization since the decade of 1990 and devaluation in 2002). Again, not only each approach highlights various elements of that package, but then different explanations are structured even starting from the same postulates.

The way in which we present the approaches - identifying the explanatory engine of each conception- aims to show this feature. In line with this purpose also, we develop the historical context in which the different authors write in order to show that, even arguing differently when it comes to give an account on the sector's performance, it can be found a common characterization of the moment that analyze. In other words, as we travel through specialized literature, we can identify, in the multiplicity of approaches, common elements to characterize

the phenomenon to be explained, which we intend to highlight by grouping them in the section of the historical context.

Then, we classify the authors according to the explanatory engine. Again, this way of structuring the section is intended to give an account that, after the selection of the relevant elements, in each case there is a different hypothesis to explain what actually happens, which seems to have no other origin than the subjectivity of each author.

## **CONCLUSION**

This work has been developed in two complementary and intrinsically linked parts. The first of these refers to the study of the literature on the recent agrarian performance of the pampas and the second to its methodological analysis.

Thus, as a starting point for the first part of this research, we have made a review of the specialized literature that deals with the performance of agricultural production of the pampas. The result of this study has led us to confirm the dissent among the authors to explain the recent behavior of the sector. In this way, the specific objective of this research has been fulfilled which has consisted in verifying that in fact, a time of dissent is being produced again among the scholars of agricultural production of the Pampas, in relation to the performance of the sector in the years 2000.

The study of the specialized literature has been able to carry out in pursuit of the wielded explanatory engine in each one of the cases. Thus, the result has been a structure that involves a classification of the various approaches depending on which is the main cause of the extraordinary performance of the sector, in line with the assumptions of the work.

Then in the second part of the work, in the methodological analysis of the explanations on the agro of the Humid Pampa, the correspondence has been identified between the form of approach of the revised conceptions in the first part of the work and the hypothetical-deductive popperian method, epistemological support of the way of knowing the conventional economic science.

The identification of this epistemological base as a sustenance of the conceptions about the agro pampeano studied previously, has allowed us to corroborate the hypothesis according to which the lack of consensus among authors comes from the general form of boarding the phenomena in economic science. In other words, we have identified how the multiplicity of approaches derive from each one of them, after selecting the elements that are considered relevant to the explanation to be developed, hypothesized about the behavior of these elements, in concordance with the hypothetical-deductive method. Thus, each conception,

first performs a specific cut of reality and then develop a hypothesis to relating the selected characteristics, construct the argument that realizes the phenomenon that is intended to explain.

In this way, the methodological reflection of the authors has allowed us to shed light on the potentialities and limitations of each of them to understand the agricultural sector of the pampas. In line with this, the linkage between the popperian method and the multiplicity of approaches (equally valid) to give account for the same observed phenomena, has shown the need to question the way of approaching of what is intended to be accounted as part of the economic analysis.

Thus, the present investigation, which has been based on the need for a complementary look at the performance and characteristics of the pampas agricultural production for both understand it in the unity of the accumulation of capital in Argentina and its role in the International Division of Labor (DIT), as to have more tools when planning production strategies in the agricultural sector of the pampas, It has indicated as a starting point the imperative to critically reflect on the approach of the phenomena. In other words, we have found that the study of dissent in the agrarian economic literature, emphasizing the methodological issue on which it is based, is presented as a particular case of critique of the method of scientific knowledge, which opens up the perspective of delving deeper into the study of its potentialities and limitations, in order to advance toward its improvement.

## **REFERENCES**

Please refer to articles in Spanish Bibliography.

## **BIBLIOGRAPHICAL ABSTRACT**

Please refer to articles Spanish Biographical abstract.